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# The prevalence of occupational-related low back pain among working populations in sub-saharan Africa: a systematic review and meta-analysis

Yibeltal Assefa Atalay<sup>1\*</sup> , Natnael Atnafu Gebeyehu<sup>2</sup> and Kelemu Abebe Gelaw<sup>2</sup>

## Abstract

**Introduction** Work-related musculoskeletal disorders represent a major public health problem, contributing significantly to the global burden of disability-adjusted life years and affecting the quality of life of all population groups. The main problem in most musculoskeletal disorders is low back pain. Therefore, our study aims to identify the overall prevalence of work-related low back pain among the working population in sub-Saharan Africa.

**Methods** Research published between 2010 and 2023 in English, conducted in Sub-Saharan Africa was included in this systematic review and meta-analysis. Using Boolean logic operators and targeted keywords, we searched for publications on a number of electronic databases (Web of Science, PubMed, Google Scholar, African Journals Online (AJOL), and Science Direct). The Joanna Briggs Institute Critical Appraisal techniques were utilized to conduct a quality assessment of the papers and ascertain their relevance to the study. The degree of heterogeneity among the included studies, the 95% confidence interval, and the pooled prevalence were estimated using a random effects model. Sensitivity studies were carried out to determine the causes of heterogeneity and the impact of outliers.

**Results** In this study, a total of 970 articles were retrieved, and 35 studies were included in the systematic review and meta-analysis. The overall estimated pooled prevalence of low back pain among the working population in sub-Saharan Africa was (55.05% [95% CI: 49.34, 60.76]). Based on a sub-group analysis by countries, the higher pooled prevalence of low back pain was found in Uganda at (61.48% [95% CI: 40.39, 82.57]), while the lower pooled prevalence of low back pain was in Ghana at (34.48% [95% CI: 17.96, 51.01]).

**Conclusions** This systematic review and meta-analysis found that 55.05% of the included study participants experienced low back pain in the previous years. Therefore, it is recommended that policymakers incorporate and enhance strategies for the prevention and management of low back pain within the health system management guidelines of each country.

**Keywords** Low back pain, Musculoskeletal pain, Occupational-related, Systematic review, Meta-analysis, Sub-saharan Africa

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## Introduction

Low Back Pain (LBP) is defined as pain or discomfort in the lower spine, between the last thoracic and first sacral vertebrae, potentially radiating to the lower limbs or pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without leg pains. These disorders are characterized by a variety of symptoms, including pain, discomfort, and general aches [1, 2]. The most common musculoskeletal condition and the main cause of years lived with disability (YLDs) worldwide is low back pain [3].

According to the expert panel conducting the Global Burden of Disease (GBD) study, low back pain (LBP) is one of the top 10 diseases and injuries in terms of burden. It is linked to a higher average number of disability-adjusted life years (DALYs) than those caused by HIV, TB, lung cancer, traffic accidents, and difficulties from premature delivery [4].

Employees engaged in diverse occupational categories face a significant risk of workplace hazards, rendering them particularly vulnerable to a range of negative health effects [5]. Upper and lower extremity disorders develop as a result of an employee's exposure to work-related factors such vibration, temperature, fixed or restricted body position, constant repetition of movements, force concentration on small parts of the body, fast work pace that does not allow for adequate recovery, and so forth [6, 7].

In work environments, the impact of low back pain (LBP) is significant, manifesting in both direct and indirect costs. These costs encompass diminished productivity, restrictions in daily activities, absenteeism, premature retirement, and substantial economic strain due to compensation expenses and lost income [8].

The Global Burden of Disease Report (2016) identified musculoskeletal disorders (MSDs) as significant contributors to disability-adjusted life years, highlighting their impact on healthcare service usage and associated social issues [9, 10]. Low back pain represents a significant clinical and public health challenge, having attained epidemic proportions. The current estimates suggest that approximately 90% of individuals worldwide will experience low back pain at some stage in their lives [11].

The global incidence of low back pain (LBP) is on the rise, with estimates suggesting that it affects between 30% and 80% of the general population [12]. In developing nations, the enforcement of occupational health and safety practices is frequently overlooked, resulting in inadequate preventive measures [13]. Numerous studies have indicated that lower back pain associated with occupational activities is primarily linked to physical factors, including prolonged standing, lifting, repetitive motions, and maintaining awkward postures [8, 10, 14].

Health conditions affecting the lower extremities related to occupational hazards are often deprioritized

and lack empirical representation in low- and middle-income countries (LMICs), especially in sub-Saharan Africa. This oversight is largely attributed to the predominant focus on more urgent and life-threatening health challenges, such as infectious diseases [15].

Furthermore, numerous African nations are currently experiencing socio-political turmoil, leading to a significant diversion of nearly all available resources towards the resolution of these political issues, rather than focusing on public health challenges, such as the management of low back pain (LBP) [16, 17].

In sub-Saharan Africa, the prevalence of low back pain is dispersed and increasing in the working population, however, there is a lack of studies to estimate the pooled prevalence of low back pain among the working population to provide strong evidence for policymakers and implementers to design effective prevention and control methods to protect workers health. Therefore, the objective of this review was to estimate the pooled prevalence of low back pain among the working population in sub-Saharan Africa.

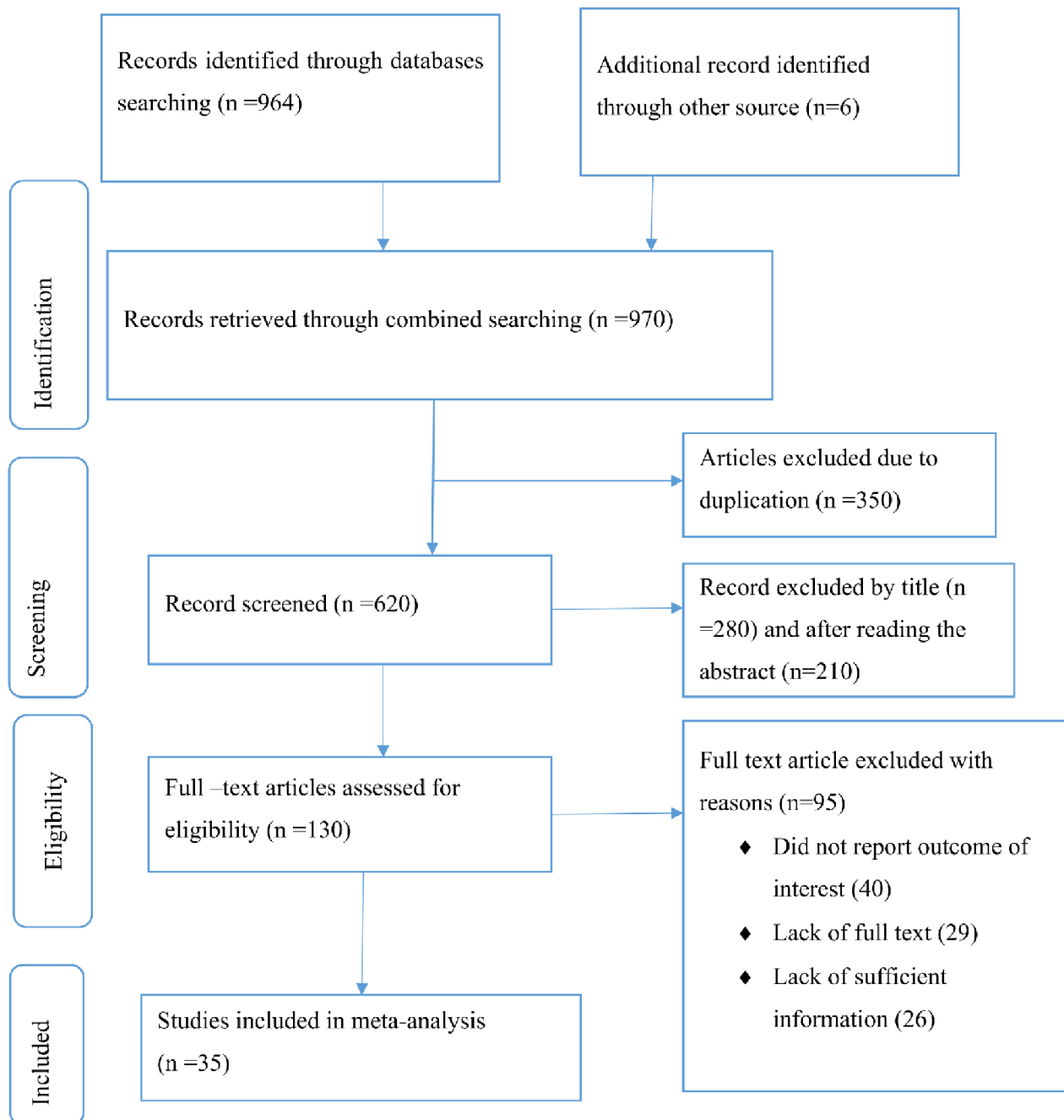
## Methods

### Protocol and registration

The approach of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses was adhered to in performing this meta-analysis [18] (S1 Table). A comprehensive examination of the relevant primary studies on occupational-related low back pain among different populations in sub-Saharan Africa was undertaken. To guarantee accountability and openness, the review protocol has been sent to an international prospective register for systematic reviews.

### Search strategies

A comprehensive search of published studies was conducted across several databases, including Web of Science, PubMed, Google Scholar, African Journals Online (AJOL), and Science Direct. Literature review focused exclusively on studies published in English that investigated occupationally related low back pain among various populations in countries within sub-Saharan Africa. An advanced search on PubMed was conducted using a systematic approach. In the beginning, search terms were developed for seven key areas: "Prevalence," "Occupational related," "Work-related," "Lower back pain," "Back pain," "Low backache," and "Sub-Saharan Africa". These keywords were retrieved from Google Scholar and then individually searched in PubMed to identify relevant MeSH terms within the MeSH hierarchy tree. These terms were then combined using advanced Boolean search logic, specifically using the "AND" and "OR" operators to effectively bring the concepts together. The search was also made by combining the above search



**Fig. 1** Flow chart diagram for low back pain in sub-Saharan Africa

terms with the names of all countries included in Africa. The last search of the articles was done in January, 2024.

#### **Inclusion and exclusion criteria**

This meta-analysis exclusively encompassed research carried out in sub-Saharan Africa from 2010 to 2023, published in English, and had complete texts available for search. This study also included studies that focused on the prevalence of occupational-related low back pain. The

studies were conducted in sub-Saharan African countries. However, certain primary studies were excluded for various reasons. These reasons included a lack of information on the prevalence of low back pain, unavailability of the full text, low-quality score, inability to access the full text after multiple attempts to contact the corresponding author, and exclusion of narrative reviews, editorials, correspondence, abstracts, or methodological studies.

**Table 1** Descriptive summary of 35 studies reporting low back pain in Sub-saharan Africa

Authors	Pub. Year	Country	Sub-Region	Study-population	Sample Size	Low Back Pain (95%CI)
Solomon et al. [20]	2021	Ethiopia	East Africa	Hairdressers	344	47.5
Samuel et al. [21]	2013	Nigeria	West Africa	Hairdressers	1062	33.19
Aweto et al. [22]	2015	Nigeria	West Africa	Hairdressers	299	76.3
Mekonnen et al. [23]	2020	Ethiopia	East Africa	Hairdressers	652	70.2
Tolera et al. [24]	2020	Ethiopia	East Africa	Bank workers	368	56
Ihegihu et al. [25]	2022	Nigeria	West Africa	Hairdressers	122	67.21
Mekonnen T et al. [26]	2017	Ethiopia	West Africa	Hairdressers	429	55.7
Aleku et al. [27]	2021	Uganda	East Africa	Health Workers	245	39.6
Johnson et al. [28]	2018	Nigeria	West Africa	Hairdressers	429	61.5
Oppong-Yeboah et al. [29]	2014	Ghana	West Africa	Health Workers	80	25.5
Chongo-Faruk et al. [30]	2016	South Africa	Southern Africa	Hairdressers	321	34.5
Ametepeh et al. [31]	2013	Ghana	West Africa	Hairdressers	440	42.4
Gemedo et al. [32]	2023	Ethiopia	East Africa	Health Workers	621	34.56
Ssempebwa et al. [33]	2019	Uganda	East Africa	Hairdressers	243	82.7
Tamene et al. [34]	2020	Ethiopia	East Africa	Vehicle Repair Workers	344	47.7
Kibret et al. [35]	2020	Ethiopia	East Africa	Bank workers	307	65.5
Daba Wami et al. [36]	2019	Ethiopia	East Africa	Cleaners	422	62.8
Lette et al. [37]	2019	Ethiopia	East Africa	Vehicle Repair Workers	410	43.9
Melese et al. [38]	2020	Ethiopia	East Africa	Cleaners	270	52.3
Dagne et al. [39]	2020	Ethiopia	East Africa	Bank workers	755	77.6
Regassa et al. [40]	2018	Ethiopia	East Africa	Health Workers	301	67.8
Nilahi et al. [41]	2014	Tanzania	East Africa	Teachers	369	17.1
Sumaila et al. [42]	2015	Nigeria	West Africa	Teachers	157	62.7
Kebede et al. [43]	2019	Ethiopia	East Africa	Teachers	611	74.8
Beyen et al. [44]	2013	Ethiopia	East Africa	Teachers	346	53.8
Nottidge et al. [45]	2019	Nigeria	West Africa	Health Workers	334	42.2
Munabi et al. [46]	2014	Uganda	East Africa	Health workers	741	61.9
Dlungwane et al. [47]	2018	South Africa	Southern Africa	Health Workers	242	59
Mekonnen H et al. [48]	2019	Ethiopia	East Africa	Health Workers	418	63.6
Tafaune et al. [49]	2021	South Africa	Southern Africa	Health Workers	280	73.2
Abebaw et al. [50]	2018	Ethiopia	East Africa	Teachers	771	44(
Gothey et al. [51]	2022	Tanzania	East Africa	Health Workers	155	75.5
Gweha et al. [52]	2024	Cameroon	Central Africa	Health Workers	268	67.5
Ayane et al. [53]	2023	Ethiopia	East Africa	Health Workers	427	42.6
Terfe et al. [54]	2023	Ethiopia	East Africa	Cloth weavers	660	44.1

LBP = low back pain

### Study selection process

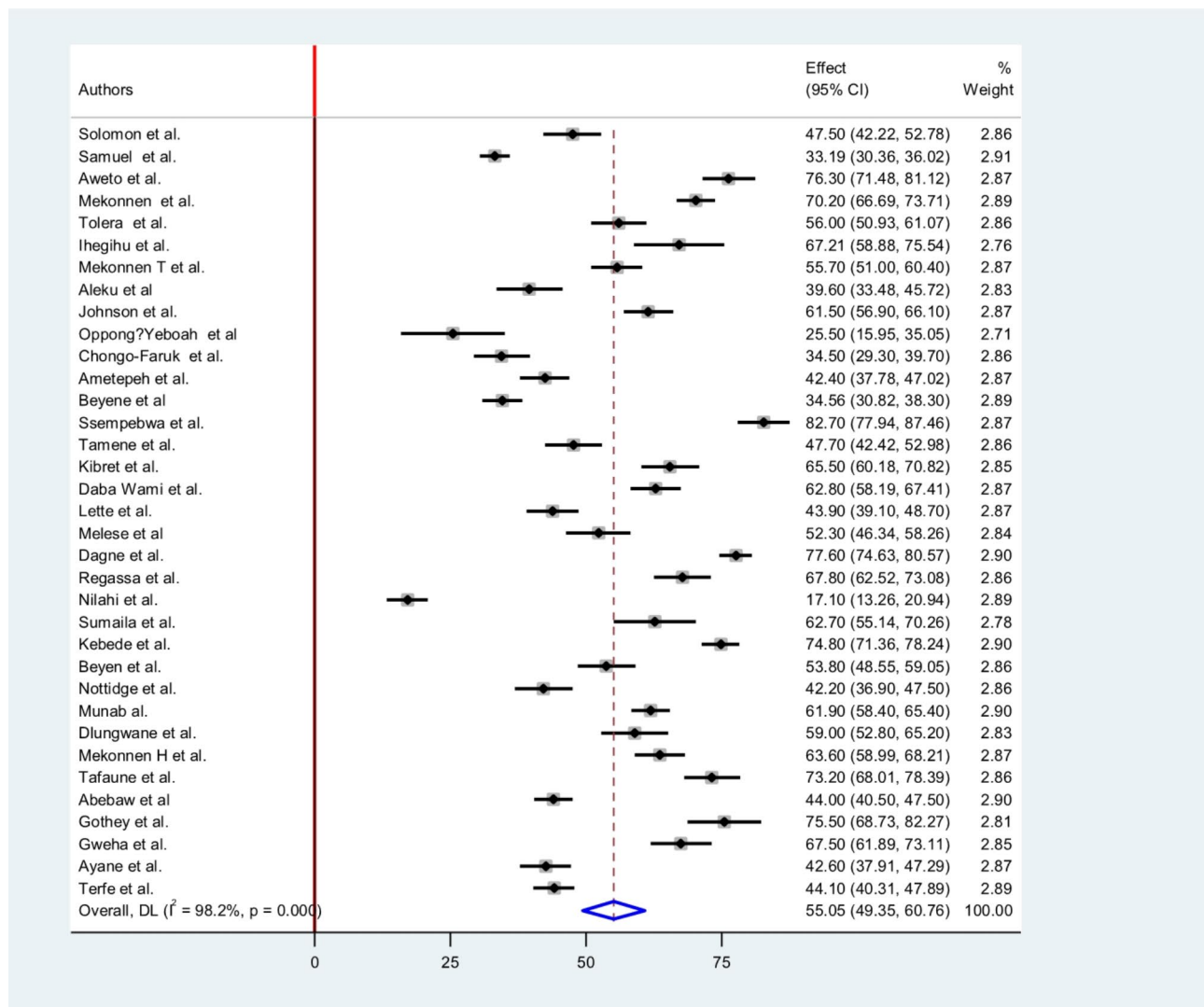
Using predefined inclusion and exclusion criteria, two review authors (YAA & KAG) independently evaluated papers based on their title, abstract, and full text in order to find suitable studies. After articles were identified, Endnote software was used to integrate, export, and manage them. After duplicate studies were eliminated, titles and abstracts were independently screened by other review authors (KAG) for inclusion in the full-text appraisal. Disagreements among authors during data abstraction and selection are resolved through evidence-based discussion and the participation of the remaining review authors (NAG).

### Outcome variable

The primary outcome of this study is to determine the pooled prevalence of occupational-related low back pain among the working population in sub-Saharan Africa.

### Data extraction and management

The data were extracted using the Joanna Briggs Institute (JBI) data extraction checklist. Three review authors (YAA, KAG & NAG) extracted the data independently using a Microsoft Excel spreadsheet. The differences between the three review authors were solved with discussion. Any discrepancies were resolved through a review by the other review authors (NAG). From each study, information such as the name of the first author, the year of publication, the study country, the study



**Fig. 2** The pooled prevalence of low back pain in sub-saharan Africa

design, the total number of participants, and the prevalence of low back pain were extracted.

#### Assessment of the methodological quality of the studies

The JBI quality appraisal tools designed for cross-sectional studies were employed to evaluate the quality of the selected articles and to determine the potential risk of bias present in each study [19]. Three reviewer authors (YAA, KAG & NAG) independently assessed the quality of the included articles. The assessment tool contains eight criteria. It was evaluated using the JBI critical appraisal checklist options of “yes,” “no,” “unclear,” and “not applicable.” The risks for biases were classified as low (total score, 5 to 8) and high (total score, 0 to 4). The study scored 50% or higher on all quality-assessed items, which were considered low-risk and included in this review. (S2 Table).

#### Statistical methods and data analysis

The essential information was extracted utilizing Microsoft Excel 2016 and transferred to Stata 17 for further analysis. The prevalence of low back pain in each primary article was determined by the authors through the calculation of standard errors using a binomial formula. We also checked the level of Heterogeneity among the reported prevalence of the studies using the Cochrane  $Q^2$  and  $I^2$  statistics. The heterogeneity was quantified as high (considerable), moderate, low as 75% and more, 50–75%, and 25% and less respectively. The random effects model was used to estimate the der Simonian and Laird’s pooled effects since test statics showed there was considerable heterogeneity among studies ( $I^2=98.2$ ,  $P=0.000$ ). The publication bias was conducted using a subjective funnel plot and objectively using Egger’s test with a 5% significant level. In Egger’s test  $p$ -value, less than 5% indicates the presence of publication bias. In addition, sub-group

**Table 2** Sub-group analysis for the pooled prevalence of low back pain in Sub-saharan Africa

Outcomes	characteristics	Included studies	Total Participants	Effect size (95% CI)	Heterogeneity	
					I <sup>2</sup> - value	P-value
LBP	Country					
	Ethiopia	18	8,456	55.82 (49.23, 62.41)	97.6%	<0.001
	Uganda	3	1,229	61.48 (40.39, 82.57)	96.2%	<0.001
	Nigeria	6	2,403	57.08 (41.25, 72.90)	98.4%	<0.001
	South Africa	3	843	55.55 (32.13, 78.98)	98.2%	<0.001
	Tanzania	2	524	46.23(-11.00,103.46)	99.5%	<0.001
	Cameroon	1	268	60.50 (61.89, 73.10)	0.0%	<0.001
	Ghana	2	520	34.48 (17.96,51.01)	89.7%	<0.001
	<b>Study population</b>					
	Hairdressers	10	4,341	57.08 (45.38, 68.77)	98.5%	<0.001
	Bank workers	3	1,430	66.48 (53.01,79.95)	96.5%	<0.001
	Health Workers	12	4,112	54.52 (45.85, 63.20)	97.1%	<0.001
	Vehicle Repair Workers	2	754	45.63 (41.92, 49.34)	80.2%	<0.001
	Cleaners	2	692	57.72 (47.44, 68.01)	86.6%	<0.001
	Teachers	5	2,254	50.43 (28.89, 71.98)	99.2%	<0.001
Cloth weavers	1	660	44.10 (40.31, 47.88)	98.2%	<0.001	
Total	35	14,243	55.05 (49.34, 60.76)	98.2%	<0.001	

analysis was done using the country and study population to reduce the random heterogeneity between the estimates of the primary studies.

## Results

### Literature searching outcomes

A total of 970 articles were obtained from several international web databases, including Web of Science, PubMed, Google Scholar, African Journals Online (AJOL), and Science Direct. After excluding redundant studies, 350 studies remained, which were chosen for full title and abstract screening. The remaining 130 studies were assessed for full-text articles after 490 researchers had their titles and abstracts removed. After the full text was reviewed 95 items were deleted for further reasons. This systematic review and meta-analysis study included 35 articles [20–54] with 14,243 study participants as part of its inclusion criteria. Overall study selection process was represented by the following flow diagram (Fig. 1).

### Description of included studies

The characteristics of the review, which include the publication year, sample size, study design, study country, and, study population are all compiled in Table 1. All included studies were cross-sectional study designs, with sample sizes ranging from 80 in Ghana [29] to 1062 in Nigeria [21]. The studies were published from 2010 to 2023.

In this systematic review and meta-analysis, a total of 14,243 participants were included to estimate the pooled prevalence of occupational-related low back pain. The thirty five studies were carried out across sub-Saharan African nations: eighteen (55.82%) articles [20, 23, 24, 26, 32, 34–40, 43, 44, 48, 50, 53, 54] were conducted

in Ethiopia, six (57.08%) articles [21, 22, 25, 28, 42, 45] were conducted in Nigeria; three (61.48%) articles [27, 33, 46] were conducted in Uganda; three (55.55%) articles [30, 47, 49] were conducted in South Africa, two (46.23%) articles [41, 51] were conducted in Tanzania, two (34.48%) articles [29, 31] were conducted in Ghana, and one (60.5%) article was conducted in Cameroon [52].

All of the articles were re-evaluated by independent evaluators before any analysis, and the studies were fit in terms of quality (quality score ranged from 5 to above points). The description of the included studies is presented in the following table. (Table 1).

### The pooled prevalence of low back pain in sub-saharan Africa

There were a total of 14,243 study participants included in the thirty-five studies that were used to estimate the pooled prevalence of occupational-related low back pain for the current study. The forest plot result of the thirty-five included studies showed that the overall pooled prevalence of occupational-related low back pain among the working populations in sub-Saharan Africa was (55.05% [95% CI: 49.34, 60.76]), (Fig. 2).

### Sub-group analysis

Given the significant heterogeneity observed among the reviewed articles, we conducted a sub-group analysis to examine the underlying causes of heterogeneity between studies. This analysis focused on the study country and study population. As a result, based on country, the highest estimates of the pooled prevalence of low back pain was seen in Uganda at (61.48% [95% CI: 40.39, 82.57]). Whereas, the lowest pooled estimate was seen in Ghana

**Table 3** Sensitivity analysis for the prevalence of low back pain in Sub-saharan Africa

S/N	Study omitted	Effect size	(95% CI)
1	Solomon et al.	55.27	(49.42, 61.12)
2	Samuel et al.	55.71	(50.09, 61.32)
3	Aweto et al.	54.42	(48.68, 60.17)
4	Mekonnen et al.	54.60	(48.79, 60.41)
5	Tolera et al.	55.02	(49.16, 60.89)
6	Ihegihu et al.	54.71	(48.90, 60.51)
7	Mekonnen T et al.	55.03	(49.16, 60.91)
8	Aleku et al.	55.50	(49.70, 61.30)
9	Johnson et al.	54.86	(48.99, 60.72)
10	Oppong-Yeboah et al.	55.87	(50.12, 61.62)
11	Chongo-Faruk et al.	55.65	(49.89, 61.42)
12	Ametepheh et al.	55.42	(49.59, 61.26)
13	Beyene et al.	55.66	(49.93, 61.39)
14	Ssempebwa et al.	54.24	(48.58, 59.89)
15	Tamene et al.	55.27	(49.42, 61.11)
16	Kibret et al.	54.74	(48.91, 60.57)
17	Daba Wami et al.	54.83	(48.96, 60.68)
18	Lette et al.	55.38	(49.54, 61.22)
19	Melese et al.	55.14	(49.29, 60.97)
20	Dagne et al.	54.38	(48.79, 59.96)
21	Regassa et al.	54.68	(48.86, 60.49)
22	Nilahi et al.	56.18	(50.91, 61.45)
23	Sumaila et al.	54.83	(49.01, 60.65)
24	Kebede et al.	54.46	(48.74, 60.18)
25	Beyen et al.	55.09	(49.23, 60.95)
26	Nottidge et al.	55.43	(49.60, 61.25)
27	Munab al.	54.85	(48.93, 60.76)
28	Dlungwane et al.	54.93	(49.10, 60.77)
29	Mekonnen H et al.	54.80	(48.94, 60.65)
30	Tafaune et al.	54.52	(48.74, 60.30)
31	Abebaw et al.	55.38	(49.50, 61.26)
32	Gothey et al.	54.46	(48.69, 60.23)
33	Gweha et al.	54.69	(48.87, 60.50)
34	Ayane et al.	55.42	(49.58, 61.25)
35	Terfe et al.	55.38	(49.51, 61.24)
Combined		55.05	(49.34, 60.76)

at (34.48% [95% CI: 17.96, 51.01]). Subgroup analysis based on the study population of hairdressers, bank workers, health workers, vehicle repair workers, cleaners, teachers and, cloth weavers. The highest pooled prevalence of occupational-related low back pain was found to be among bank workers (66.48% [95% CI: 53.01, 79.95]). Whereas, the lowest pooled estimate was seen among cloth weavers workers (44.10% [95% CI: 40.31, 47.88]) (Table 2).

#### Sensitivity analysis

In addition to conducting sub-group analyses, excluding every study, we conducted a sensitivity analysis to look into the source of heterogeneity. According to this analysis, the evaluation of the studies as a whole was

not statistically affected by the removal of one study (Table 3).

#### Meta-regression

In addition to conducting sub-group and sensitivity analyses, meta-regression was performed to detect sources of heterogeneity by country, publication year, and sample size. The meta-regression results revealed no apparent source of heterogeneity in publication year ( $P$ -value=0.76), country ( $P$ -value=0.86, and sample size, ( $P$ -value=0.83) (Table 4).

#### Publication bias

The distribution of occupational related low back pain was examined for asymmetry through a visual inspection of the forest plot presented as a funnel plot. Furthermore, Egger's and Begg regression test results demonstrated the non-existence of publication bias at ( $p$ =0.59) and, ( $p$ =0.86) respectively. (Fig. 3).

#### Discussions

Currently, Low back pain represents a significant public health concern, as well as an economic and social issue. Its effects are widespread, affecting diverse populations globally without discrimination [55, 56].

The current study was conducted to determine the pooled prevalence of occupational-related low back pain in Sub-Saharan Africa (2010–2023). In this study, a total of 14,243 study participants, regardless of their occupation categories, were included in the 35 selected articles. The current study found that the prevalence of low back pain among the sub-Sahara working population ranged from 44.1 to 66.5%, which was lower than the finding of another study conducted in Saudi Arabia, which reported the prevalence of low back pain in different professional groups ranged from 64 to 89% [57].

Furthermore, the current study found that the pooled prevalence of occupational-related low back pain was (55.05% [95% CI: 49.34, 60.76]), which was relatively lower than the finding of another study conducted in Dhaka City, which reported a pooled prevalence of 62% of low back pain, study conducted in Malaysia, which reported a pooled prevalence of 60% low back pain, and a study conducted in India, which reported a pooled prevalence of 61% of low back pain [58–60].

However, the pooled prevalence of low back pain in the present review is higher than a systematic review conducted in Latin America 31.3%, a study conducted in the United Kingdom 36.1%, and a study conducted in Spain 20% [12, 61, 62].

A reasonable interpretation of the elevated pooled prevalence of low back pain in sub-Saharan Africa is that this condition is often regarded as a lower priority in economically disadvantaged nations within the region.

**Table 4** Meta-regression analysis based on publication year, country, and sample size of the studies in sub-saharan Africa

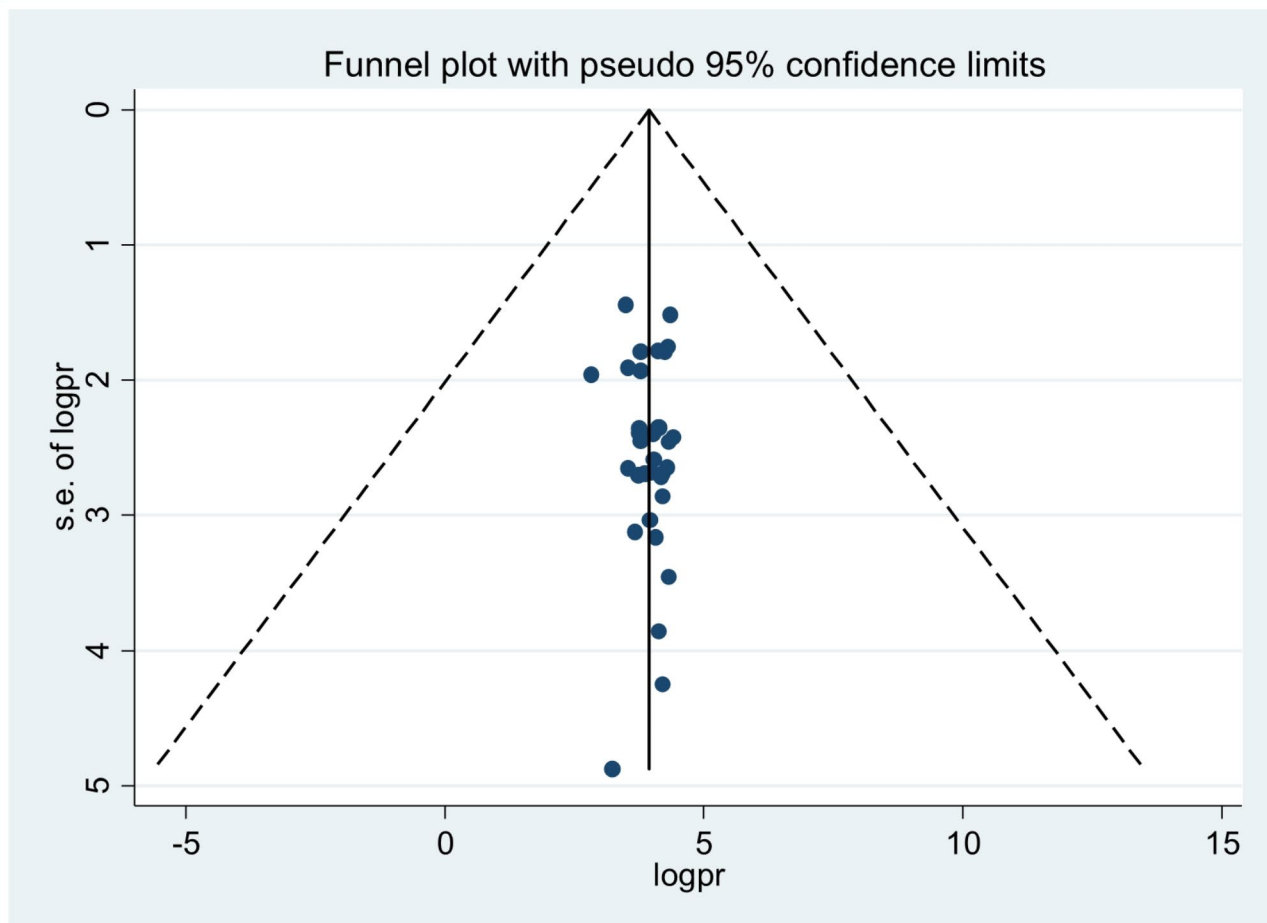
Source of heterogeneity	Coefficient	Standard error	P-value
Year of Publication	1.04	0.13	0.76
Country	0.96	0.21	0.86
Sample size	0.99	0.01	0.83

Consequently, it tends to receive less focus compared to other health concerns, as the governments prioritize more immediate and life-threatening issues, particularly infectious diseases [63]. The other reason is that the difference may be related to the breadth of the study or discrepancies in the application of engineering and administrative control measures, insufficient awareness of occupational hazards, and levels of physical activity.

The result of sub-group analysis by country showed that the pooled prevalence of low back pain was almost similar across sub-Saharan African countries. Thus far, there has been a relatively higher pooled prevalence of low back pain found in Cameroon (60.50% with a 95%CI: 61.89%, 73.10%), followed by Nigeria (57.08% with a 95% CI: 41.25%, 72.90%), and the highest prevalence of low

back pain is reported in a study conducted in Uganda, out of all thirty-five studies included in this systematic review and meta-analysis study.

The prevalence of low back pain among the bank workers was high (66.48% [95% CI: 53.01, 79.95]) after a sub-group analysis was performed. Which was relatively consistent with the work done in Saudi Arabia and Iran which found that the prevalence of low back pain was 65.0% and 61.2%, respectively [64, 65]. The high prevalence of low back pain among bank workers could result in problems with day-to-day activities and performance at work, a significant economic burden, and the cause of personal hardship. It also reduces the productivity of employees by challenging them to perform their tasks efficiently, resulting in frequent absences that can disrupt workflow and impact overall team performance; workforce absenteeism affects staffing levels, customer service, and operational continuity, affecting the quality of customer service by making it more difficult for bank employees to maintain a positive demeanor, answering queries, and providing efficient service and costs for

**Fig. 3** Funnel plots for publication bias of low back pain in Sub-Saharan Africa

healthcare, resulting in stress, anxiety, frustration, and affecting their overall well-being.

Moreover, the pooled prevalence of low back pain decreased in cloth weavers workers (44.10% [95%CI: 40.31, 47.88]), after sub-group analysis was performed based on study occupations. There was variation in the prevalence of low back pain among different study populations or occupations. The variation may be due to differences in occupation or working environments or differences in the implementation of control measures and safety practices.

In general, the prevalence of work-related low back pain remains a significant concern for health within the occupational setting. Consequently, it is essential to establish occupational health and safety protocols, which include conducting risk assessments to identify preventive strategies, organizing the implementation of these health and safety measures, ensuring proper health surveillance, delivering comprehensive information and training regarding occupational health and safety, executing the necessary health and safety measures, and evaluating the outcomes of these interventions to mitigate the incidence of work-related low back pain [66].

#### Strengths and limitations of the study

This research represents a pioneering systematic review and meta-analysis aimed to estimate the overall prevalence of occupational-related low back pain within the working population of Sub-Saharan Africa. Nonetheless, the articles included exhibited an uneven distribution of occupational types. Additionally, certain countries in Sub-Saharan Africa were not represented in the prevalence data due to a scarcity of studies conducted in those regions. Furthermore, the exclusive reliance on English-language publications may restrict the comprehensiveness of the findings.

#### Conclusions

In conclusion, this review showed high prevalence of low back pain among working population in sub-Saharan Africa. It is recommended that working population be provided with and trained on ergonomics, physical exercise, and behavioral change, to lessen the impact of LBP. In addition, it is suggested that policymakers and administrators ought to gain awareness of LBP to put existing preventive and control measures into action. Moreover, Policymakers integrate and strengthen low back pain prevention and management strategies into the country's health system management guidelines and implement existing low back pain prevention and control measures. Prophylactic management and therapeutic strategies for people with low back pain should also be endorsed.

#### Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12995-024-00438-1>.

Supplementary Material 1

Supplementary Material 2

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#### Author contributions

Authors' contribution Y.A.A. writing- original draft data, writing review and editing, data curation, methodology, conceptualization, formal analysis, and software. N.A.G. formal analysis, validation, investigation, visualization, conceptualization, and data curation, K.A.G. writing-review and editing, validation, investigation, visualization, formal analysis, and software. Finally, all authors reviewed and approved the final version of the manuscript.

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#### Data availability

No datasets were generated or analysed during the current study.

#### Declarations

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare no competing interests.

#### Conflicting interests

No potential conflicts of interest.

#### Ethical approval

Not applicable.

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Not applicable.

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