

Accessibility of Soil-transmitted Helminthiasis Control Strategies in Selected Indigenous People Communities in the Philippines

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ABSTRACT

Background. Indigenous peoples (IPs) remain vulnerable to soil-transmitted helminthiasis (STH) due to limited access to sanitary toilets, clean water, quality health education, and services. The World Health Organization recommends periodic mass drug administration (MDA) of anthelmintics, health education, and improvements in water, sanitation, and hygiene (WASH) as control strategies to reduce morbidities caused by STH in target populations such as school-age children (SAC).

This paper complements the published results of the parasitological survey (prevalence and intensity of STH) conducted in selected Aeta and Ata-Manobo communities.

Objectives. This study aimed to describe the accessibility of STH control strategies to respond to the needs of SAC in IP communities in Pampanga and Davao del Norte, the Philippines. It likewise intended to describe access of these IP communities to STH control strategies.

Methods. Data on accessibility of and access to STH control strategies were collected using key informant interviews (KIIs) and focus group discussions (FGDs). Eleven officials and workers from the departments of health and education, local government units, and two IP leaders were interviewed on the existing STH burden in SAC, implementation of STH control strategies, particularly of MDA, health education campaigns, and improvements in WASH including good practices and challenges in program implementation.

Three FGDs with parents, elementary school teachers of IP schools, and rural health midwives were conducted separately. Guide questions focused on accessibility of and access to STH prevention and control strategies for SAC in IP communities. Informed consent to conduct and record KIIs and FGDs were obtained from participants prior to participation.

Analysis of a multi-disciplinary team was based on the accessibility framework for IPs accessing indigenous primary health care services by Davy et al. (2016).

Results. The characteristics of the STH control strategies and the target populations are interrelated factors that influence accessibility. Challenges in the availability of the MDA program, particularly, inadequate staffing, drug shortages, and delays in delivery affect accessibility of and access to the free STH control strategies. Perceived harm, adverse events, stigma, beliefs, and practices likewise



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affect access. Lack of information on the similarity of treatment through community- and school-based MDA programs also affected engagement of SAC.

IP communities are special settings where geographic isolation, peace and order situation as well as water supply need to be considered to help ensure access to STH control strategies, high MDA coverage, and improvements in WASH leading to desired outcomes.

Conclusions. Considering the context of IP communities and addressing the challenges in the accessibility of and access to STH control strategies are necessary to ensure successful implementation of an integrated approach in STH prevention and control strategies. Challenges in the accessibility of STH control strategies are inadequate staffing, poor inventory, and delays in the delivery of drugs, as well as poor sanitation and hygiene. Access of SAC is likewise affected by misconceptions on safety and efficacy of anthelmintics, including stigma and cultural practices. The similarity of the MDA programs based in school or community need to be disseminated.

Keywords: accessibility, indigenous people, soil-transmitted helminthiasis, mass drug administration, WASH, control and prevention

INTRODUCTION

Indigenous peoples (IPs), comprising approximately 13% of the Philippine population, remain disadvantaged and vulnerable to health inequities.¹ They experience higher rates of health risks, poorer health, and greater unmet health care needs.^{2,3} Furthermore, they have limited access to sanitary toilets, clean water, and quality health education⁴, making them susceptible to parasitic infections, particularly, soil-transmitted helminthiasis (STH). STH is a neglected tropical disease (NTD) most commonly affecting populations living in areas of poverty where open defecation (OD) persists.^{2,5} School-age children (SAC) are among the at-risk populations for STH and infection causes impairments in their growth and physical development, as well as in their nutritional status.⁶

World Health Organization (WHO) recommends annual or biannual mass drug administration (MDA) of anthelmintics where baseline prevalence of STH is 20% or higher, health education, and improvements in water, sanitation, and hygiene (WASH).^{6,7} Control programs should achieve $\geq 75\%$ MDA coverage⁸, and reduce the prevalence of moderate-to-heavy intensity (MHI) of STH to $< 2\%$.⁹ In the Philippines, the Integrated Helminth Control Program (IHCP) of the Department of Health (DOH), implemented since 2006, aims to achieve $\geq 85\%$ MDA coverage and $< 50\%$ prevalence of STH in SAC.¹⁰ Studies conducted among IPs have shown that STH remains to be a challenge in the

population despite the on-going national control program. In 2009, prevalence and MHI of STH in IP SAC in Davao del Norte were significantly higher than in non-IP SAC.¹¹ Prevalence (97%) and MHI (83%) of STH in Aeta SAC of Katutubo Village in Porac, Pampanga were way beyond the national and global targets in 2011.¹² Global and national targets for WASH is universal access (100%) to safe water, adequate sanitation, and hygiene.^{13,14}

Accessibility of STH control strategies requires more than the provision of the services within proximity to the target populations or recipients. Issues in relation to the IPs' abilities to access these strategies should likewise be considered. According to Davy et al.'s accessibility framework for IPs accessing indigenous primary health care services, a modification of the framework by Levesque et al.¹⁵, access is not limited to the user reaching the health care service, but also considers other important factors in relation to how IPs engage with and remain engaged with the service provided.¹⁶ The five dimensions of accessibility of services for IPs, namely, **acceptability**, **availability**, **affordability**, **ability to engage**, and **approachability** interact with corollary dimensions of IP abilities, which include the ability to: 1) **perceive**; 2) **reach**; 3) **pay**; 4) **seek**; and 5) **engage**.^{15,16}

Acceptability is the suitability of the health care services offered, in terms of its conformity to social and cultural norms of the community it serves. It relates to the **ability of people to perceive** the need to seek care, which may be influenced by their personal values, culture, beliefs, and norms. **Appropriateness** or the ability to engage of the service denotes the "fit between services and client's need, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment, and the technical and interpersonal quality of the services provided."¹⁵ It considers the extent to which the service provided meets the needs of the communities they serve and relates to the **ability of the communities to seek** the services offered. **Availability** of health services refers to whether or not services can be reached both physically and in a timely manner, and it corresponds with the **ability of the communities to reach** these services when needed. **Affordability**, on the other hand, reflects the expenses entailed for the provision of the health care service and relates to the communities' **ability to pay** or the "economic capacity for people to spend resources and time to use appropriate services."¹⁵ Lastly, **approachability** is influenced by the degree to which an individual can recognize that a certain health care service exists and has an impact on the health of the individual. It considers the **ability of the individual to engage** with the services.

In contrast to this linearity, the modified framework of Davy et al. (Figure 1) shifts from a linear perspective of access and accessibility to one that depicts the interconnectedness of all components. To demonstrate, the ability of the target population to pay for the service was found to be closely related to their ability to reach the said service. Furthermore, the ability to engage was not only relevant to the appropriateness

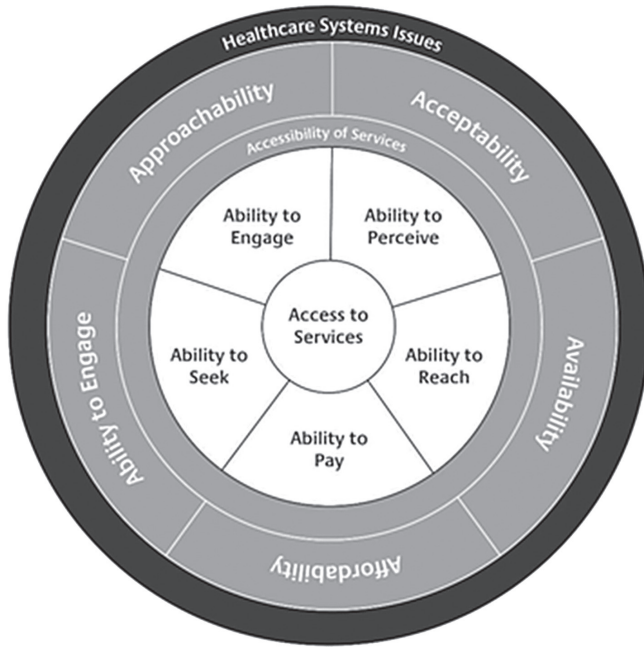


Figure 1. Accessibility framework for Indigenous peoples accessing indigenous primary health care services. From Davy et al., 2016.¹⁶ Reprinted with permission.

of the service, but it was also influenced by the acceptability of the service. This framework may serve as guidance in identifying a range of challenges, as well as the means in which they have been addressed.^{15,16}

This study aimed to describe the accessibility of STH control strategies to respond to the needs of IP communities in Pampanga and Davao del Norte, the Philippines. It also aimed to describe access of these IP communities to STH control strategies.

This qualitative paper forms part of the research entitled, “Deworming outcome project: Status and control of soil-transmitted helminthiasis in IP children in selected communities (Status of integrated helminth control program implementation in children in IP communities).” The quantitative results of this research were published separately and included data on the results of the parasitological survey (prevalence and intensity of STH) conducted in selected Aeta and Ata-Manobo communities in Pampanga and Davao del Norte.

METHODS

Study sites and population

Site selection was based on the presence of IP communities, accessibility, peace and order situation, and willingness of the local government units (LGUs) and tribal leaders to collaborate. IP communities included were the Aetas in Floridablanca and Porac in Pampanga in Central Luzon and the Ata-Manobos in Kapalong and Talaingod in Davao del Norte in Mindanao, the Philippines (Figure 2).

Aetas are considered the oldest living descendants of the original inhabitants of the Philippines. Although nomadic, some have settled in areas where livelihood opportunities were present. They occupy upland areas and most engage in agriculture as their primary means of livelihood. They live in a close-knit community reflected in their mutual support and unity.¹⁷

IP communities from the Southern Philippines refer to themselves collectively as *Lumads*. The Ata-Manobo belongs to the Negrito groups, which include the Aetas of Zambales and Atis of Panay. In the island of Mindanao, the Ata people are concentrated in the hinterlands of Davao, specifically in the towns of Kapalong, Asuncion, and Talaingod. Most of them live in upland areas. The Ata-Manobos were basically hunters, but eventually shifted to agriculture for survival.¹⁸

Data collection

Qualitative methods such as face-to-face key informant interviews (KIIs) and focus group discussions (FGDs) were utilized. Thirteen key informants, particularly, 11 officials and workers from the concerned offices of DOH, Department of Education (DepEd), and LGUs, and two IP leaders were interviewed (Tables 1 and 2). The interview guide was designed to gather data on existing STH burden in SAC, implementation of STH control strategies, particularly of MDA, health education campaigns, and improvements in WASH in IP communities. Good practices and challenges in program implementation were also discussed.

Three FGDs were conducted among parents, elementary school teachers of IP schools, and rural health midwives

Table 1. Institutions and Designations of Key Informants in Pampanga

Institution	Designation
1. DOH Regional Office III	Local Health Support Division Head
	Communicable Diseases Cluster Head
	Regional IHCP Coordinator
2. DepEd Pampanga Division Office	Schools Division Superintendent
	Medical Officer II
	Nurse-in-Charge
3. LGU of Floridablanca	Municipal Health Officer
	Barangay Captain/IP Leader of Nabuclod

Table 2. Institutions and Designations of Key Informants in Davao del Norte

Institution	Designation
1. DOH Regional Office XI	IP Focal Person
2. DepEd Davao del Norte Division Office	Schools Division Superintendent
	Medical Officer
3. Provincial Health Office	Provincial IHCP and Schistosomiasis Elimination and Control Program (SCEP) Coordinator
	IP Mandatory Representative

Table 3. Institutions and Designations of FGD Participants in Pampanga

Institution	Designation
1. <i>Municipal Health Office of Floridablanca</i>	Rural Health Midwives
2. <i>Nabuclod Elementary School</i>	IP School Teachers
	IP Parents

(RHMs) separately (Table 3). Six to 10 participants were invited in each focus group. Guide questions focused on accessibility of and access to STH prevention and control strategies for SAC in IP communities.

Informed consent to conduct and record KIIs and FGDs were obtained from key informants and FGD participants prior to participation. Confidentiality was maintained as much as possible; however, complete confidentiality could not be assured in FGDs, in particular, due to the nature of information sharing involving numerous participants. However, the participants were asked not to talk about the proceedings of the FGDs with people outside the focus

group. KIIs and FGDs lasted for approximately 30 to 40 minutes or when saturation was reached.

Data processing and analysis

Interviews or discussions were transcribed and translated to English by trained research staff. A software was not used to analyze the qualitative data. It was analyzed by a multi-disciplinary research team with training in public health, medical anthropology, and nursing. The research team were affiliated with the University of the Philippines Manila (UPM) College of Public Health and the National Institutes of Health. The individuals and institutions had no relationship to the communities, WHO, DOH program implementers, and other stakeholders.

All categories of opinions were taken into account by the two Research Assistants who served as analysts. Disagreements were settled by their supervisors. Thematic analysis was based on the accessibility framework for IPs in accessing indigenous primary health care services by Davy et al.¹⁶ (Figure 1). Other factors beyond the modified

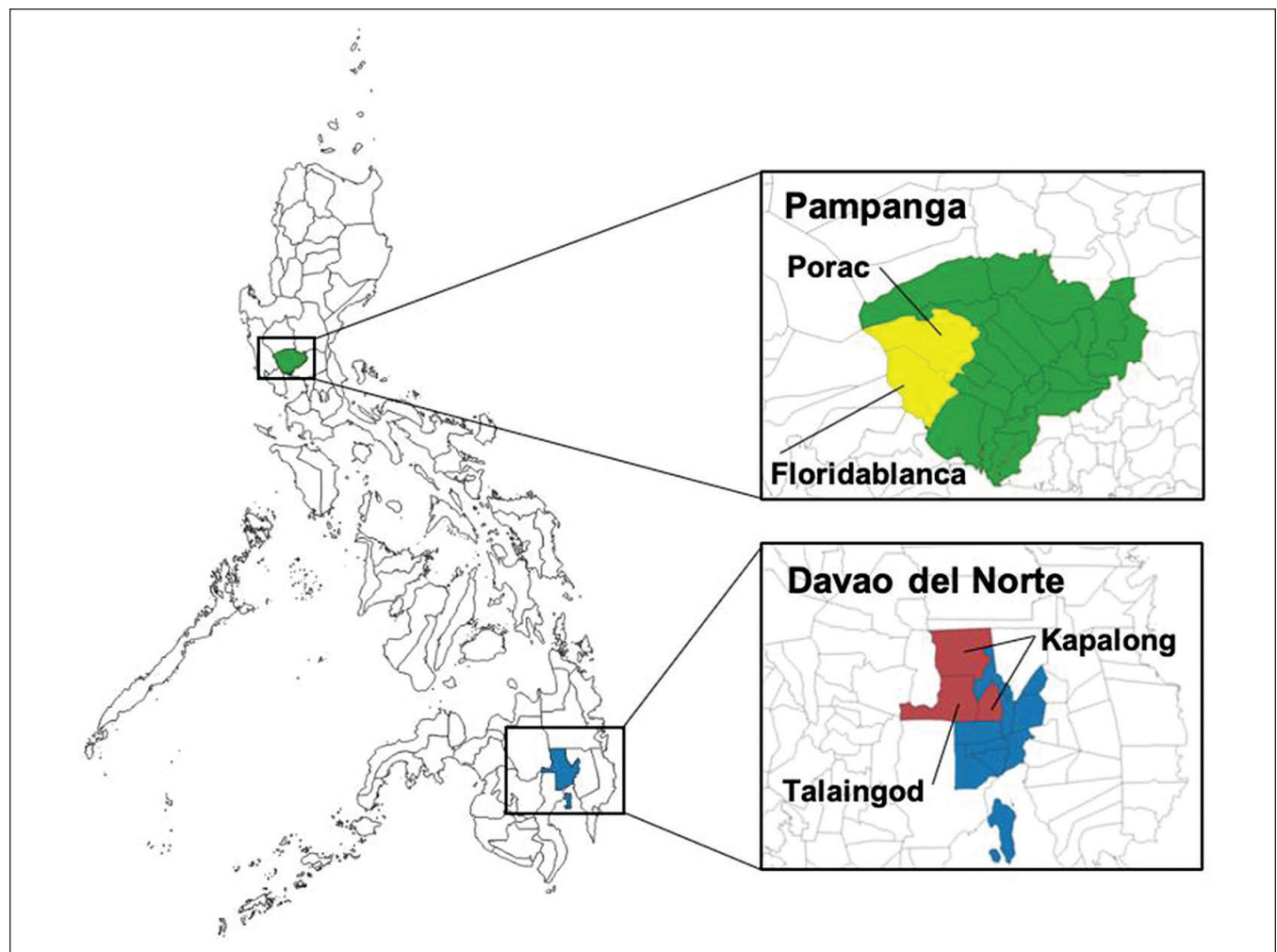


Figure 2. Map of the Philippines (*left*) and provinces of Pampanga and Davao del Norte (*right*) showing the selected municipalities.

framework were also noted. Quotes from participants were included to emphasize an important point of view. Interviews and discussions were integrated and triangulated in the results in order to address our objectives. This qualitative study has limited generalizability.

Ethical considerations

Ethics approval was obtained from the UPM Research Ethics Board (UPMREB 2017-476-01). As mentioned earlier, this paper forms part of a bigger study with both qualitative and quantitative components. Consultations with the concerned DOH, DepEd, and local health officials were conducted prior to the project implementation. IP leaders, which included IP Mandatory Representatives and tribal chieftains, were oriented on the study, and their approval was sought. Results of the study were reported in feedback fora participated in by concerned DOH, DepEd, National Commission on Indigenous Peoples (NCIP), LGUs, and IP officials, leaders, and staff.

RESULTS

Acceptability of STH control strategies and ability of IPs to perceive, seek, as well as engage

Aeta parents had a generally positive attitude towards MDA because of its perceived benefits to their children's health.

"[MDA is] for the child to be healthy and not get sick. If you see your child happy then you are happy. If the child is sick, he feels weak." – Aeta mother in Pampanga

They were aware of the morbidities related to STH such as abdominal pain and poor nutritional status. They also knew their children's high risk of acquiring STH due to the continued practice of OD and poor hygiene, and they themselves are likewise susceptible.

Some concerns on acceptability of MDA, however, were cited. Among which included fear of adverse events, such as passing out of intestinal worms, vomiting, and nausea, and the belief that deworming tablets could be too "strong" and ineffective for children.

An Aeta mother noted that MDA is unnecessary since her child continues to have normal appetite despite having abdominal distention.

"At times, worms are not expelled from the child despite having been dewormed. My child was given deworming tablet but he did not pass out any worms. He still has an enlarged stomach." – Aeta mother in Pampanga

In addition, news about the distribution of expired medicines influenced anthelmintics refusal. Stigma associated with taking anthelmintics also exists.

"There is stigma. If you were given anthelmintics, they would assume right away that the person has worms. Despite our constant reminder to deworm especially those with abdominal distension, they are embarrassed and refuse." – IHCP Coordinator, Provincial Health Office

Cultural and social factors possibly influenced MDA acceptability of Aetas and Ata-Manobos. Some cultural beliefs and practices mentioned by IP parents, leaders, and health workers included refusal to deworm during rainy season. IPs believed that children become weak at this time, thus, anthelmintics may be too "strong". Medicinal plants, such as *barwe-barwe* (*Combretum indicum* or *Quisqualis indica*) among Aetas are used for deworming instead. Its use was more acceptable and was believed to have no side effects compared to anthelmintics.

"There is an 'herbal' called barwe-barwe. This is only for those 12 years old and above. It may be too potent; the child may collapse. If eaten, worms may pass out on the nose, mouth or ears. As soon as worms were passed, one becomes nauseous. All you have to do is rest and then eat. Good thing, there is no side effect. Some expressed fears with the drugs from downtown. Sometimes, it causes death. People have different beliefs. Most prefer 'herbal'." – Aeta Leader

On the other hand, Ata-Manobos use a medicinal plant only known to them called *patod*. They also rely on commercially available drugs such as anthelmintics. These are readily provided by the LGUs, non-government organizations, and other groups during medical missions.

Another deworming practice done by Aetas included placing dampened used cigarette butts on a child's belly button to trigger passing out of worms. No specific rationale was stated besides it being a practice of their ancestors that have been passed on to them.

Availability and affordability of STH control strategies, ability of IPs to reach and pay, and barriers to MDA implementation

As part of the National School Deworming Month, anthelmintics were available at no-cost in LGUs for MDA in communities and were distributed by DOH to DepEd offices for SAC. Several barriers to the implementation of MDA in SAC in IP communities were identified.

First, inaccessibility due to geographic isolation and logistical concerns caused delays in the drug distribution and delivery of health services. Difficulty in keeping drug inventories was also expressed by the provincial IHCP coordinator. Health personnel also travel long distances to reach target groups, thereby, adding burden to insufficient number of health personnel. These contributed to the inadequate supply of anthelmintics and failure to distribute during scheduled MDA. The leader of the Ata-Manobo also

noted the importance of constructing proper roads in the delivery of health services in remote areas.

“The areas are far and hard-to-teach. Our primary problem is the roads so that government services can reach the upland areas.” – Ata-Manobo Tribal Chieftain

Second, the insurgency problem in Kapalong and Talaingod in Davao del Norte posed a challenge. Continuous threat to peace and order affected the availability of health services including MDA.

Third, the nomadic lifestyle of the Aetas was a barrier in reaching target MDA coverage among SAC in IP communities. Teachers reported absences and drop-outs due to relocation for better livelihood opportunities. MDA and other school-based health interventions may be unavailable to these nomadic populations.

“IP students are often absent, thus, the low coverage. They have a nomadic lifestyle. At times, they stay in Pampanga, sometimes in Zambales, that is why we have a problem. If only there were livelihood projects, they can survive with that income generated; they can stay put.” – Division Superintendent, DepEd Pampanga Division Office

Fourth, non-inclusion of *Lumad* (Ata-Manobo) schools in the school-based MDA program was a concern. While the current school-based MDA program has been mandated by the DepEd, *Lumad* schools are not covered.

Lastly, current WASH strategies includes the construction of communal toilets; however, the lack of water supply remains a major concern in upland Pampanga and Davao del Norte. Sanitary toilet facilities were unused and unavailable. There was also poor maintenance of communal toilet facilities, and sometimes, water pipes and lines were stolen.

Approachability and appropriateness of STH control strategies

Some IP parents expressed lack of trust in school-based programs and believed that drugs provided during the community-based MDA were more effective than those administered by health workers in schools. This notion was addressed through information dissemination during parent-teacher association meetings prior to MDA. Parents were encouraged to sign consent forms on the spot, thus contributing to higher MDA consent rates.

School clinic teachers were oriented annually on the DOH-IHCP to encourage active participation in the implementation of school-based MDA. In Davao del Norte, the DepEd Division Office developed a lesson exemplar for SAC where information on STH and MDA was incorporated to raise awareness on MDA, including its impact on community health.

Furthermore, RHMs and *barangay* health workers (BHWs) belonging to IP communities were engaged. This

Table 4. Accessibility of and Access of IP SAC to STH Control Strategies

Accessibility of STH control strategies	Access to STH control strategies
<p>Acceptability</p>	<p>Ability to perceive</p> <ul style="list-style-type: none"> • Perceived benefits • Perceived harm • Adverse events • Unnecessary due to normal appetite • Expired medicines
<p>Appropriateness</p> <ul style="list-style-type: none"> • IP RHMs and BHWs involvement • CLTS 	<p>Ability to seek</p> <ul style="list-style-type: none"> • Stigma • Beliefs – refuse MDA when rainy since children are weak • <i>Bawe bawe</i> and dampened cigarettes among Aetas • <i>Patod</i> for Ata Manobos
<p>Availability</p> <ul style="list-style-type: none"> • Commercially available drugs • Difficulty in drug inventories • Personnel travelled long distances; insufficient personnel • Insurgency • Lack of WASH 	<p>Ability to reach</p> <ul style="list-style-type: none"> • Geographic isolation • Insurgency • Nomadic nature
<p>Affordability</p>	<p>Ability to pay</p> <ul style="list-style-type: none"> • Free drugs from LGU
<p>Approachability</p> <ul style="list-style-type: none"> • Information dissemination during PTA • Annual orientation for school clinic teachers • Lesson exemplar 	<p>Ability to engage</p> <ul style="list-style-type: none"> • Community-based better than school-based • WASH program in schools

gained the IP community’s trust, lessened problems due to cultural differences, and encouraged IPs to participate in MDA. Refresher courses for BHWs on all health programs of DOH and LGU were conducted to avoid misinformation.

The comprehensive WASH in schools’ program of the DepEd promotes correct hygiene and sanitation practices among school children. Good hygiene practices are taught in kindergarten. In Davao del Norte, Community-led Total Sanitation for Zero Open Defecation (CLTS-ZOD) is an on-going program since November 2017. School principals also attend training on CLTS through the joint collaborative efforts between DepEd and DOH. CLTS-ZOD has not been initiated in Pampanga, but health promotion on hygiene and use of sanitary toilet are conducted with schools as the primary platform of delivery. OD still persists in IP communities despite these efforts.

A summary of the results of the study is presented in Table 4.

DISCUSSION

Based on the results, interrelatedness of the features of accessibility and access were evident. Addressing one domain may positively address challenges observed in another. To

illustrate, inability to perceive the benefits of anthelmintic intake due to misconceptions on the mild and transient nature of side effects of anthelmintics were found to affect acceptability of MDA in the selected IP communities. Stigma and cultural beliefs also contribute to inability to seek participation in the MDA program. Lack of information on the similarity in effect of treatment through community-based and school-based MDA programs also affected engagement of the target population. For all these domains, strengthening health education campaigns to raise awareness and knowledge on safety and benefits of deworming drugs may help address challenges in both the acceptability and approachability of MDA.¹⁹ The DOH, through the Health Promotion and Communication Service, develops information, education, and communication materials in various formats for health campaigns to ensure dissemination of beneficial information.²⁰

A potential barrier to effective health education is the use of language that may be too complex, or insufficiently explained in simple terms.²¹ IP language as a communication medium may help avoid shortfalls in conveying health information and improve understanding and prevent misconceptions, as the ability to perceive need for care is determined by factors, such as health literacy and knowledge about health. Appropriateness of MDA will also be improved as communication is tailored specifically to the population.

IP communities utilize medicinal plants for deworming. *Bawe-bawe*, one of the ten medicinal plants approved by DOH, is effective in treatment of intestinal helminthiasis. The seeds from its mature fruits are eaten.²² Promotion of quality, safe, effective, accessible, and acceptable traditional medicine, and the conservation of cultural heritage on traditional medicine is recommended by the Philippine Institute of Traditional and Alternative Health Care, through the Traditional and Alternative Medicine Act of 1997. It encourages scientific research and develops traditional and alternative health care systems with direct public health impact.

In Aeta and Ata-Manobo communities, IP leaders were highly influential in health decision-making. A mechanism for proactive and meaningful participation of IP leaders in health promotion may also be established to ensure appropriateness and encourage fellow IPs to seek and avail mainstream public health services, such as MDA. Through this, IPs are empowered as co-partners of health workers in their own health, thus, ability to engage with the services may be improved. An association between empowerment of IP communities and better health outcomes have been established.^{23,24} The participation and mobilization of IP communities in health care ensures that health services address their specific needs.^{23,25}

Challenges in the availability of the MDA program, particularly, inadequate staffing, drug shortages, and delays in delivery may leave a vulnerable group, such as IPs, untreated. Aside from geographical isolation, security issues in some remote insurgency-affected IP communities, affected timely

health service delivery and contributed to the inability of the IP community to reach the free program. Dean et al. reported similar barriers in African countries.¹⁹ As such, IPs may rely mainly on indigenous health systems and practices, some safe and beneficial, while some were contrary to safe health practices.¹

Key informants revealed that low MDA coverage was attributed to inconsistencies in IP school attendance and/or high drop-out rates due to their nomadic lifestyle to seek livelihood opportunities. This highlights how economic conditions may contribute to the inability of IPs to reach health services, in general, and how it can impact health as one of its social determinants.

Revision of policies to include students from *Lumad* schools not under DepEd during community-based MDA may be considered. Innovative mechanisms to reach children from *Lumad* schools may be further explored in consultation with DOH, NCIP, Department of the Interior and Local Government, and Department of Social Welfare and Development (DSWD). For example, the DSWD through the *Pantawid Pamilyang Pilipino* Program (4Ps) increased the number of dewormed IPs because it required deworming of 4Ps beneficiaries' children in exchange for cash grants.²⁶ School-based MDA through the collaborative efforts of the DOH and DepEd may even address challenges in limited human resource in STH control.^{27,28} To cover other out-of-school youth, strengthening of community-based MDA may also be considered.¹⁹

Challenges in WASH including lack of availability of safe water supply and sanitary toilet facilities perpetuate OD in the IP communities. DOH has indicated that, by 2022, all *barangays* should achieve zero OD status which is consistent with the Philippine Sustainable Sanitation Roadmap vision. The National Sustainable Sanitation Plan may be a reference in the development and implementation of local promotion strategies in pursuit of sustainable sanitation actions and programs in marginalized communities.¹⁴ One of the strategies is CLTS, a community-focused approach aimed at changing sanitation behaviors rather than mere construction of toilets.²⁹ Tribal chieftains participated as members of the ZOD Program Steering Committee to attain, monitor, and evaluate ZOD status.³⁰ Such may be replicated in similar sites through multisectoral collaboration of public and private sectors.

Community participation is important in ensuring that interventions on health service awareness are culturally appropriate.¹⁵ RHMs and BHWs who are IPs assist in the delivery of deworming services in Aeta and Ata-Manobo communities which enhances better communication between providers and clients, and increases access to quality health services.¹⁵ Active involvement and cooperation of IP health personnel sensitive to specific cultural needs and understands reasons for discomfort with conventional deworming methods may improve utilization of the health service.³¹ Engagement of local IP health personnel facilitates cultural

mentoring of non-IP staff on awareness of local protocols and values. Non-IP health personnel should address cultural issues and ensure cultural safety beyond knowing cultural differences to a deeper level of interaction and thoughtful practice.²³ Capacity building of health workers on cultural sensitivity in the delivery of IP health services may be considered.¹ Cultural sensitivity emphasizes that “one size doesn’t fit all” in developing strategies for effective delivery of health services as there is diversity in language, culture, and practice across IPs.³²

A culturally sensitive practice noted in Davao del Norte was the collaboration between teachers and IP representatives in the preparation of instructional materials, such as the lesson exemplar, which highlights STH control measures. This is an effective strategy in incorporating indigenous culture into the curriculum, which ensures culturally safe methods and fosters a sense of community ownership.^{16,33} As SAC in IP communities mostly retrieve information from their school teachers,³⁴ capacity building of school teachers may improve access of school-based health education and promotion services. School-based health education on STH control measures, especially hygiene promotion, improves health literacy and behavioral changes of SAC.³⁵ It is important to further develop and sustain the existing resources and initiatives in schools as an essential component of STH control in SAC in IP communities.

CONCLUSIONS AND RECOMMENDATIONS

Accessibility of and access to STH control strategies among IPs depend on the characteristics of both the health care service and the recipients as well as the context which provides additional challenges on the two. Despite the implementation of the national MDA strategy since 2006, gaps in service delivery continuously exist affecting access of SAC in IP communities to these services, further compounded by geographic isolation, peace and order situation, lack of water supply as well as cultural practices and beliefs passed down from one generation to the next. This may contribute to persisting high prevalence and intensity of STH observed in this at-risk population.

Capacity building on culturally appropriate helminthiasis control strategies of frontline health workers and IP teachers who may assist in promoting MDA may ensure reductions in prevalence and intensities of infection. Misconceptions on safety and efficacy of anthelmintics may be addressed by effective and culturally sensitive information, education, and communication strategies. By doing so, social and cultural determinants of access may also be addressed.

Determining the context of IP communities such as geographic isolation, peace and order situation, water supply as well as addressing the challenges such as inadequate staffing, poor inventory of drugs, and poor sanitation and hygiene is necessary to ensure successful implementation of an integrated approach in STH control strategies for SAC.

Furthermore, utilizing existing collaboration mechanisms for planning, implementing, and monitoring of helminthiasis control strategies may augment the limited resources for the health services in IP areas.

Findings that need to be addressed and corresponding recommendations on STH control program implementation in IP communities will, hopefully, benefit policy enhancement to improve the health status of SAC in IP communities.

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Statement of Authorship

All authors contributed in the conceptualization of work, acquisition and analysis of data, drafting and revising of manuscript, and final approval of the version to be published.

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