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Knowledge, Attitudes, and Practices (KAP) Regarding Antimicrobial Resistance (AMR) Among Healthcare Personnel in Southeast Asia: A Systematic Review

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Htoo, AT; Thant, MO; Thu, H; Htoo, MT.

Corresponding author:

Hein Thu

heinthu@alumni.harvard.edu

Author Affiliation:

FOC Teleclinic, Myanmar.

ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 November 2025 and was last updated on 25 November 2025.

INTRODUCTION

Review question / Objective What are the knowledge levels, prevailing attitudes, and reported practices (KAP) regarding antimicrobial resistance among healthcare personnel in Southeast Asia (ASEAN) countries? This systematic review aims to understand the knowledge, attitudes, and practices towards antimicrobial resistance (AMR) among healthcare personnel in the southeast Asia (ASEAN) countries.

Rationale Antimicrobial resistance (AMR) is a global health threat, increasing the mortality, morbidity, and healthcare cost. Southeast Asia (ASEAN) is particularly vulnerable to antimicrobial resistance due to varying levels of healthcare infrastructures, varying perceptions of antimicrobial stewardship, and widespread use of unregulated antimicrobial use. Healthcare personnel such as physicians, nurses, and pharmacists play an

essential role in antimicrobial stewardship and antibiotic use. Their perspectives on antimicrobial resistance matter in designing targeted interventions and promoting rational use of antimicrobial use. Though there are individual studies that investigate knowledge, attitude, and practice on AMR stewardship among healthcare personnel, there is a lack of comprehensive synthesis to inform and guide policy makers in the development of the coordinated regional strategies. This review paper will fill this gap by synthesizing existing literature to understand the current state of KAP among healthcare personnel in ASEAN regions.

Condition being studied The condition being studied is the knowledge, attitude, and practice (KAP) among healthcare personnel in relation to antimicrobial resistance (AMR), including bacterial, fungal, viral, and parasitic resistance to antimicrobial medications.

METHODS

Search strategy The search was conducted through PUBMED, CINAHL, EMBASE, and SCOPUS, using tailored queries for each database to account for differences in controlled vocabularies and indexing. In PUBMED, the strategy combined MeSH terms and free-text keywords related to healthcare personnel, KAP concepts, antimicrobial resistance, and ASEAN countries. The CINAHL search followed the same conceptual structure but refined it using CINAHL Subject Headings together with free-text terms. In EMBASE, the search was adjusted using Emtree terms and corresponding free-text keywords to capture comparable constructs across personnel groups, KAP components, AMR terminology, and Southeast Asian settings. The SCOPUS search focused on title, abstract, and keyword fields using basic search and included a broad set of healthcare professionals, KAP, and AMR. Across all databases, the search strings incorporated the full list of ASEAN member states (including newly added member: Timor-leste) to maximize the inclusion of studies relevant to the region. No date restrictions will apply. Only English-language studies will be included.

Participant or population The population of interest includes healthcare workers across all professional groups—such as physicians, nurses, pharmacists, dentists, community health workers, and other clinical staff—regardless of specialty or healthcare setting. However, the emphasis of this review is not on individual-level characteristics or outcomes, but rather on KAP towards AMR among healthcare personnel.

Intervention Not applicable, given its nature as knowledge, attitudes, and practices (KAP) review.

Comparator This review does not have a direct clinical or experimental comparator given its nature as knowledge, attitudes, and practices (KAP) review.

Study designs to be included We have no restriction on study designs for this review.

Eligibility criteria Inclusion Criteria; Population: Conducted among healthcare personnel in any Southeast Asian (ASEAN) country. Focus: Assessed at least one component of knowledge, attitudes, or practices (KAP) related to antimicrobial resistance (AMR) or antimicrobial use. Outcome Measures: Findings directly related to AMR knowledge, AMR attitudes/perceptions, or AMR-related practices among healthcare personnel. Language: Published

in English. Exclusion Criteria; Population: Conducted among patients, general public, students, or veterinary/agricultural workers. Focus: Did not measure or report knowledge, attitudes, perceptions, or practices related to AMR or antimicrobial use. Settings: Conducted outside Southeast Asian (ASEAN) region.

Information sources Studies will be extracted from four main databases: PUBMED, CINAHL, EMBASE, SCOPUS, and references of included studies and relevant reviews.

Main outcome(s)

Knowledge of AMR

Attitudes toward AMR, antibiotic use/responsibility, and stewardship

Practices related to antimicrobial prescribing, dispensing, and infection prevention/control.

Additional outcome(s) None.

Data management Three reviewers will be involved; all reviewers are from health-related fields, including two with background in public health and one with background in health informatics. Study screening and selection were conducted independently by the lead and second reviewers at each stage (title/abstract screening and full-text review). Any disagreements were resolved through discussion, and when consensus could not be reached, the third reviewer will serve as a conflict resolver. All identified studies will be imported into a systematic review platform, Covidence. All screening decisions, and inclusion/exclusion justifications will be managed using Covidence. Data will be extracted using a data extraction sheet.

Quality assessment / Risk of bias analysis

Multiple quality assessment tools (selected based on the nature of each study design) will be used to assess the quality of the included studies. For example, the Joanna Briggs Institute (JBI) tool will be used to critically appraise the studies that use case series study design. However, the results from these assessments will not be used as a reason to exclude the studies, instead they will be used to guide the interpretation of the research findings.

Strategy of data synthesis Given the expected diverse nature of study designs in Knowledge, Attitudes, and Practices (KAP) studies on antimicrobial resistance (AMR), quantitative meta-analysis is not planned. Instead, a narrative synthesis approach will be used to summarize findings from the included studies. Data extracted

from each study will be grouped according to the three KAP domains: Knowledge, Attitudes, and Practices, and synthesized thematically to identify common patterns, gaps, and differences across healthcare personnel in Southeast Asia.

Subgroup analysis None.

Sensitivity analysis None.

Language restriction Studies published in English language will only be considered.

Country(ies) involved The authors are from Myanmar.

Keywords Antimicrobial resistance, Knowledge, Attitudes, Practices, Healthcare personnel, Southeast Asia.

Dissemination plans Findings from this study will be submitted to academic journals for publication, and shared with program stakeholders for policy development related to antimicrobial stewardship.

Contributions of each author

Author 1 - Aung Thura Htoo - Reviewer, draft protocol, search strategy, writing – original draft, data extraction design, formal analysis.

Email: aungthura.hto@student.mahidol.ac.th

Author 2 - Moe Oo Thant - Reviewer, search strategy, writing – original draft, data extraction design, formal analysis.

Email: drmoeoothant1706@gmail.com

Author 3 - Hein Thu - Reviewer, draft protocol, search strategy, writing – original draft, data extraction design.

Email: heinthu@alumni.harvard.edu

Author 4 - Min Thant Htoo - Conceptualization, search strategy, writing – review and editing.

Email: minthanthtoo16798@gmail.com