

Beyond the Hospital: Infection Prevention, Community Behaviour, and the One Health Approach

Samuel Oladele Mudi¹

¹Federal Medical Centre, Jalingo Taraba State.

ARTICLE INFORMATION	ABSTRACT
Article history: Published: October 2026 Keywords: Infection Prevention and Control One Health Community Behaviour Knowledge–Attitude–Practice Antimicrobial Resistance Zoonoses Hand Hygiene Behaviour Change Theory Cross-Country Analysis	Infection control is largely explored in healthcare facilities. However, pathogens, antibiotic resistance genes, and risky behaviors emerge not only in hospitals but also in houses, farms, and markets. The data related to infection control practices and one-health approach have been explored for 2024-2026 in community samples, the behavioral theories have been discussed, and quantification of the KAP gap has been performed. PRISMA-like review of 30 papers in six regions has been carried out, including quantification of the results obtained without the use of the data collection. As was mentioned before, only 28.3% (63/223) of interventions of hand hygiene practices are theory-based, and the difference in the effectiveness of these interventions as compared to others is zero (82.5% versus 81.9%, $p=1.00$). The KAP gap varies between 4 and 52 percentage points in five community samples from five countries (total $N=2963$), even though the overall KAP gap is rather unstable (from -0.1 to 23.9). Attitude has greater relationship with the behavior among animal health professionals in Ethiopia ($aOR=1.50$) as compared to householder ($aOR=1.26$; $p=.049$). Only 23.4% of interventions for AMR are sector-based in Nepal.

1. Introduction

The traditional understanding of the role of infection prevention and control (IPC) in history has been associated only with hospitals even though the distinction between hospital and community is quite vague. According to the analysis of transmission models, it was found out that less than 31% of all 29 articles included the combination of LTCF and community without regard to the health care facility due to the reason that the community is the key source for introducing resistant pathogens to the acute-care settings (Lin et al., 2025). This way, practices in the community, including hand hygiene, antibiotic usage, food handling, and exposure to animals, become an important factor determining the infection process that has not been enough explored in the theory. More than 60% of infections and 75% of emerging infections are zoonotic, thus rural population close to domestic animals and wildlife is highly vulnerable to these infections (Bodhare et al., 2025; Paudel et al., 2026).

The One Health concept, which focuses on considering the health of humans, animals, and environment as one single thing, could be taken as one of the organizational theories but the application of this theory in the community level is very poor since no practical way to do that exists (Mohanty, 2025; Bidaisee, 2025). However, there have been many behavioral researches mostly focusing on diseases (zoonotic, antimicrobial resistance, hand washing) and countries.

Problem Statement. There has not been any literature review done with the sole purpose of addressing the following problems with regard to the recent cross-country evidence: (i) Behaviors' theory for infection control interventions in communities, (ii) Knowledge to action gap in various countries, and (iii) Application of the One Health concept in such interventions.

1.1 Objectives and research questions.

- RQ1 What is the profile of the evidence on community IPC and One Health for 2024-2026 in terms of geography, timeframe, and design?
- RQ2 Which behavioral theories are used in the papers, and is the use of theories correlated with the effectiveness of interventions?
- RQ3 What is the size of the KAP gap?
- RQ4 What are the barriers to the KAP gap, and how well are the multi-sectoral dimensions covered?

1.2 Contribution

- Create a KAP gap model with theories under review
- Perform new and replicable quantitative analysis of the collected evidence, including a harmonized KAP database across countries
- Reveal the fragility of the KAP gap narratives
- Provide evidence-based recommendations for policy makers. The evidence will be gathered from the papers published in 2024-2026

2. Literature Review

2.1 The hospital–community interface

Where the IPC models are concerned, there is no single mention made of the community variable, as is evident from the scoping review undertaken by Lin et al. (2025), wherein most of the literature available on the topic of screening and contact isolation process relates to long-term care facilities without paying any attention whatsoever to other members of the community. When it comes to

the issue of long-term care and the relevant scientific literature available, it is noteworthy that non-pharmacological intervention leads to a reduction in the cases of viral respiratory infection, hospitalization, and mortality rates; however, it is difficult to identify which intervention proved to be effective (Community Preventive Services Task Force [CPSTF], 2026).

2.2 Community hygiene behaviour and the role of theory

The latest evidence is related to hand hygiene. In the systematic review of 223 community-based studies that included 247,398 participants, 82% of the interventions were found to be effective, however, only 28% of the studies incorporated the theory in the design of the intervention; additionally, physical environment received very little attention and due to the heterogeneity, meta-analysis was not possible (Prasad et al., 2025). Barriers and enablers for changing health behavior in the community setting have been explored by using COM-B model and Theoretical Domains Framework (Caruso et al., 2025). Hand hygiene in the community setting has global guidelines by WHO and UNICEF (2025). There are structural linkages between deficiencies in WASH in Africa and water-borne diseases and neglected tropical diseases (Okesanya et al., 2024).

2.3 Zoonoses, antimicrobial resistance and One Health practice

From the current surveys conducted in the community, the inadequacy in practice has been noted in regard to knowledge adequacy. Adequate levels of knowledge have been observed in relation to high levels in Ethiopia for the community and animal health professionals with poor practices of antimicrobial use (Assefa et al., 2026); high levels of knowledge and attitudes and moderate preventive practices have been found in Vietnam for wildlife farmers with poor risk perceptions (Nguyen et al., 2025); good knowledge and poor practice and environmental vulnerability has been seen in rural India (Bodhare et al., 2025); and good awareness levels on leishmaniasis but no knowledge about vectors and reservoirs has been found in Kenya (Maingi et al., 2026). According to the narrative review, MDR infections are associated with interactions between humans, animals, and environment (Ohia et al., 2025; Ali, 2026), particularly environment aspect which remains unexplored (Abia, 2025). Threats such as H5N1 among cattle, poultry, and human population need cross-sectoral surveillance (Jahid & Nolting, 2025; PHAC, 2025).

2.4 Governance, structure and gaps

Based on the literature reviewed on the regional level, one of the major barriers in implementing the One Health approach in Latin America and Caribbean was poor governance and lack of clear legislation, together with lack of knowledge about the environment sector (Molina-Flores et al., 2025). Based on the Public Health Association of Australia (PHAA, 2025) and One Health Action Commission (Zhang et al., 2024), another need is the need for contextual intervention in this field. The issues are: lack of theoretical background for implementation of One Health approach; lack of knowledge-to-practice gap assessment without comparison of knowledge-to-practice gaps in different countries; and lack of assessment of implementation of One Health approach altogether. This research paper intends to discuss all three.

3. Theoretical Framework: A Systematic Review of Theories

These theories have been developed by considering the sources provided (Prasad et al., 2025; Caruso et al., 2025; Treskova et al., 2026; Mohanty, 2025), and they have been classified on the basis of their levels (See Table 1). The KAP theory has been taken into account as the proximal theory in the process of integration, and the psychological and sociological theories (HBM, TPB, RANAS) are considered to be determinants of attitude and intention, whereas ecological and capability theories (COM-B, Evo-Eco, IBM-WASH) are determinants of opportunities and resources.

Table 1 Theoretical lenses used in the review and their analytic role

Theory / model	Core proposition	Level of action	Source
KAP model	Knowledge shapes attitude, which shapes practice	Individual	Assefa et al. (2026); Nguyen et al. (2025); Bodhare et al. (2025)
Health Belief Model (HBM)	Perceived susceptibility, severity, benefits and barriers drive action	Individual / psychosocial	Prasad et al. (2025); Treskova et al. (2026)
Theory of Planned Behaviour (TPB)	Attitude, norms and perceived control form intention	Individual / social	Prasad et al. (2025)
RANAS	Risks, attitudes, norms, abilities, self-regulation	Individual / social	Prasad et al. (2025)
COM-B / Behaviour Change Wheel	Capability, opportunity and motivation generate behaviour	Individual + environment	Caruso et al. (2025); Prasad et al. (2025)
Evo-Eco / IBM-WASH	Evolved and contextual drivers incl. physical environment	Environment / household	Prasad et al. (2025)
One Health governance	Integrated human–animal–environment action and coordination	System / community	Mohanty (2025); Molina-Flores et al. (2025);

4. Methodology

4.1 Design

This study entailed systematic reviews and analyses of findings in line with PRISMA guidelines. The cross-national approach was employed, implying that every study conducted in communities is grouped according to countries, and the comparison has been done between Ethiopia, Kenya, Nepal, India, Thailand, Vietnam, and Serbia. No primary data were gathered, and all the findings below were attained using the information from the sources.

4.2 Corpus, eligibility and coding

Totally, 30 appropriate publications accessible in the public domain were retrieved through purposeful searches from PubMed/PMC, Europe PMC, DOAJ, CORE, Semantic Scholar, and publishers' websites, which served as the source of collecting records to be included based on the next four criteria: (1) Topic relevance (infection prevention in the community, zoonosis, antimicrobial resistance, and One Health), (2) Publication date in 2024, 2025, or 2026, (3) Open access, and (4) Origin region. All the aforementioned records were coded according to the origin region, year, and type of evidence (Appendix A1). The texts of 27 publications have been obtained, whereas three records (WHO and UNICEF guideline on community hand hygiene, French national report on One Health antibiotic resistance, and H5N1 workshop of U.S. National Academies) were selected only by their titles providing just the background without data.

4.3 Data extraction and harmonisation

For each survey of community K, A, and P, important insights were presented and analyzed numerically in figures from 0 to 100 (Appendix A2). The data from the research study was reported in either mean (Ethiopia, Vietnam, Kenya) or as a percentage of those who belong to a “good” classification (India, Thailand). Both of these are considered sensitive and need sensitivity analysis. The gap between K and P is $K - P$ (percentage points) and the translation ratio is P/K . The number of effective interventions using the theory is derived from percentages and the number of respondents (Prasad et al., 2025).

4.4 Statistical analysis

Proportions were calculated with Wilson confidence intervals at 95% confidence level. The comparisons of theory-based and theory-free interventions were conducted with the help of Fisher's exact test and Newcombe-Wilson confidence interval for risk difference. Heterogeneity among effect sizes of six theoretical interventions was evaluated using 20,000 permutations tests based on chi-square statistics. Scores of international KAP surveys are reported as arithmetic means and the weighted means (leave-one-out sensitivity analysis); correlations are calculated as Pearson and Spearman correlation; preliminary results. Two adjusted Ethiopian ORs (attitude $\rightarrow$ practice) were statistically compared on log-odds scale via z-test with inverse variance weights. All the statistical calculations were conducted using Python 3 programming language (NumPy, SciPy, pandas); a random seed (2026) was fixed in all the computations; the source data and analysis logic are explained in the Appendix.

4.5 Quality and limitations of the design

The quality of the design has been assessed based on the design classification without applying any instrument. Various sources have used different questionnaire, sample frames and survey period (2020-2026), thus KAP scores should be harmonized prior to analysis. Seven community surveys represent a small sample size of observations.

5. Results and Analysis

5.1 Corpus profile (RQ1)

Among the total number of 30 studies reviewed, 12 (40.0%) articles were global studies, 6 (20.0%) of them from Asia, 4 (13.3%) from Africa, 3 (10.0%) from Europe, 3 (10.0%) from North America, and 1 each (3.3%) from Latin America and Oceania (Table 2; Figure 1a). The year 2025 had the largest number of publications (17, 56.7%), while years 2024 and 2026 each had 5 and 8 articles published, respectively (Figure 1b). Data from community surveys ($n = 8$) were predominantly from Africa (3), Asia (4), and Europe (1), but none of the data from Latin America, North America, or Oceania, as they were mostly policy and/or narrative.

Table 2 Corpus profile by region and evidence class ($n = 30$ records, 2024–2026)

Region	Primary survey	Systematic /scoping	Narrative review	Policy /guidance	Editorial /protocol	Total	% of corpus
Global	0	3	3	2	4	12	40.0
Asia	4	1	0	0	1	6	20.0
Africa	3	0	1	0	0	4	13.3
Europe	1	0	0	1	1	3	10.0
North America	0	0	1	2	0	3	10.0
Latin America	0	0	0	1	0	1	3.3
Oceania	0	0	0	1	0	1	3.3
Total	8	4	5	7	6	30	100.0

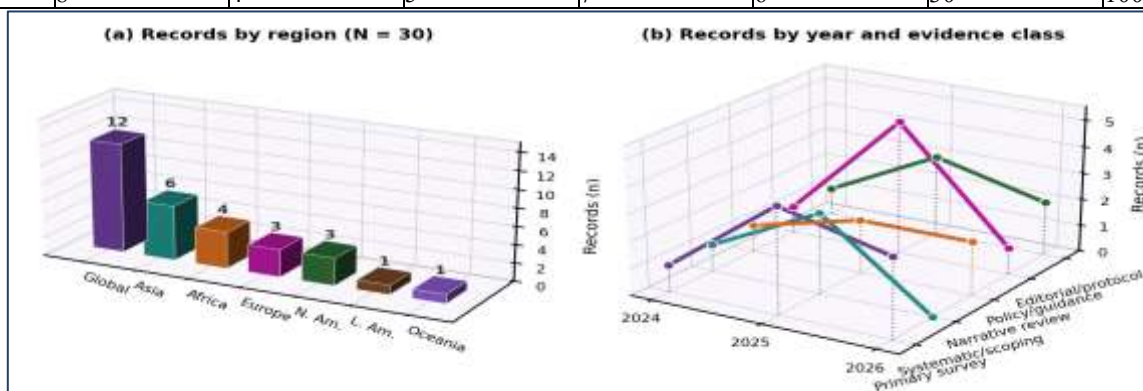


Figure 1 Corpus profile: (a) records by region; (b) records by year and evidence class

5.2 Theory use and reported effectiveness (RQ2)

Of the 223 community hand washing intervention studies analyzed, 63 (28.3%, 95% CI 22.7 to 34.5%) incorporated theories/models into the design of the intervention. Intervention using theories turned out to be effective in 82.5% (52/63; 95% CI 71.4 to 90.0), while in case of the intervention without theories the percentage of the effectiveness was 81.9% (131/160; 75.2 to 87.1), and the risk difference is +0.7% (95% CI -11.6 to +10.7; Fisher $p = 1.00$; OR = 1.05). Regarding the mean effectiveness of six particular theories, the mean effectiveness was 69.4% (39/49; 66.4 to 88.5) ranging from 71.4% (TPB, BCD/Evo-Eco) to 90.9% (HBM) and no heterogeneity was found (permutation $p = .92$; see Table 3 and Figure 2). The confidence interval for HBM (62.3 to 98.4) contains all other confidence intervals, taking into account the small number of participants, there is no evidence of the efficiency of one of the theories; still, theories are being used rarely and “reported effectiveness” does not distinguish the theories.

Table 3 Reported effectiveness of community hand-hygiene interventions by theory (re-analysis of Prasad et al., 2025 data)

Theory / model	Studies (n)	Reported effective (k)	% effective	95% Wilson CI	Share of theory-informed (%)
Theory of Planned Behaviour	14	10	71.4	45.4–88.3	22.2
Health Belief Model	11	10	90.9	62.3–98.4	17.5
Behaviour Centred Design / Evo-Eco	7	5	71.4	35.9–91.8	11.1
RANAS	6	5	83.3	43.6–97.0	9.5
COM-B	6	5	83.3	43.6–97.0	9.5
IBM-WASH	5	4	80.0	37.6–96.4	7.9
Six named theories, pooled	49	39	79.6	66.4–88.5	77.8
All theory-informed	63	52	82.5	71.4–90.0	100.0
No theory reported	160	131	81.9	75.2–87.1	–

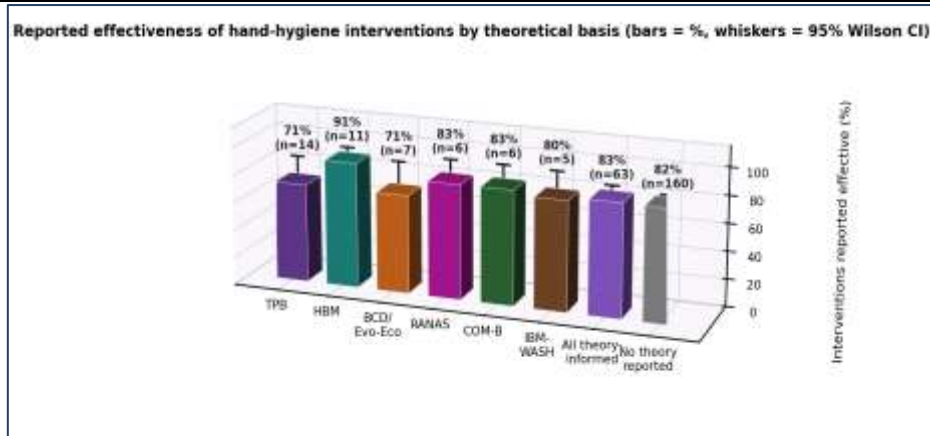


Figure 2 Reported effectiveness by theoretical basis

5.3 Cross-country knowledge–attitude–practice patterns (RQ3)

The six community samples from five countries ($N = 2,963$) yielded information about K and P as well as A information from five samples (Table 4). The sample means are $K = 74.1$, $A = 64.6$ and $P = 67.0$, translating to a translation ratio of 0.90 at sample-level. The situation is slightly different at sample-level since practice was 52.5 and 39.0 points below knowledge in rural India and animal health professionals in Ethiopia, 30.7 points below in Vietnam, 4.0 points below in Ethiopia, and 9.0 points below in Kenya; however practice was above knowledge by 17.1 points in Bangkok, where 92.3% people had high practice in comparison to 75.2% having good knowledge (Figures 3–4). Attitude was ahead of practice in Ethiopia and Vietnam (+17.0 to +35.6 points), but below it in India and Kenya (-2.7 and -1.7).

Table 4 Harmonised cross-country KAP dataset and derived gap indices

Country	Sample (source)	n	K	A	P	K – P	P/K	Metric type	Source
Ethiopia	Households (Addis Ababa, Oromia, Afar)	750	62.0	75.0	58.0	4.0	0.94	Mean score	Assefa et al. (2026)
Ethiopia	Animal-health professionals	251	88.0	79.0	49.0	39.0	0.56	Mean score	Assefa et al. (2026)
Vietnam	Wildlife farmers (Lao Cai, Dong Nai)	210	77.7	82.6	47.0	30.7	0.60	Mean score	Nguyen et al. (2025)
India	Rural adults (Madurai, Tamil Nadu)	408	78.7	23.5	26.2	52.5	0.33	% good	Bodhare et al. (2025)
Kenya	Residents (Baringo South)	135	86.7	76.0	77.7	9.0	0.90	Mean score	Maingi et al. (2026)
Thailand	Residents (Bangkok)	1,209	75.2	n/r	92.3	-17.1	1.23	% good/high	Kanjanakarn et al. (2025)
Weighted mean		2,963	74.1	64.6	67.0	7.1	0.90		
Unweighted mean			78.1	67.2	58.4	19.7			

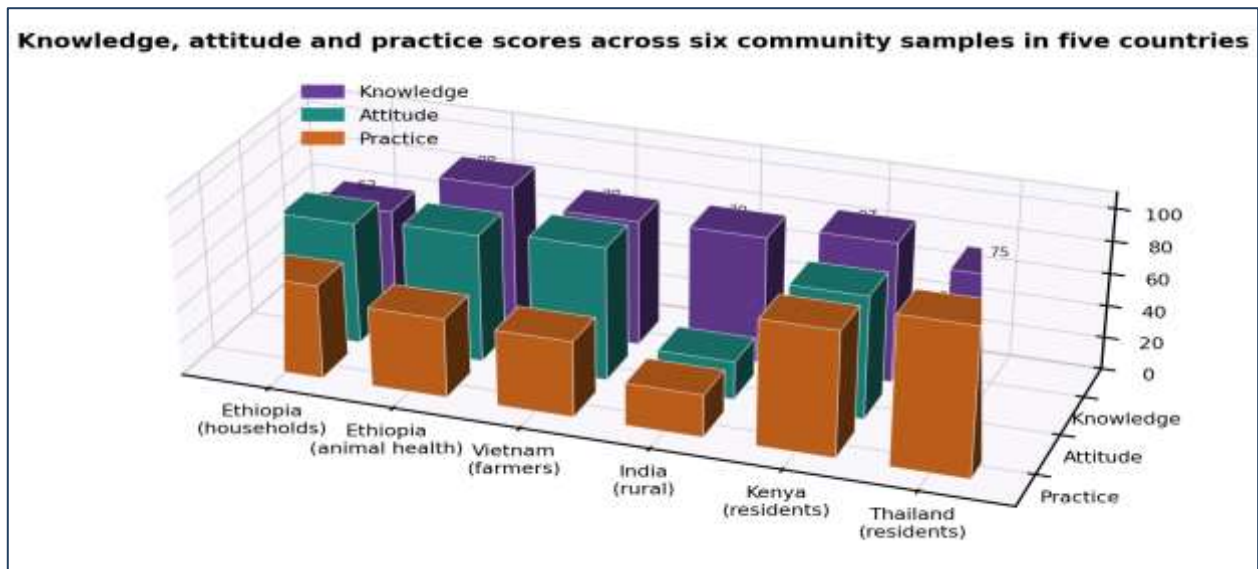


Figure 3 Knowledge, attitude and practice scores by country

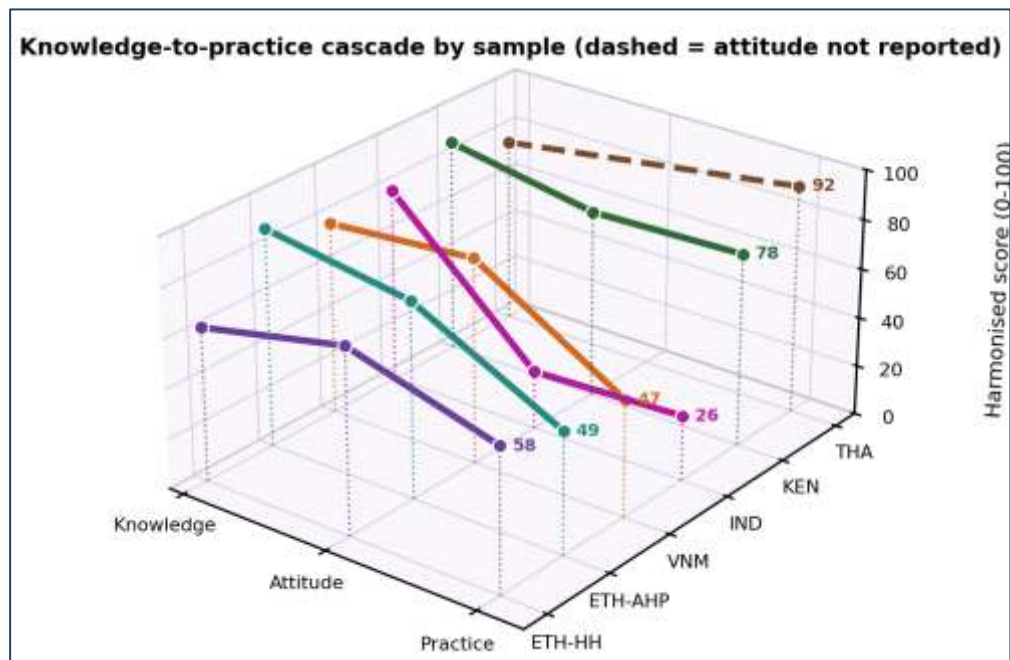


Figure 4 Knowledge-to-practice cascade (3-D line graph). ETH-HH = Ethiopian households; ETH-AHP = Ethiopian animal-health professionals; VNM = Vietnam; IND = India; KEN = Kenya; THA = Thailand.

5.4 Robustness of the pooled gap

However, the size of the difference between knowledge and practice is not a significant result. The removal of the Thailand sample increases the weighted average gap score by 7.1 points to 23.9 points, while the removal of the India sample reduces the weighted average gap score by 7.2 points to -0.1 point (see Table 5). With the use of four sample averages for the gap score calculation, we receive the weighted average score of 15.2 points. There is an extremely weak correlation between knowledge and practice (Pearson's $r = -.03$, $p = .95$; Spearman's $\rho = -.26$, $p = .62$; $n = 6$), whereas there is a positive but statistically insignificant correlation between attitude and practice ($r = .70$, $p = .19$; $\rho = .10$, $p = .87$; $n = 5$).

Table 5 Leave-one-out sensitivity of the sample-weighted knowledge–practice gap (percentage points)

Sample omitted	Weighted gap (K - P)	Change from full-set gap (7.1)
None (all six samples)	7.1	–
Ethiopia – households	8.2	+1.1
Ethiopia – animal-health professionals	4.2	–2.9
Vietnam – wildlife farmers	5.3	–1.8
India – rural adults	–0.1	–7.2
Kenya – residents	7.1	–0.1
Thailand – residents	23.9	+16.7
Mean-score metrics only (4 samples)	15.2	+8.0

5.5 Determinants, One Health integration and disease-specific knowledge

Attitude became the second predictor shown to be significantly associated with change in antimicrobial practice in Ethiopia (Table 6). The relationship was found to be stronger for the animal health professionals (aOR = 1.50, 95% CI 1.28-1.75) than for the households (aOR = 1.26, 1.17-1.36); the former showed marginally significant relationship ($z = 1.97$, $p = .049$) along with high heterogeneity ($Q = 3.88$, $I^2 = 74\%$). The pooled inverse-variance aOR for attitude was 1.30 (1.22-1.39). Only the positive attitude-practice of AMR correlation was observed in the professional group but not in the household group (Assefa et al., 2026). Furthermore, increase in knowledge by one point led to an increase in the odds of desirable attitude by 59% (OR = 1.59; $p = .004$) in Serbia, whereas the strongest correlations in Bangkok included preventive behavior and knowledge ($\beta = 0.295$), gender (0.126), and age (0.099; Kanjanakarn et al., 2025). Barriers to the prevention of antibiotic resistance in the qualitative studies are described below; the structural barriers include financial limitations, availability of antibiotics without prescription, inadequate diagnostics, lack of enforcement and client pressure (Ethiopia), risk acceptance and distrust in the government (Vietnam), poor housing conditions, exposure to open sewage and stray animals (India; Appendix A3).

Table 6 Determinant estimates reported by country studies and derived comparisons

Country / sample	Association	Estimate	95% CI / p	Source
Ethiopia – households	Attitude → practice	aOR 1.26	1.17–1.36	Assefa et al. (2026)
Ethiopia – animal-health prof.	Attitude → practice	aOR 1.50	1.28–1.75	Assefa et al. (2026)
Derived: difference, prof. vs households	Effect modification	$z = 1.97$	$p = .049$; $Q = 3.88$; $I^2 = 74\%$	This study
Derived: inverse-variance pooled	Attitude → practice	aOR 1.30	1.22–1.39	This study
Serbia – general population	Knowledge → desirable attitude	OR 1.59	$p = .004$	Belamarić et al. (2025)
Thailand – Bangkok	Knowledge → preventive behaviour	$\beta = 0.295$	$p < .05$	Kanjanakarn et al. (2025)

From the 47 community-related articles analyzed in the Nepal AMR scoping review, 31 (66.0%; 95% CI 51.7-77.8%) addressed human health topics, five (10.6%; 4.6-22.6%) addressed animal health topics, none (0%; 0-7.6%) addressed environment topics, and eleven (23.4%; 13.6-37.2%) addressed all three sectors (Parajuli et al., 2024; Figure 5a). In Nepal, four interventions in the community sector led to improvement in knowledge and practices. From the literature on hospital-community interaction modeling, from the 29 publications analyzed, 13 dealt with community only, nine in both sectors, and eight in LTC only (counted as 30; Lin et al., 2025).

In the Chiro, Ethiopia population ($n=350$), knowledge level regarding the respective diseases was: 82.9% (bovine tuberculosis; 95% CI 78.6-86.4%), 80.0% (rabies; 75.5-83.9%), 45.1% (anthrax; 40.0-50.4%), and 24.3% (brucellosis; 20.1-29.0%). The difference between the best-known and worst-known disease was 58.6 percentage points (mean 58.1%; Abraham et al., 2024; Figure 5b). Rabies and bird flu were common diseases in Nepal, but brucellosis, echinococcosis and neurocysticercosis were less known (Paudel et al., 2026).

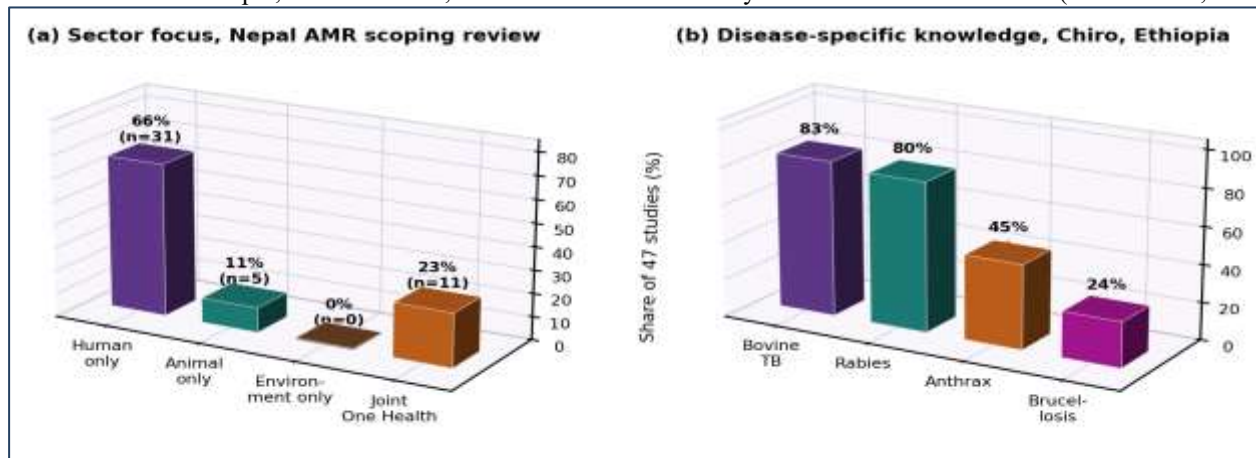


Figure 5 (a) Sector focus of community AMR studies in Nepal (Parajuli et al., 2024); (b) knowledge of four zoonoses in Chiro, Ethiopia (Abraham et al., 2024), with 95% Wilson intervals.

6. Discussion

Less than three out of ten cases of community hand hygiene interventions had any theory involvement (Prasad et al., 2025). However, it should be noted from the re-analysis that the effectiveness level is not correlated with the theory presence (82.5% vs. 81.9%). It does not imply that theory is not important in this context. Firstly, due to the inconsistent definition of the term “effectiveness” and, secondly, because the interventions were not directed against any barrier. But the main lesson that should be learned from this study is methodological. One should realize what theory, what barrier and what variable of the outcome will be involved into the intervention like Saan Suk protocol in Thailand based on the Health Belief Model involving village health volunteers (Treskova et al., 2026).

All five samples show the higher level of knowledge than practice. It may be associated with the “beyond information” approach used by the Ethiopian authors (Assefa et al., 2026). However, the city of Bangkok differs from others in terms of the difference between knowledge and practice (-0.1 vs. 23.9). There are several possible explanations for this. Firstly, role of profession

emphasizes knowledge over behavior through structural constraints (cost, diagnostic, client constraints, and non-enforcement) plus peak knowledge. Secondly, risk perception and norms: Vietnamese farmers of wildlife animals have been socialized into taking risks while at the same time being mistrusting of veterinarians (Nguyen et al., 2025). Thirdly, environmental opportunities: rural Indian housewives have faced challenges from humid climate, poor hygiene, open drains, and stray animals (Bodhare et al., 2025), using COM-B in terms of opportunities and limitations in WASH in Africa by Okesanya et al. (2024). Challenges faced in comparisons as a result of variations in measurements in terms of mean score and percentage in the good category make it necessary for KAP instrument development.

In accordance with the information above, 23.4% of AMR research conducted in community settings in Nepal examined sectors in the research process, and there were no environmental ones conducted anywhere else in the world (Abia, 2025) and Latin America (Molina-Flores et al., 2025). Furthermore, in Kenya, veterinarians did not know about canine leishmaniasis, while clinicians could diagnose and treat it (Maingi et al., 2026), and this is another example of sectoral silos, as stated by Mohanty (2025). Geographical distribution is an intriguing aspect, because evidence from Latin America, North America, and Oceania is represented only by policy and narrative papers, but not by any data about community behavior. Lastly, hospital-community relations are underresearched (Lin et al., 2025), and the same behavioral constraints in IPC may also appear in health care facilities (Boullier & Gibas, 2026).

The database is purposeful and relatively small (only three records are missing); harmonized dataset is compiled using headline statistics obtained via various methodologies; fieldwork is conducted within 2020 and 2026, while all papers were written in 2024-2026; relationships established in seven samples were exploratory. Self-reporting bias is driven by social desirability and results in high rates of preventive behavior in Bangkok.

7. Conclusion and Recommendations

Behavior of communities is yet another factor that links all the mentioned entities - hospitals, households, agriculture, and ecosystems, and it has not been appropriately theorized either. It is neither that knowledge leads to actions nor that theories are put into practice or work better, nor that One Health approach is sufficient for five countries. Some recommendations may be provided based on results obtained: (1) Interventions must be designed based on theory and barriers, along with outcomes measured in language (Prasad et al., 2025). (2) Information-based actions have to be replaced by risk perception, social norms, costs, diagnostics, and enforcement (Assefa et al., 2026; Nguyen et al., 2025). (3) Water, soap, and housing/drainage infrastructure must be established before communication takes place (Prasad et al., 2025; Okesanya et al., 2024) (4) Develop collaboration tools for surveillance and community engagement between humans, animals, and environment using the role of veterinarians and pharmacists (Mohanty, 2025; Belamarić et al., 2025; Maingi et al., 2026). (5) Perform evidence-based KAP studies and report means and proportions to allow meta-analysis. (6) Perform behavioral studies in deprived communities (Latin America, North America, and Oceania) and Saan Suk style studies (Treskova et al., 2026). (7) Perform modeling studies on the interaction between hospitals and communities (Lin et al., 2025; CPSTF, 2026).

References

- [1] Abia, A. L. K. (2025). Antimicrobial resistance and environmental health. *Antibiotics*, 14(2), Article 113. <https://doi.org/10.3390/antibiotics14020113>
- [2] Abraham, A., Bekele, B., Tahir, M., Ahmed, S., & Ahmedin, L. (2024). Associations of community knowledge, perceptions, and practices related to zoonotic disease with sociodemographic factors in and around Chiro Town, Eastern Ethiopia: A cross-sectional study. *One Health Outlook*, 6, Article 10. <https://doi.org/10.1186/s42522-024-00072-3>
- [3] Ali, N. (2026). Antimicrobial resistance at the human–animal–environment interface: A One Health perspective on drivers, transmission, and public health responses. *Health Science Reports*, 9, Article e72964. <https://doi.org/10.1002/hsr2.72964>
- [4] Assefa, G. M., Wgebriel, A., Tarekegn, M., Gebreselassie, G., Shifarrow, S., Solomon, A., Mihret, M., Girmay, A. H., Belete, G. A., Abrie, W., Majiwa, F., & Negash, K. (2026). Determinants of antimicrobial resistance practices in Ethiopia: A One Health mixed-methods study. *One Health*, 22, Article 101461. <https://doi.org/10.1016/j.onehlt.2026.101461>
- [5] Belamarić, G., Vuković, D., Bukumirić, Z., Sandić Spaho, R., & Marković, G. (2025). Public awareness and perceptions of antibiotic use in human and veterinary medicine in Serbia. *Antibiotics*, 14(5), Article 523. <https://doi.org/10.3390/antibiotics14050523>
- [6] Bidaisee, S. (2025). One Health: From promise to practice—Integrating evidence, equity, and enduring systems [Editorial]. *Journal of Multidisciplinary Research in Healthcare*, 11(2), 91–92.
- [7] Bodhare, T., Bele, S., Sheela Kumari, S., Ramji, M., Shalini, V., Rajh, B., & Hariharan, V. (2025). Assessing socioeconomic and environmental vulnerability and awareness of zoonotic diseases from a One Health perspective: A cross-sectional study in a rural population in Tamil Nadu, India. *Cureus*, 17(3), Article e81198. <https://doi.org/10.7759/cureus.81198>
- [8] Boullier, I. V., & Gibas, K. M. (2026). Enhancing infection prevention and control in behavioral health settings: Barriers, facilitators, and tailored strategies. *Antimicrobial Stewardship & Healthcare Epidemiology*, 6, Article e36. <https://doi.org/10.1017/ash.2025.10290>
- [9] Caruso, B. A., Snyder, J. S., O'Brien, L. A., et al. (2025). Behavioural factors influencing hand hygiene practices across domestic, institutional and public community settings: A systematic review and qualitative meta-synthesis. *BMJ Global Health*, 10, Article e018927. <https://doi.org/10.1136/bmjgh-2025-018927>
- [10] Community Preventive Services Task Force. (2026). *Public health emergency preparedness and response: Non-pharmaceutical interventions to reduce transmission of viral respiratory infections in long-term care communities (updated 2026): Finding and rationale statement*. Centers for Disease Control and Prevention. <https://doi.org/10.15620/cdc/168657>
- [11] Jahid, M. J., & Nolting, J. M. (2025). Dynamics of a panzootic: Genomic insights, host range, and epidemiology of the highly pathogenic avian influenza A(H5N1) clade 2.3.4.4b in the United States. *Viruses*, 17(3), Article 312. <https://doi.org/10.3390/v17030312>

- [12] Kanjanakarn, W., Phetmune, N., Vorathepputipong, A., Limjumroonrat, R., Chalodhorn, P., Kitkanjanakul, P., Haripottawekul, N., Tengamnuay, P., Riangaem, K., Duangjun, W., Anantachoke, P., Sivilaikul, P., & Mungkalarungsi, S. (2025). Awareness, knowledge, and preventive practices of zoonotic diseases among Bangkok residents aged 15–60 years. *Journal of Public Health Research, Ubon Ratchathani Rajabhat University*, 14(3).
- [13] Lin, G., et al. (2025). Community transmission of hospital-associated pathogens: A systematic scoping review of modeling studies of the hospital–community interface. *One Health*, 20, Article 100951. <https://doi.org/10.1016/j.onehlt.2024.100951>
- [14] Maingi, H. N., Ndichu, M., Chege, J. N., Karanja, D. N., Sentamu, D. N., Lokonon, B. E., Matoke-Muhia, D., Ngowi, H., & Bonfoh, B. (2026). Community drivers of *Leishmania* infection, transmission and control in Baringo County, Kenya: Implications for integrated One Health intervention strategies. *Tropical Medicine and Infectious Disease*, 11(7), Article 197. <https://doi.org/10.3390/tropicalmed11070197>
- [15] Mohanty, N. (2025). A strategic action model for understanding, designing, and achieving community-level One Health implementation. *Medical Research Archives*, 13(10). <https://doi.org/10.18103/mra.v13i10.7040>
- [16] Molina-Flores, B., Vigilato, M. A. N., Rocha, F., Cossivi, O., Corrales, M., Vásquez Niño, G. A., Faccini-Martínez, Á. A., Chiba de Castro, W. A., Biondo, A. W., & Cediel-Becerra, N. (2025). Assessment of One Health initiatives from a veterinary public health approach in Latin America and the Caribbean. *Tropical Medicine and Infectious Disease*, 10(11), Article 315. <https://doi.org/10.3390/tropicalmed10110315>
- [17] Nguyen, H. T. T., Lindahl, J. F., Lâm, S., Nguyen-Viet, H., Dang-Xuan, S., Unger, F., Ling, J., Lundkvist, Å., Lee, H. S., & Bett, B. (2025). Knowledge, attitudes, and practices toward zoonotic disease transmission among wildlife farmers in Vietnam. *One Health Outlook*, 7, Article 52. <https://doi.org/10.1186/s42522-025-00179-z>
- [18] Ohia, C. M. D., Falodun, O. I., Adebudo, L. I., & Bakarey, A. S. (2025). A One Health perspective on multidrug-resistant bacterial infections: Integrated approaches for surveillance, policy and innovation. *Frontiers in Cellular and Infection Microbiology*, 15, Article 1614232. <https://doi.org/10.3389/fcimb.2025.1614232>
- [19] Okesanya, O. J., Eshun, G., Ukoaka, B. M., Manirambona, E., Olabode, O. N., Adesola, R. O., Okon, I. I., Jamil, S., Singh, A., Lucero-Prisco, D. E., III, Ali, H. M., & Chowdhury, A. B. M. A. (2024). Water, sanitation, and hygiene (WASH) practices in Africa: Exploring the effects on public health and sustainable development plans. *Tropical Medicine and Health*, 52, Article 68. <https://doi.org/10.1186/s41182-024-00614-3>
- [20] Parajuli, A., Mitchell, J., King, N., Arjyal, A., Latham, S., King, R., & Baral, S. (2024). Drivers of antimicrobial resistance within the communities of Nepal from One Health perspective: A scoping review. *Frontiers in Public Health*, 12, Article 1384779. <https://doi.org/10.3389/fpubh.2024.1384779>
- [21] Paudel, N., Ojha, K. C., Shah, Y., Pant, D. K., Singh, A. K., & Rimal, S. (2026). Knowledge, attitude, and practices regarding zoonoses among stakeholders in rural Nepal: A cross-sectional study. *Nepalese Journal of Zoology*, 10(1). <https://doi.org/10.3126/njz.v10i1.98857>
- [22] Prasad, S. K., Snyder, J. S., LaFon, E., et al. (2025). Interventions to improve hand hygiene in community settings: A systematic review of theories, barriers and enablers, behaviour change techniques and hand hygiene station design features. *BMJ Global Health*, 10, Article e018928. <https://doi.org/10.1136/bmjgh-2025-018928>
- [23] Public Health Agency of Canada. (2025). *Avian influenza A(H5Nx): Public health knowledge gaps and research needs*. Government of Canada. <https://www.canada.ca/en/public-health/services/emergency-preparedness-response/science-research-priorities/avian-influenza-h5nx-knowledge-gaps-research-needs.html>
- [24] Public Health Association of Australia. (2025). *One Health: Policy position statement*. <https://www.phaa.net.au/common/Uploaded%20files/SIG%20documents/One%20Health/PPS%202025/1301%20-%20OneH%20-%20One%20Health%20-%202025.pdf>
- [25] Treskova, M., Rocha Pompeu, C., Puntumetakul, P., Chaiphonngam, S., Bärnighausen, K., Kachnova, U., et al. (2026). Community-tailored One Health educational intervention to enhance knowledge and practices for zoonotic disease prevention in rural Thailand: A protocol for a prospective cluster randomised controlled trial in Chanthaburi, Thailand (Saan Suk trial). *PLOS ONE*, 21(9), Article e0354989. <https://doi.org/10.1371/journal.pone.0354989>
- [26] World Health Organization & United Nations Children's Fund. (2025). *Guidelines on hand hygiene in community settings*. https://www.pseau.org/outils/ouvrages/unicef_who_guidelines_on_hand_hygiene_in_community_settings_2025.pdf
- [27] Zhang, X.-X., Lederman, Z., Han, L.-F., Schurer, J. M., Xiao, L.-H., Zhang, Z.-B., Chen, Q.-L., Pfeiffer, D., Ward, M. P., Sripa, B., Gabriël, S., Dhama, K., Acharya, K. P., Robertson, L. J., Deem, S. L., Aenishaenslin, C., Dantas-Torres, F., Otranto, D., Grace, D., ... Zhou, X.-N. (2024). Towards an actionable One Health approach. *Infectious Diseases of Poverty*, 13(1), 1–6. <https://doi.org/10.1186/s40249-024-01198-0>