

Table 1. Summary study descriptions

Author, year	Location	Research focus	Qualitative methods	Setting/context	Population
WHO African Region					
Ackumey 2011	Ghana	Help-seeking for Buruli ulcer	Interviews	Ga-West and Ga-South municipalities in Accra	181 patients
Cremers 2013	Gabon	TB: patient perceptions and healthcare seeking	Participant observation, interviews, focus groups	Healthcare settings, patient homes and traditional healing settings	30 TB patients 36 relatives
Musheke 2013	Zambia	Self-care practices and health experiences of people living with HIV	Interviews	Low-income, high-density urban residential area of Lusaka	62 people living with HIV
Afari-Asiedu 2018 and 2020	Ghana	Community antibiotic access at household and community level	Focus group, interview	Rural Kintampo North and South Districts, Bono East Region	16 residents interviewed 16 focus groups (99 residents)
Ahiabu 2018	Ghana	How households respond to ill-health	Observations	Two communities in Eastern region in southern Ghana	12 rural households
Anstey Watkins 2019	South Africa	Access, use and understanding of antibiotics	Interviews, focus groups	Agincourt rural community	17 residents interviewed 6 focus groups (43 residents)
Kamati 2019	Namibia	Self-medication practices for children under five	Qualitative questionnaire	Tobias Haiyeko informal settlement in the Outapi Township	100 households
Owuor 2019	Kenya	Self-medication with antimicrobials after intervention	Focus groups	Nyalenda B informal settlement, Kisumu County	30 community health volunteers
Sambakunsi 2019	Malawi	Self-medication with antimicrobials	Focus groups	Lilongwe	15 residents
Torres 2019, 2020 and 2021	Mozambique	Self-medication with antibiotics and underlying influences	Interviews, focus groups	Nine private pharmacies in Maputo city	20 interviews, 1 focus group (12 pharmacy customers)
Agu 2020	Nigeria	Misconceptions about HIV/AIDS	Focus group	Ebonyi state	12 focus groups
Cambaco 2020	Mozambique	Community knowledge of antibiotics and practices	Interviews, focus group	Manhica District	16 residents interviewed 4 focus groups
Eibs 2020	Guinea-Bissau, Central African Republic, Democratic Republic of Congo and Sudan	Use of antibiotics and the main drivers within different contexts	Interviews, focus groups, case discussions, field observations	Clinic and community settings	62 residents interviewed 14 focus groups
Rodrigues 2020	Mozambique	Antibiotic consumption practices	Observation, informal conversation, focus groups and interviews	Maputo	17 residents interviewed 7 focus groups (42 residents)
Dixon 2021 (and Nayiga, 2022)	Malawi and Uganda	Patterns and reasons behind antibiotic use	Anthropological ethnographic study using observations and interviews	Chickwawa rural district in Malawi; Mbare and Budiroo suburbs of Harare; Namuwongo informal settlement of Kampala and Nagongera rural district in Uganda	1811 low-income households
Gbagbo 2021	Ghana	Self-medication practices among pregnant women	Focus group	Antenatal Care clinics in the Effutu and Agona West municipalities	6 focus groups (36 women)

Musoke 2021	Uganda	Access, use and disposal of antimicrobials	Focus groups	Kajjansi and Kasanje town councils in Wakiso district	4 focus groups (farmers)
Nabirye 2021	Uganda	Antibiotics and structural factors	Interviews, focus groups, participant observation	Urban informal settlement in Kampala, capital of Uganda	13 residents interviewed 2 focus groups (24 residents)
Davis 2022	Tanzania	Challenges of health care in relation to Antimicrobial Resistance	Interviews, focus groups	Three villages in Kilimanjaro, Arusha and Mwanza	121 agro-pastoral, pastoral and rural smallholders 54 mothers
Emgard 2022	Tanzania	Mothers' experiences of antibiotic use in under-five children	Focus groups	Parents or guardians attending primary healthcare facilities in Moshi urban and rural districts	
Machongo 2022	Malawi	Lived experiences of caregivers of children under five on antibiotic usage	Interviews	In a Zomba Central Hospital in the Children's Ward, Zomba-Malawi	16 caregivers
Shembo 2022	Democratic Republic of Congo	Community knowledge of antibiotics and practices	Interviews	Pakadjuma urban slum, in Kinshasa	18 adult heads of households
Green 2023	Kenya, Tanzania and Uganda	Relationship between multidimensional poverty and antibiotic use	Interviews, focus groups	Kenya: Makueni, Nairobi and Nanyuki; Tanzania: Kilimanjaro, Mbeya and Mwanza; Uganda: Mbarara, Nakapiripit and Nakasongola	82 interviews with patients; 44 focus groups with residents
Mambula 2023	Uganda and Niger	Use or demand for antibiotics	Focus groups, interviews	Four hospitals or health centres each in Mbarara, Uganda and Niamey, Niger	24 caregivers in Uganda, 30 caregivers in Niger
Valia 2023	Burkina Faso	Illness perceptions, range of healthcare providers in the community, antibiotic knowledge and reasons to seek healthcare outside healthcare facilities	Focus groups, interviews, informal conversations	Nanoro health area and Nazoanga health area	2 focus groups in Nanoro health area with 24 farmers 2 focus groups in Nazoanga health area with 24 farmers
WHO African and South-East Asian Region					
Do 2021	Ghana, Mozambique, South Africa, Bangladesh, Thailand and Vietnam	Access and use practices across communities in six LMIC and comparison by national income status	Interviews, focus groups	Community setting	16 interviews and 4–6 focus groups in each country.
WHO South-East Asian Region					
Boonmongkon 2001	Thailand	Women's explanatory models about what ailed them, forms of self-treatment, patterns of healthcare seeking, types of health services available	Ethnographic observation, interviews, focus groups	Rural, Lao-speaking (Isaan) population of Khon Kaen province, located in the impoverished Northeast	Interviews with 150 women and 20 men 3 focus groups
Chandy 2013	India	Reasons for inappropriate use of antibiotics	Focus groups	Urban and rural areas of Vellore district in the state of Tamil Nadu	2 focus groups with higher socioeconomic residents 2 focus groups with lower socioeconomic residents

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Sahoo 2014	India	Community perceptions of infectious diseases, antibiotic use and antibiotic resistance	Focus groups, interviews	Community level in two districts (Khurda and Malkangiri) of Odisha	8 focus groups with 53 residents 10 interviews 25 interviews
Widayati 2015	Indonesia	Beliefs about using non-prescribed antibiotics	Interviews	Community level in Yogyakarta City, Indonesia	
Kotwani 2016	India	Perceptions and knowledge about antibiotic use and resistance	Focus groups	Two private and three government schools in five municipal wards of West Delhi	10 focus groups: 1 teacher and 1 student focus group per school, 4–8 teachers per teacher focus group and 15–20 students per student focus group 20 interviews with village residents
Barker 2017	India	Social determinants of antibiotic use and how healthcare access, health knowledge, and income impacts patients' antibiotic use practices Behaviour of female sex workers in preventing transmission of STDs and HIV	Interviews	Five villages in the northern state of Haryana, India	
Retnaningsih 2017	Indonesia	Behaviour of female sex workers in preventing transmission of STDs and HIV	Observation, informal conversation	Localization of Gambilangu Semarang, Java province	5 female sex workers
Kaljee 2018	Nepal	Experiences of households affected by typhoid fever	Interviews, focus groups	Eleven urban and peri-urban sections in Kathmandu and Patan municipalities and two rural towns, Dhulikhel and Banepa	22 interviews with households 2 focus groups with female community health volunteers
Chowdhury 2019	Bangladesh	Practices around access and use of antibiotics and understanding of antimicrobial resistance	Interviews, focus groups	Ten villages across four different geographic areas in the economically deprived rural area, in the Chandpur District	16 interviews 6 focus groups with 43 residents
Lucas 2019	Bangladesh	How households in Bangladesh were accessing antimicrobials	Interviews	Urban area within Gazipur District and rural area within Mirzapur District	48 households (24 rural and 24 urban)
Sunpuwan 2019	Thailand	Access to and use of Yaa Chud at the community level	Interviews, focus groups	Urban and semi-urban communities of Kanchanaburi in western Thailand	16 interviews and 6 focus groups with residents
Karuniawait 2020	Indonesia	Antibiotic practice in the community	Interviews	Boyolali and Semarang	26 patients or customers attending an urban and a suburb pharmacy
Adhikari 2021	Nepal	Drivers of over-the-counter antibiotic sales	Focus groups, interview	Three provinces in western, eastern and central Nepal: tertiary hospitals and drug stores around these hospitals	8 Focus Group Discussions with 37 patients or customers 5 interviews

Kalam 2021	Bangladesh	Social drivers of antibiotic use during the COVID-19 pandemic	Interviews	Dhaka and Chattogram (both COVID epicentres)	40 interviews (20 with people diagnosed with COVID-19, 20 with people who had COVID-19 symptoms)
Kotwani 2021	India	Knowledge, practice and behaviour of consumers towards antibiotics	Interviews	Eleven districts of the National Capital Territory of Delhi	72 consumers in the community with 5-7 from each district
Nizame 2021	Bangladesh	Awareness of relevant policies and guidelines among drug shop customers	Workshops, interviews	Rural area (Kaliganj sub-district of Gazipur District) and urban area (Rupganj sub-district of Narayanganj District)	2 workshops in each rural and urban site 12 interviews with residents
Van Melle 2021	Sri Lanka	Knowledge, perceptions and attitudes regarding antibiotics and antibiotic resistance	Interviews	Tertiary care public hospital in Southern Province	18 patients with lower respiratory tract infections
Inchara 2022	India	Practices related to antibiotic use and possible reasons for these practices	Interviews	A rural tertiary health centre in Kolar	Interviews with diabetic inpatients (number not stated)
Jones 2022	Nepal	Drivers of antibiotic misuse and overuse from the perspective of the communities	Workshop, focus groups	Peri-urban site in Chandragiri Municipality and urban settlement in Bhaktapur Lockanthali	Workshops and focus group discussions with 23 residents
Sharma 2022	India	Health-seeking behaviour for childhood morbidities and concerns amongst caregivers of under-five children during the COVID-19 pandemic	Interviews	Low-income urban agglomerate in the North-East district of Delhi	17 mothers
Dhungel 2023	Nepal	If and how the pandemic posed pressure on antimicrobials	Interviews	In and around three major tertiary hospitals in Kathmandu	10 COVID-19 patients
Mitchel 2023	Nepal	Role of children in relation to antibiotic use and Antimicrobial Resistance	Secondary analysis of interview transcripts	Chandragiri peri-urban settlement in Kathmandu and Lockanthali town in Bhaktapur	10 adults
WHO Western Pacific Region					
Simon 1996	Philippines	Management and treatment of cough in small children	Interviews, case studies, observations	Tagbilaran City, Bohol	65 mothers and 12 grandmothers
Hoa 2007	Vietnam	Health-seeking behaviour and drug use for preschool childhood illnesses	Focus group	Hanoi city (urban) and Hatay province (rural)	6 focus groups (3 urban, 3 rural) with 49 caregivers, including fathers, mothers and grandparents
Jin 2011	China	User framings of technologies, socio-technical systems and practices	Interviews, focus groups	Four villages in Hubei and Shandong provinces (mid-socio-economic status provinces)	28 interviews with villagers, 12 focus groups including 3 with village committees and 9 with patients

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Le 2011	Vietnam	Knowledge, attitudes and behaviours of parents in their use of drugs for respiratory illness or diarrhoea among children under 5 years of age	Interviews, focus groups	FilaBavi in the Bavi district (rural area)	4 focus groups with 28 mothers of children under five
Huang 2015	China	Changing social and economic environment, migration patterns, knowledge of sexually transmitted infections, risk behaviours and health beliefs	Interviews	Zhabei district of Shanghai city	16 female streetwalkers
Om 2017	Cambodia	Antibiotic-seeking behaviour in the community and drivers of antibiotic misuse	Interviews, focus groups	Multiple settings including hospitals, pharmacies and primary healthcare centres	35 interviews with patient family members
Kuijpers 2018	Cambodia	Illness interpretations, perceptions of treatment and first-line treatment practices and health-seeking behaviour associated with enteric fever	Ethnographic observation, interviews, informal conversations	Multiple settings in Phnom Penh	21 interviews with patients, 17 informal conversations
Irawati 2019	Malaysia	Community residents' knowledge, attitudes and perceptions regarding antibiotics	Interviews	Jelutong District, Penang	22 residents
Lambert 2019 [2023]	China	Patterns of antibiotic use in rural China	Ethnographic observation, interviews	Anhui Province	59 patients and customers at retail pharmacies
Vilay 2019	Lao PDR	Knowledge, perception, and preventive and treatment behaviour regarding malaria	Focus groups, interviews	Champasak and Attapeu provinces	7 focus groups with 32 military personnel and 17 interviews with military personnel
Wang 2020	China	Determinants of non-prescription antibiotics dispensing	Interviews	Four counties from each province of Zhejiang, Hubei and Sichuan	24 residents
McKinn 2021	Vietnam	How people in Vietnam use antibiotics in community settings, and the factors that impact their practices and decision making regarding antibiotics	Interviews	One rural and one urban site in the municipality of Hanoi in the north of Vietnam, and one rural and one urban site in Ca Mau Province in the south	50 residents
WHO Americas Region					
Martínez 1997	Mexico	Terms used by mothers for acute respiratory infections and their management practices	Ethnographic observations, interviews	Rural communities in central Mexican highlands	24 mothers of children under 5 and 12 mothers of children who died from respiratory infections
Person 2006	Dominican Republic	Health beliefs, health-seeking behaviours and self-care practices of women with lymphoedema in filariasis-endemic areas	Interviews, focus groups, field notes and photographs	Filariasis-endemic areas of the country	56 women with lymphoedema of the leg: 28 interviews and 3 focus groups

Ruelaz Gonzalez 2012	Mexico	Medicine use by senior citizens	Interviews	Morelos	22 older adults
Cebolla Badie 2013	Argentina	Use and meaning of pharmaceuticals in indigenous communities	Interviews	Rural and peri-urban areas of Salta, Formosa and Misiones	Indigenous community resident (number not specified)
Salazar Villamarín 2016	Colombia	Maternal expectations for treatment of acute respiratory infections in children	Ethnographic, interviews	Indigenous area of south-west Colombia	50 indigenous mothers seeking medical attention for their children at a village hospital
Aponte-Gonzalez 2019	Colombia	Perceptions regarding the use of antibiotics without prescription	Focus group	Public schools (low-medium socioeconomic levels) and private companies (medium-high) in Bogotá	21 people in 4 focus groups
WHO Eastern Mediterranean Region					
Kandeel 2014	Egypt	Knowledge, attitudes and practices of patients regarding antibiotic use for acute respiratory infections, and to identify cultural and societal determinants contributing to the use of antibiotics	Focus groups	Village of Nazlet El Fellaheen, Minya district	20 focus groups with 160 residents
Joseph 2016	Pakistan	Layperson awareness and perceptions of antimicrobial resistance	Interviews	Thirty-one settlements in central Karachi, a region with a high prevalence of diarrhoeal disease and Antimicrobial Resistance	40 residents
Atif 2019	Pakistan	Public knowledge, attitudes and practices regarding antibiotic use	Interviews	Two pharmacies in Bahawalpur, Punjab	16 interviews with survey respondents
Arabiat 2021	Jordan	Family beliefs about the causes of illness and how best to manage illness	Family group interviews	Urban and metropolitan areas	25 Arab families
Burtscher 2021	Afghanistan	Knowledge, perceptions and attitudes toward antibiotics	Interviews, group discussions	Outpatient departments of the Ahmad Shah Baba District Hospital in Kabul	21 patients/caretakers
Khan 2022	Pakistan	Knowledge, attitude and practices of antibiotic consumption and resistance	Interviews	Community pharmacies in post-conflict areas of (conflicted zones)	20 residents
WHO European Region					
Kaee 2017	Albania	Antibiotic knowledge, attitudes and behaviours	Interviews	No information provided	4 patients with prescription, 4 patients without prescription
Ostergaard 2018	Kyrgyzstan	Perceptions and practices among caregivers for recurrent Lower Respiratory Tract illnesses in children under 5 years	Interviews	Health clinics, one in the lowlands (Chui province) close to the capital Bishkek, and one in the highlands (Naryn province), far from the capital	13 caregivers including 11 mothers and 2 grandmothers

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Author, year	Location	Research focus	Qualitative methods	Setting/context	Population
Jakupi 2019	Kosovo	Attitudes, experiences and knowledge of users towards antibiotics	Interviews	Capital city	4 patients with prescription, 4 patients without prescription
Kaee 2020	Armenia, Georgia, Kazakhstan, Moldova, Russia and Tajikistan	Antibiotic knowledge, attitudes and behaviours and how these may be influenced by the national healthcare systems across six countries	Interviews	Hospitals, pharmacies	40 patients with or without Antibiotics prescription
Westerling 2020	Turkey, Germany, Netherlands and Sweden	Views of Turkish citizens and Turkish migrants in Germany, the Netherlands and Sweden of policies related to rational antibiotic use	Focus groups, interviews	Clinical and community settings	3 focus group of 37 people in Turkey
Canterero-Arevalo 2022	Russia	Antibiotic practices, knowledge and attitudes	Interviews	North-west Russia	55 adults who had used Antibiotics in last 3 months

studies met less than four of the criteria (low-quality) (see Table S1). In terms of privileging subjective meaning and theoretical and conceptual adequacy, only the high-quality studies investigated subjective meanings in depth and interpreted data in an inductive way. Many studies described participants' views and practices and evaluated them from a biomedical standpoint. Most studies compared and triangulated findings between sources. Only the high-quality studies and some of the medium-quality studies gave full description of the context and researcher reflexivity.

Translation of second-order constructs

We developed 16 translated constructs, which were combined into six overarching line-of-argument themes: experience of accessing antibiotics in the community and health services; judging risks, costs and benefits when deciding to seek antibiotics; influence of past experience of treatment and recovery; collective experience influences antibiotic use; self-medication with antibiotics is routine practice; and antibiotics as powerful medicines for symptoms of infections.

Experience of accessing antibiotics in the community and from health services

Participants in the majority of studies reported that over-the-counter (OTC) antibiotics were readily available from multiple local retail outlets, which included retail pharmacies, groceries, medicine shops and medicine peddlers, from where it was easy and convenient to access antibiotics.^{23,25,27,46–77} The types of retail outlet supplying antibiotics OTC varied between countries, with market stalls and street peddlers mentioned in African studies^{67,78–81} but not elsewhere, and retail pharmacies, medicine shops or shops that sold medicines alongside other goods found in all regions. The main reasons for purchasing antibiotics directly from retail outlets (instead of via a clinical consultation) was to reduce both the direct costs of treatment (cost of medical consultation and travel to clinic) and the indirect costs of lost income, which was particularly important for those with low-paid or insecure jobs.^{27,47–49,53,54,56,58,59,61,67,68,70,76–78,82–90} Retail pharmacies and other medicine sellers would allow the purchase of antibiotics in fractions of a course, or daily, or sometimes on credit, which made them more accessible to those on very low incomes.^{23,47,57,63,66,91,92}

'For fever, cough, and dysentery I go to a local drug [medicine] shop for seeking healthcare. The treatment cost is low in drug shop and it is nearby. Hospitals are far away from my area. If we get better from drug shop's treatment, then we do not visit any doctor.' (Narayanganj, Bangladesh)⁵⁸

'I myself know that I should go to the doctor when I'm ill but going to the doctor means trading time for work... It's a dilemma. (...) If I go to the doctor this morning, I won't have money for food this morning, meaning that my children won't have anything to eat (...) I have to find the quickest solution to the problem (...) I choose to go to the pharmacy to buy Western medicines because it's quicker...' (Ca Mau, Vietnam)⁴⁹

'Sometimes you are sick, and you don't have money to take you to the [clinic] and thus decide to just buy [antibiotics] thinking that you will be healed.' (Makueni, Kenya)⁹³