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Burnout, Associated Factors, and Implications for Prevention among Healthcare Workers in Thailand: Protocol for a Systematic Review and Meta-analysis

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ADMINISTRATIVE INFORMATION

Support - No external or institutional funding was received for conducting this systematic review and meta-analysis.

Review Stage at time of this submission - Completed but not published.

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 30 September 2026 and was last updated on 30 September 2026.

INTRODUCTION

Review question / Objective This systematic review and meta-analysis aimed to synthesize recent evidence on burnout among healthcare workers in Thailand. Specifically, the objectives were: (1) to summarize the prevalence and distribution of burnout and its dimensions, including emotional exhaustion, depersonalization, and personal accomplishment, across healthcare professions and settings; (2) to identify individual, occupational, organizational, and psychosocial factors associated with burnout; and (3) to identify implications for occupational health prevention and workforce support in healthcare settings.

Rationale Burnout is an important occupational health concern among healthcare workers and has implications for workforce well-being, retention, service continuity, and patient care. In Thailand, burnout has been investigated among physicians, nurses, dentists, pharmacists, and other healthcare

workers across diverse healthcare settings. However, the available evidence remains fragmented across professional groups, settings, measurement instruments, burnout definitions, and analytical approaches. Differences in healthcare workforce conditions and organizational structures also limit the direct applicability of international evidence to the Thai healthcare system. A systematic synthesis of recent Thai evidence is therefore needed to characterize the burden of burnout, identify consistently reported individual, occupational, organizational, and psychosocial correlates, and inform context-specific occupational health and workforce-support strategies.

Condition being studied Burnout among healthcare workers. Burnout is an occupational phenomenon related to chronic workplace stress that has not been successfully managed. The review focuses on overall burnout and its dimensions, particularly emotional exhaustion, depersonalization, and reduced or low personal

accomplishment, as measured using established standardized burnout instruments. The review also examines individual, occupational, organizational, and psychosocial factors associated with burnout.

METHODS

Search strategy A systematic search was conducted in four electronic databases: PubMed/MEDLINE, Scopus, APA PsycINFO via EBSCOhost, and Thai Journal Online (ThaiJO). The final database search was conducted on April 30, 2026, with publication date limits from January 1, 2021, to March 1, 2026. Search strategies combined controlled vocabulary, where applicable, and free-text terms covering three main concepts: healthcare workers, burnout, and Thailand. Healthcare-worker terms included healthcare worker, health personnel, physician, doctor, nurse, pharmacist, dentist, and medical staff. Burnout-related terms included burnout, professional burnout, emotional exhaustion, depersonalization, and personal accomplishment. Boolean operators and database-specific search fields were adapted for each platform.

Participant or population Healthcare workers working in healthcare service settings in Thailand, including physicians, nurses, dentists, pharmacists, nursing assistants, and other healthcare personnel meeting the predefined eligibility criteria.

Intervention This review did not evaluate a specific intervention. Exposures of interest included individual, occupational, organizational, and psychosocial factors potentially associated with burnout.

Comparator No specific comparator was required. Where primary studies reported comparisons between participant or occupational groups, these were extracted as reported.

Study designs to be included Original cross-sectional studies examining burnout prevalence, burnout dimensions, and/or factors associated with burnout among healthcare workers in Thailand.

Eligibility criteria Studies were included if they: (1) were conducted in Thailand; (2) involved healthcare workers in healthcare service settings; (3) used a cross-sectional design; (4) reported burnout prevalence, burnout dimensions, or factors associated with burnout; (5) assessed burnout using a standardized instrument, including the Maslach Burnout Inventory (MBI), Copenhagen

Burnout Inventory (CBI), Oldenburg Burnout Inventory (OLBI), or Burnout Assessment Tool (BAT), including validated Thai-language versions; and (6) were original peer-reviewed articles published between January 1, 2021, and March 1, 2026. Studies using self-developed or non-standardized burnout measures, providing insufficient quantitative burnout data, reporting duplicate datasets, or not meeting the predefined population or methodological criteria were excluded.

Information sources Electronic information sources were PubMed/MEDLINE, Scopus, APA PsycINFO via EBSCOhost, and Thai Journal Online (ThaiJO). Only published original studies meeting the predefined eligibility criteria were included.

Main outcome(s) The primary outcomes were the prevalence of overall burnout and the prevalence of specific burnout dimensions, particularly high emotional exhaustion, high depersonalization, and low personal accomplishment. For quantitative synthesis, study-specific prevalence proportions were calculated from reported event counts and denominators and summarized as pooled prevalence proportions with 95% confidence intervals.

Additional outcome(s) Additional outcomes included individual, sociodemographic, occupational, organizational, and psychosocial factors reported to be associated with burnout. Implications for occupational health prevention, workforce support, and future research were synthesized narratively.

Data management Search records were exported and managed in Microsoft Excel. Duplicate records were identified using title, author, publication year, and DOI where available, followed by manual verification. Titles and abstracts and subsequently full-text articles were independently assessed by two reviewers according to predefined eligibility criteria, with disagreements resolved through discussion and, when required, consultation with a third reviewer. Data were independently extracted by two reviewers using a pre-piloted Microsoft Excel form and subsequently compared and verified for completeness and accuracy.

Quality assessment / Risk of bias analysis Methodological quality was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies. Two reviewers independently evaluated each study across the eight JBI domains, with disagreements resolved through discussion and third-reviewer

adjudication when necessary. Items were rated as “yes,” “no,” “unclear,” or “not applicable.” Appraisal findings were used to inform interpretation rather than to generate a summary score or exclude studies. The certainty of evidence for each pooled prevalence estimate was additionally assessed using the GRADE framework, considering risk of bias, inconsistency, indirectness, imprecision, and publication bias.

Strategy of data synthesis Findings that could not be quantitatively harmonized were synthesized narratively. Meta-analysis was restricted to studies reporting sufficiently comparable categorical prevalence data for high emotional exhaustion, high depersonalization, and low personal accomplishment using MBI-based instruments. Study-specific prevalence proportions and 95% confidence intervals were calculated. Separate random-effects meta-analyses were performed for each burnout dimension, with between-study variance estimated using restricted maximum likelihood (REML). Statistical heterogeneity was quantified using the I^2 statistic. Pooled estimates were interpreted as summary indicators because of expected differences in professional groups, healthcare settings, sampling frames, scoring approaches, and cutoff definitions. Analyses were conducted using StataNow/BE version 19.5.

Subgroup analysis Subgroup analyses were conducted according to healthcare professional group where sufficient data were available. Meta-regression was additionally used to explore whether publication year was associated with variation in prevalence estimates. Small-study effects were assessed using Egger’s regression test.

Sensitivity analysis Leave-one-out sensitivity analyses were conducted by sequentially removing one dataset at a time and recalculating pooled estimates. Additional sensitivity analyses examined alternative meta-analytic specifications. First, prevalence proportions were logit-transformed and synthesized using random-effects models with REML estimation and subsequently back-transformed. Second, binomial-normal generalized linear mixed models with study-specific random intercepts and a logit link were fitted directly to event counts and sample sizes. GLMMs were estimated using adaptive Gauss–Hermite quadrature with 15 integration points.

Language restriction Studies published in English or Thai were eligible.

Country(ies) involved Thailand.

Other relevant information This review was initially entered in PROSPERO as a training record on February 7, 2026. The record was explicitly designated as a training record and not for publication. The systematic review has subsequently been completed but remains unpublished. The present INPLASY registration is therefore retrospective and is intended to provide a transparent public record of the review methods actually implemented. The review commenced on March 1, 2026, and the final database search was completed on April 30, 2026. Where methodological refinements occurred during conduct of the review, this registration reflects the procedures actually implemented and reported in the completed manuscript.

Keywords Burnout; Healthcare workers; Health personnel; Occupational health; Mental health; Thailand; Systematic review; Meta-analysis.

Dissemination plans Findings will be disseminated through publication in a peer-reviewed international journal and presentation at relevant academic or scientific conferences. The results are intended to inform occupational health research, healthcare workforce planning, and future studies on burnout prevention and workforce support in Thailand.

Contributions of each author

Author 1 - Anupong Wongninyong - Conceptualization, methodology, literature search, study selection, data extraction, formal analysis, visualization, and writing of the original draft.

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