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Phone: +984114799785
Fax: +984114796969

To What Extent Do Nurses in Sub-Saharan Africa Experience Moral Distress? A Systematic Review and Meta-regression Analysis

Kehinde Peter Animasahun[1*], Tolulope Deborah Oladimeji[2], Tomike Mabel Arowosegbe[3]
1Department of Surgery, Afe Babalola Multisystem Hospital, Ado Ekiti/ Ksticks Research Group (KREC), Nigeria
Info.ksticksresearch@gmail.com. 0009-0001-0146-8292
2Department of Perioperative Education, University Hospital Plymouth, Devon, United Kingdom
kosemanitolu@gmail.com. 0000-0003-0126-1424
3Faculty of Nursing, Afe Babalola University, Ado Ekiti, Nigeria
Arowosegbe@abuad.edu.ng. 0000-0002-5973-9577
***Corresponding author**: Kehinde Peter Animasahun (BNSC). **Email**: Info.ksticksresearch@gmail.com. http://orcid.org/0009-0001-0146-8292

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Abstract

Introduction: Moral distress arises when nurses cannot act in accordance with their ethical values due to institutional or resource constraints. Though well-studied in Western settings, evidence from Sub-Saharan Africa remains scarce. This review synthesises and quantifies moral distress among nurses in the region.

Methods: A PRISMA-guided systematic review and meta-analysis was conducted. Two databases: PubMed, and African Journals Online, plus a grey literature source, Google Scholar were searched from January 2005 to March 2025. Eligible studies reported quantitative moral distress measures among nurses in Sub-Saharan Africa. Quality was appraised using Joanna Briggs Institute checklists; no study attained high methodological quality. A random-effects model pooled mean scores; subgroup and meta-regression analyses explored heterogeneity. Publication bias was assessed via funnel plots, Egger's test, and trim-and-fill.

Results: Seven studies (n= 1,704 nurses; Ethiopia, Ghana, South Africa) met the inclusion criteria. The pooled mean moral distress score, standardised to a 1–10 scale, was 2.46 (95% CI: 2.33–2.58), indicating low overall distress; however, extreme heterogeneity (I^2= 100%) precludes definitive conclusions. Subgroup analyses revealed notably higher distress among Ethiopian nurses (pooled

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mean 4.97) compared to Ghanaian (0.07) and South African nurses (0.36), and among nurses in ICU, surgical, and medical units relative to operating theatre nurses.
Conclusion: This review provides the first region-specific evidence on moral distress among nurses in Sub-Saharan Africa. Findings highlight low but heterogeneous levels of distress. Enhancing organisational ethics, fostering supportive leadership, and implementing context-specific interventions could alleviate moral distress and improve the well-being of nurses.

Keywords: Moral distress, Nurses, Sub-Saharan Africa, Systematic review, Prevalence

Introduction

Nurses attend to patients' diverse needs in a hospital environment in a way that is safe, comprehensive, and of excellent quality.[1] This care may occasionally encompass intricate ethical scenarios that provoke moral quandaries.[2] Kim et al[3] reframed moral distress as the feeling of agent-regret, which develops painfully when one is caught up in a sad or possibly unfair care-related situation and is unable to take action due to external forces beyond their control. Kovanci & Atli Özbaş[4] explained that moral distress occurs when a person's actions don't align with their ethical beliefs. This could be due to a variety of factors, including collaboration issues, professional procedures, organisational, and operational structures.

Researchers have found varying degrees of moral distress among nurses across situations. For instance, a large majority of Nepalese nurses (82.5%) reported experiencing some moral distress.[5] However, Talebian et al[6] found that almost all critical care nurses (95.8%) reported minimal moral distress. Also, among 654 nurses surveyed by Oldenmenger et al[2] only 36.4% reported experiencing moral distress. The moral distress level was similarly modest (2.55 on a 1-10 scale) in the study by Alimoradi et al.[7] Regardless of its frequency, moral distress carries wide-ranging consequences across individuals, clinical units, and entire healthcare organisations.[8,9] At the individual level, nurses experiencing moral distress are more likely to report low self-esteem, stress, burnout, strained professional relationships, and diminished job satisfaction.[8] Nurses may feel more distant from their patients as a result of these events, which may make them doubt their responsibility to protect their patients' rights and make them feel disappointed in their patients.[10] Moral distress is also associated with higher nurse turnover, depleting the healthcare workforce, increasing pressure on remaining staff, and undermining institutional reputation.[11]

Moral distress among nurses has been widely studied in high-income settings.[4,6] Existing literature indicates that evidence from Sub-Saharan Africa remains limited and fragmented, and no prior systematic review has synthesised or quantified moral distress among nurses in the region. Also, based on our preliminary review of the literature, the few available primary studies vary considerably in design, measurement tools, and varying prevalence, making it difficult to establish a reliable, pooled estimate of moral distress among nurses in Sub-Saharan Africa. We contend that,

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without such synthesis, the true magnitude of moral distress in the region remains unclear, limiting the ability of health system stakeholders to recognise it as a priority or benchmark it against other settings. To address this gap, the present study undertakes the first systematic review and meta-analysis to synthesise and quantify moral distress among nurses in Sub-Saharan Africa.

Materials and Methods

Registration and Protocol

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[12] guidelines served as the foundation for this research methodology as described in the PRISMA checklist (Supplementary File S1). The protocol was duly registered in The International Prospective Register of Systematic Reviews (PROSPERO), with the registration number CRD420251159644 (Supplementary File S2).

Eligibility criteria

This review included studies of moral distress among licensed, registered, enrolled, or professional nurses and nurse-midwives. Studies involving mixed healthcare professional groups were eligible only if nurse-specific data were reported separately or obtainable from the authors. Eligible studies were conducted in Sub-Saharan Africa, as defined by the World Bank, including multi-country studies with disaggregated regional data.[13]

The primary outcome was the level of moral distress among nurses, measured using validated assessment tools, with mean moral distress scores as the key metric. Secondary outcomes included heterogeneity and sources of variation, assessed through subgroup analysis and meta-regression.

Eligible designs were observational studies with extractable quantitative data, including cross-sectional studies, cohort baseline data, facility- or national-level surveys, and mixed-methods studies reporting extractable prevalence data. Studies from any healthcare setting were eligible. Peer-reviewed publications and methodologically robust grey literature (e.g., theses) were included. This was done using Google Scholar. The same search terms and Boolean combinations used in the peer-reviewed database searches (Supplementary File 3) were applied, adapted to Google Scholar's search syntax. Only English-language studies published between January 2005 and March 2025 were considered.

Studies were excluded if they focused on non-nurse populations (e.g., student nurses, nursing assistants) without extractable nurse-specific data, were qualitative-only without extractable prevalence data, reported only mean scores without a defined prevalence or cut-off, assessed related constructs (e.g., moral injury, burnout) rather than moral distress directly, lacked reported findings, or were interventional in design.

Information Sources

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Two databases and one grey literature source were searched: PubMed and AJOL (African Journals Online) as databases, and Google Scholar as the grey literature source, covering January 2005 to March 2025. To minimise the risk of missing relevant studies, the reference lists of all included studies and relevant systematic reviews were manually screened using backward and forward citation approach. The backward citation searching was used to identify additional eligible studies, and forward citation search was done using Google Scholar's "Cited by" function for all included studies, to identify additional eligible publications that had cited the included articles.

Search Strategy

This review was conducted following the PRISMA standards.[14] In conducting a systematic search, the PECO-S framework was employed, encompassing Population (P), Exposure (E), Comparison (C), Outcome (O), and Study design (S) as outlined by Morgan.[15] The PECO framework was applied as follows: Population — registered nurses and nurse-midwives in Sub-Saharan Africa; Exposure — healthcare environments where ethical dilemmas may arise; Comparison — not defined; Outcome — prevalence and mean scores of moral distress using validated tools (e.g., MDS-R, MMD-HP); Study design — observational (cross-sectional, cohort baseline, or mixed-methods with extractable quantitative data). Search terms used a combination of MESH terms and keywords, Boolean indicators, truncators, and wildcards (Supplementary S3).

Study screening & selection

All articles were imported into the Rayann systematic review management software[16] for abstract and full-text screening. Further screening was done based on the inclusion criteria. All the authors participated in this process. After identifying potentially eligible studies, all their full texts were collected. All authors screened independently at the abstract and full-text stages. Discrepancies among reviewers were resolved through collaborative discussion.

Methodological quality assessment

The methodological quality of the seven studies included in the analysis was evaluated through the application of the JBI Critical Appraisal Checklist, specifically designed for prevalence studies.[17] The majority of studies (5 out of 7) distinctly articulated their inclusion criteria, and all offered comprehensive descriptions of the participants and the contexts in which the studies were conducted. Objective and standardised criteria were employed to evaluate the condition, ensuring that outcomes were assessed consistently across all studies. In summary, five studies were assessed to have a low risk of bias, whereas two were deemed to have a moderate risk, with JBI scores varying between 4 and 5. The findings of this assessment were incorporated into the Supplementary table (Supplementary S4).

Data extraction

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Using a pre-designed Excel sheet, data were retrieved separately by two authors (KPA and TDO). Population parameters (nursing speciality, clinical unit), research design, sample size, author, year, and country were among the extracted pieces of information. Outcome measures pertaining to moral distress were also included. We noted the following for each study: the assessment instrument used (e.g., MMD-HP or Moral Distress Scale—Revised), the mean scores with standard deviations, the percentage of nurses who reported feeling moral distress, and any documented cut-off points. Contextual remarks about heterogeneity, quality evaluation ratings, and response rates were among the additional characteristics that were gathered. Differences among reviewers were addressed through deliberation and mutual agreement.

Data synthesis

Data from the included studies were quantitatively synthesised using Review Manager (RevMan) version 5.4.[18] A meta-analysis employing a random-effects model was conducted to address both within- and between-study variance.[19] The aggregated mean scores of moral distress, accompanied by their standard deviations, were computed across the various studies. Due to the utilisation of diverse measurement scales across different studies, it was not feasible to directly aggregate the raw means. In order to facilitate comparability, the average score of each study was standardised through a process of multiplication by 10 and division by the maximum possible score on its corresponding scale, thus rendering all results into a cohesive 1–10 scale.[20] Analyses of subgroups were performed based on country, area of practice, and the quality of methodology employed. Meta-regression was conducted using both RevMan and STATA software to investigate potential sources of heterogeneity.[18,21] Statistical heterogeneity was assessed using the Q-test and the I^2 statistic.[22] It was interpreted as mild (I^2< 25%), moderate (25<I^2<50%, severe (50<I^2<75%), and highly severe (I^2>75%).[22] Publication bias was examined through funnel plots, Egger's test, and the trim-and-fill method.[21,23,24] Sensitivity analyses (leave-one-out jackknife) were performed to test the robustness of findings.

Results

Figure 1 depicts the screening process for the studies. Database searches yielded 842 records (37 from PubMed, 555 from Google Scholar, and 250 from AJOL). After 438 duplicates were removed, 404 records were left for title and abstract screening. Out of these, 361 were excluded, leaving 43 full-text articles evaluated for eligibility. Twenty-four full-texts were rejected due to erroneous populations (n= 10), outcomes that were not specific to nurses (n= 12), and incorrect study types (n= 14). In the end, seven studies fulfilled the inclusion criteria and were included in the meta-analysis and systematic review.

Study Characteristics

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Seven studies, published between 2020 and 2025, were included in this review, comprising a total of 1,704 nurses from Ghana, Ethiopia, and South Africa. All studies employed cross-sectional or descriptive-correlational designs and were conducted in hospital settings, with sample sizes ranging from 74 to 423 participants. Nurses were drawn from diverse practice areas, including emergency care, surgical, medical, intensive care, paediatrics, obstetrics, psychiatry, and operating theatres. Moral distress was consistently measured using validated instruments, primarily the Moral Distress Scale-Revised (MDS-R) or its adaptations. The characteristics of all seven included studies are summarised in Table 1.

Estimation of the pooled moral distress mean score

The pooled estimated mean score for moral distress was 2.46, with a range of 1–10. 95% CI [2.33–2.58], I^2: 100.0%, Tau2:0.0194. Figure 2 provides a forest plot regarding the pooled estimated mean score of moral distress.

Sensitivity analysis

The leave-one-out sensitivity analysis indicated that removing any individual study did not substantially affect the overall pooled estimate. Excluding Antwi & Galanza[25] or Beyaffers et al[26] resulted in a slight increase in the pooled mean, whereas omitting Berhie et al led to a slight decrease. No single study reverses the overall direction.

Subgroup result

Subgroup analysis is shown in Table 2. Heterogeneity was extreme (I^2= 100.0%, τ^2= 0.0194), indicating substantial variability across the included studies. By country, one study from Ghana reported a very low mean score of 0.07. The two South African studies yielded a pooled mean of 0.355, 95%CI (0.197–0.512); I^2= 18.1%, reflecting consistent results with low heterogeneity. In contrast, the four Ethiopian studies reported a higher pooled mean of 4.967 (95% CI, 0.336–9.597); I^2= 100%, with considerable variability. By study design, all seven studies were descriptive observational, with a pooled mean of 2.46 (95% CI, 2.33–2.58) and very high heterogeneity (I^2= 100%). By methodological quality, studies judged as low risk of bias (n= 5) reported a pooled mean of 2.224, 95%CI (2.135–2.312); I^2= 100%, while moderate-risk studies (n= 2) clustered at a lower pooled mean of 0.355, 95%CI (0.197–0.512); I^2=18.1%. By practice area, nurses working in emergency care (2 studies), medical wards (3 studies), surgical units (2 studies), and intensive care units (2 studies) reported relatively higher pooled mean scores, each with I^2 =100%, indicating persistent heterogeneity. In contrast, the operating theatre subgroup (1 study) reported a lower mean of 0.38.

Of note, specific subgroup analyses gave confidence intervals that encompassed negative lower bounds (e.g., –2.95 to 9.72). Considering that moral distress scores were standardized on a 1–10 scale, these negative values do not indicate negative distress; they should be regarded as statistical

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artifacts resulting from significant between-study variance. These wide and unstable confidence intervals underscore the fragility of subgroup estimates when heterogeneity is extreme and the number of studies is small.

Publication bias

Based on the visual inspection of the funnel plot, asymmetry was detected (Figure 3). Egger's regression test demonstrated statistical significance (P= 0.026), in contrast to Begg's test, which was not significant (P= 0.43), as revealed in Table 3. Nonetheless, the trim-and-fill analysis suggested that no further studies were necessary to modify the pooled estimate, indicating an insignificant effect of publication bias on the overall outcome.

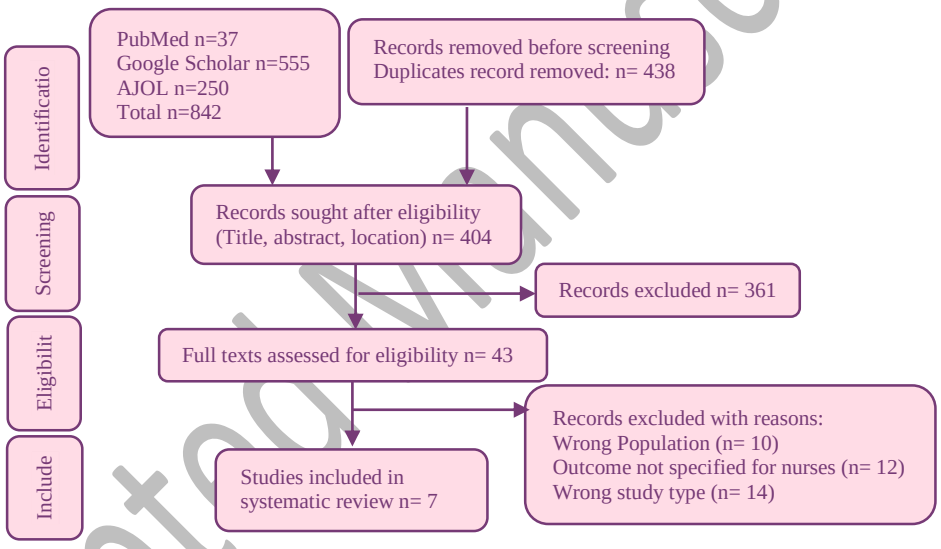

Figure 1. PRISMA flow diagram

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Table 1. Summary of the characterises of the included studies

Author/ year	Country	Design	Practice areas	Sample size	Prevalence of moral distress	Moral Distress Score (Standardized 1–10)	Measure	JBI score
Antwi & Galanza[25] (2024)	Ghana	Descriptive-Correlational	Emergency Care, Medical, Surgical, Operating Theatre, Intensive Care	231	Mean score of 227.31	1.06	Moral Distress Scale-Revised (MDS-R)	5
Beyaffers et al[26] (2020)	Ethiopia	Cross-Sectional Study	Not specified	248	70.16%	1.02	Hamric's Moral Distress Scale-Revised (MDS-R)	4
Chipps et al[27] (2025)	South Africa	Cross-Sectional Study	Midwifery, paediatrics, critical care, general, psychiatric, emergency and Other	167	Mean score of 3.42 out of 6	1.34	Moral Distress Scale (Eizenberg et al 2009	5
Emmamally & Chiyangwa[28] (2020)	South Africa	Cross-Sectional Study	Critical care nurses	74	Mean score of 112.12	1.09	Moral distress scale-revised (MDS-R) questionnaire	5
Desalegn[29] (2023)	Ethiopia	Cross-Sectional Study	Medical ward Surgical ward Emergency ICU, Paediatrics ward, Gynaecology NICU, OPD	349	73.1%	6.70	Hamric's Moral Distress Scale-Revised (MDS-R)	5
Berhie et al[30] (2020)	Ethiopia	Cross-Sectional Study	Not specified	423	83.7%	7.09	Moral Distress Scale-Revised (MDS-R)	4

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Getahun et al[31] (2024)	Ethiopia	Cross-Sectional Study	Medical ward Pediatric ward Emergency ward OPD Operation room Psychiatry ward ART, TB, MDR Surgical ward Orthopedic, ICU, and Obstetrics and gynecology, Radiography, Supervision and control.	212	86.8%	7.09	Moral Distress Scale-Revised (MDS-R)	5

Note: The prevalence is articulated either as the percentage of nurses indicating moral distress or as the mean score on the original instrument scale, contingent upon the instrument employed in each respective study.

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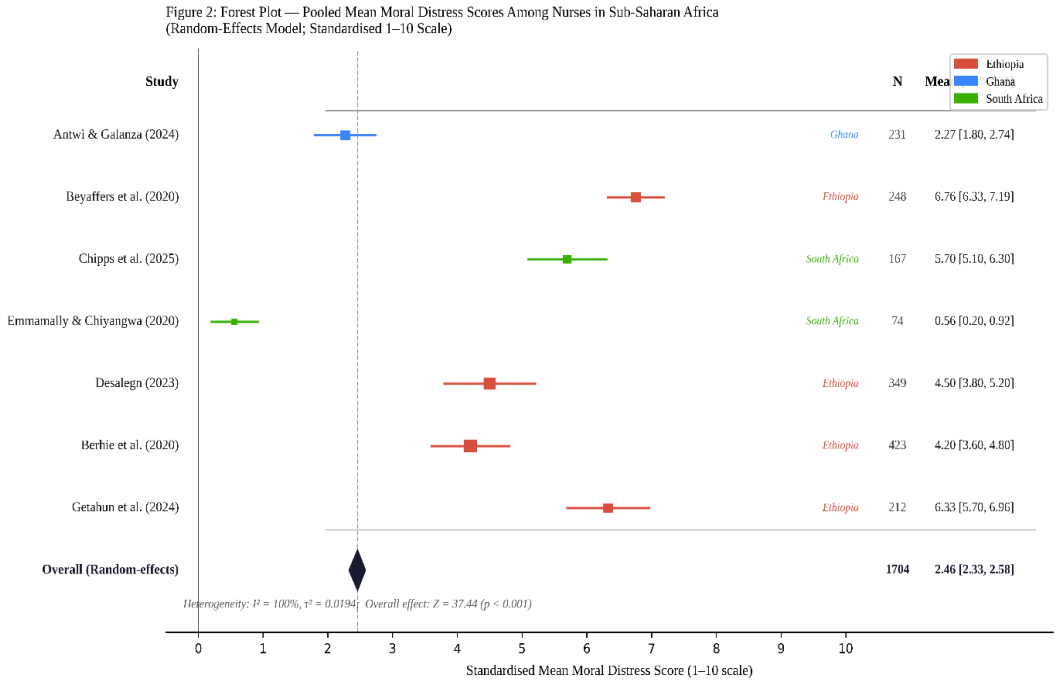
Table 2. Subgroup analysis (degree of heterogeneity) of moral distress studies

Variable/Subgroup	No. of Studies	Estimated mean score (95% CI)	I^2 (%)	Tau^2
Country				
Ghana	1	0.070 (–)	–	–
South Africa	2	0.355 (0.197-0.512)	18.1	0.0071
Ethiopia	4	4.967 (0.336–9.597)	100.0	22.3137
Design				
All Descriptive	7	2.46 (2.33–2.58)	100.0	0.0194
Methodological quality				
Low risk	5	2.224 (2.135–2.312)	100.0	0.0060
Moderate risk	2	0.355 (0.197–0.512)	18.1	0.0071
Practice Area/Unit				
Emergency	2	3.389 (–2.946–9.724)	100.0	31.7898
Medical	3	4.658 (–1.122-10.438)	100.0	23.2916
Surgical	2	3.335 (–2.752–9.422)	100.0	21.7826
Operating theatre	1	0.38 (–)	–	–
Intensive care unit	2	3.459 (–2.778–9.696)	100.0	22.1867

Figure 2. Forest plot of the estimated pooled mean scores of moral distress



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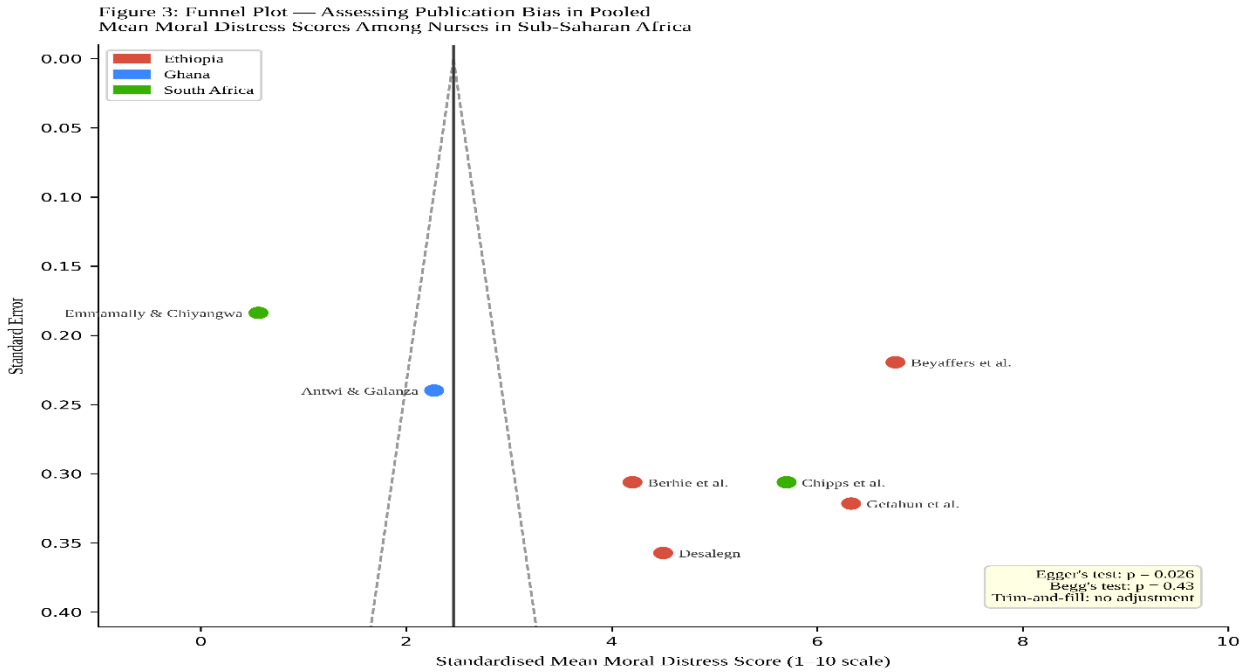
Each square represents the standardised mean moral distress score of an individual study, with the square size proportional to the study weight. Horizontal lines represent 95% confidence intervals. The diamond at the bottom represents the pooled mean estimate. All scores are standardised to a 1–10 scale. Extreme heterogeneity (I^2= 100%) indicates substantial variability across studies, and results should be interpreted with caution.

Figure 3. Funnel plot assessing publication bias in the estimated pooled mean scores of moral distress



Each point represents an individual study plotted by its standardised mean score (x-axis) against the standard error (y-axis). In the absence of publication bias, studies are expected to be symmetrically distributed around the pooled estimate, forming an inverted funnel shape. Visual asymmetry in the plot suggests possible publication bias, consistent with Egger's test result (P= 0.026), although the trim-and-fill analysis indicated no imputed studies were required to adjust the pooled estimate.

Table 3. Eggers and Begg's test for publication bias

Egger's test	
Intercept	-29.87
P value	0.026
Interpretation	Possible publication bias
Begg's test	
Kendall's Tau	0.26
P value	0.43
Interpretation	No significant bias

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Discussion

The aggregated estimated mean score of moral distress was 2.46 out of 10, which may appear to suggest a low overall level of moral distress. However, this estimate should be interpreted with caution given the extreme heterogeneity, small number of studies, variation in measurement instruments and cut-off values, and the absence of high methodological quality across included studies. The pooled estimate thus represents a statistical summary rather than a definitive characterisation of nurses' moral distress experience in the region. Additionally, even where moral distress appears low on average, nurses in specific countries and clinical settings reported substantially higher scores, as evidenced by the subgroup analyses. Furthermore, even modest levels of moral distress, if sustained or recurrent, can accumulate over time and lead to emotional exhaustion, reduced job satisfaction, and burnout, ultimately affecting nurse retention and quality of patient care. This underscores the need for continuous monitoring and proactive strategies to strengthen ethical resilience, including ethics education, peer support programmes, and institutional mechanisms that enable nurses to effectively navigate moral dilemmas.

The aggregated mean score of moral distress identified in this review corresponds with international research suggesting that nurses typically experience low levels of moral distress. An international meta-analysis conducted by Alimoradi et al[7] found comparable findings, revealing a global mean of 2.55. However, research conducted in high-income countries like Italy revealed greater levels of distress.[32] Similar to the results of the present review as well, Sannino et al[33] found that nurses had a high average level of moral distress. Contextual variables, such as healthcare legislation, staffing ratios, ethical support structures, organisational culture, and study methodology, likely account for these cross-context differences in moral distress. These differences highlight the importance of region-specific rather than Western-generalised research on moral distress.

Within the African context, the findings of this study align with the results documented by Langley et al.[34] Which indicated that nurses encounter significant moral distress. Contrary to the conclusions drawn in the current study, Ntseke[35] indicated that a majority of nurses encountered the initial stage of moral distress while attending to patients with a do-not-resuscitate (DNR) order. The observed discrepancies indicate that the local healthcare infrastructure, institutional support, and cultural factors significantly influence the moral distress experiences of nurses.

Nonetheless, significant discrepancies were noted among the individual studies encompassed in this review. Some reported exceedingly low mean values, while others exhibited significantly elevated means. The analyses of subgroups yielded significant understanding regarding the origins of this variability. Nurses in Ethiopia[26,29-31] exhibited significantly elevated scores compared to their peers in Ghana[24] and South Africa[27,28], a result that may indicate variations in health system resources, nurse–patient ratios, and encounters with ethically complex situations. Ethiopia faces

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significant health system challenges: the country has one of the lowest nurse-to-population ratios in Sub-Saharan Africa, substantially below South Africa and Ghana.[26] Furthermore, Ethiopia's public health expenditure per capita remains among the lowest in the region,[13] translating to chronic resource shortages, overcrowded wards, and inadequate staffing, all of which are established drivers of ethical conflict and moral distress. These structural disparities, combined with limited access to formal ethics committees or moral support mechanisms in many Ethiopian hospitals, may partly explain the higher distress scores observed.

The practice area significantly shaped the outcomes: nurses working in intensive care, surgical and medical units experienced elevated levels of moral distress, whereas those in the operating theatre consistently recorded much lower scores. In high-stakes environments, nurses frequently encounter circumstances that hinder their ability to adhere to their professional and ethical principles, primarily due to institutional limitations or the pressing demands of patient care. This results in elevated levels of moral distress when compared to other hospital units.[7] This pattern aligns with previous findings indicating that moral distress is often heightened in settings where personnel confront critical life-and-death choices, constraints on resources, and complex end-of-life care issues, particularly in intensive care units and emergency departments.[33] Conversely, operating theatre nurses frequently function within more organised settings that provide distinct role expectations, potentially alleviating ethical dilemmas.

Strength and limitations of the study

This review's main strength lies in its status as the inaugural systematic review and meta-analysis addressing moral distress among nurses in Sub-Saharan Africa. It draws on evidence from a range of clinical environments including ICUs, surgical units, medical wards, and operating theatres. Unlike prior global meta-analyses, this review highlights within-region heterogeneity and provides a foundation for context-sensitive interventions and policies in resource-limited healthcare environments. Several limitations should be noted. The evidence base was small and geographically narrow, comprising only seven cross-sectional studies from three countries (Ethiopia, Ghana, and South Africa), which limits generalisability across the region and precludes causal or temporal inferences. Methodological quality was generally low on JBI appraisal, and extreme heterogeneity (I^2= 100%) means the pooled estimate should be interpreted descriptively rather than as a precise regional figure. Restriction to English language studies may have introduced language bias. Publication bias was inconclusive: Egger's test suggested possible bias (P= 0.026) while Begg's test did not (P= 0.43), and trim and fill imputed no missing studies, offering partial but not complete reassurance. Additionally, the search was restricted to two major databases, PubMed, AJOL, which may have resulted in missed studies. Future research should expand coverage to more Sub-Saharan African countries, adopt longitudinal and interventional

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designs, and evaluate the effectiveness of organisational and policy-level interventions to reduce moral distress and support nurse well-being.

Conclusion

The overall mean score suggests a predominantly low degree of moral distress experienced by nurses; however, notable variability is observed across different settings, countries, and areas of practice. High-acuity units and resource-limited environments are linked to increased moral distress, underscoring the impact of organisational, structural, and cultural factors.
Healthcare administrators and policymakers should implement strategies that address systemic gaps, including supportive leadership, strong ethical environments, and protected channels for raising ethical concerns. Nursing education should integrate training focused on ethical resilience and coping strategies, equipping nurses to navigate morally complex situations effectively. Also, as none of the included studies met the criteria for high methodological quality, future primary studies should employ more rigorous research designs and adhere to established reporting standards to strengthen the quality and reliability of the evidence base.

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Author's Contribution

Conceptualisation: Kehinde Peter Animasahun
Data curation: Tolulope Deborah Oladimeji and Tomike Mabel Arowosegbe
Formal analysis: Kehinde Peter Animasahun and Tolulope Deborah Oladimeji
Funding acquisition: Kehinde Peter Animasahun
Investigation: Tolulope Deborah Oladimeji and Tomike Mabel Arowosegbe
Methodology: Tomike Mabel Arowosegbe and Kehinde Peter Animasahun
Project administration: Kehinde Peter Animasahun
Resources: Kehinde Peter Animasahun
Software: Kehinde Peter Animasahun
Supervision: Tolulope Deborah Oladimeji and Tomike Mabel Arowosegbe
Validation: Tolulope Deborah Oladimeji
Visualization: Kehinde Peter Animasahun
Writing – original draft: Tolulope Deborah Oladimeji

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Writing – review & editing: Kehinde Peter Animasahun, Tolulope Deborah Oladimeji and Tomike Mabel Arowosegbe

Competing Interests
Authors declare no conflict of interest.

Data Availability
Data are available upon reasonable request from the First Author.

Ethical Issues
This study is a systematic review and meta-analysis of previously published studies, and no primary data collection was conducted. Accordingly, formal ethical approval was not required. All included studies were previously approved by their respective institutional ethics committees, as reported in the original publications. The review was conducted in accordance with PRISMA guidelines and the principles of responsible research practice.

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Research Highlights

What is the current knowledge?

- Moral distress contributes significantly to burnout, staff turnover, and reduced quality of nursing care across healthcare systems.
- Previous systematic reviews on moral distress have predominantly focused on Western healthcare settings and contexts.
- Limited evidence exists on how moral distress affects nurses working in Sub-Saharan African healthcare settings.

What is new here?

- This is the first systematic review and meta-analysis examining moral distress among nurses in Sub-Saharan Africa.
- Findings reveal generally low but highly variable moral distress levels across Sub-Saharan African countries and practice settings.
- Nurses in Ethiopia and those in intensive care, surgical, or medical units experience higher distress than others.

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