Review Article

Environmental Health Risks, Community Experiences, and Healthcare Access in Oil-Producing Low- and Middle-Income countries: A Scoping Review Protocol

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The exploration of oil and its production have caused significant environmental degradation and posed critical health concerns in low- and middle-income (LMICs) oil producing regions. These regions exposed to gas flaring, oil spills, soil pollution, and contaminated water report various environmental health risks, health impacts as well as barriers to health healthcare access. Nonetheless, existing literature is fragmented both geographically and methodologically and limited to few countries.

The main aim of this scoping review is to systematically map and synthesise multi-regional evidence on environmental health risks, lived community experiences, and healthcare access in oil-polluted localities in LMICs, with contextual grounding in Bayelsa State, Nigeria.

This scoping review will follow the Framework of Arksey and O. Malley as enhanced by the Joanna Briggs Institute and will be reported using PRISMA-ScR. Databases to be searched include PubMed/MEDLINE, Scopus, Web of Science, Embase, Global Health, LILACS, AJOL, and ProQuest Dissertations. Grey literature sources will include UNEP, WHO, World Bank, as well as environmental justice reports. Extracted data will be presented in tabular forms and then summarised in descriptive manner. Eligibility criteria are structured around population, concept, context, and study design. The review will include both qualitative and quantitative studies as well as studies with mixed

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methodologies, exploring the environmental health risks, lived community experiences, and healthcare access in these oil-producing countries.

As data used for this review were available for the public, ethical approval is not required. The findings of this scoping review will inform and essentially support public and environmental health research in oil-rich yet vulnerable settings. Finally, results will be disseminated through peer-reviewed publication, policy brief, conference presentations, and stakeholder engagement in Bayelsa State, Nigeria.

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Introduction

Oil production remains a central driver of economic activity in many low- and middle-income countries. However, it is widely linked with severe environmental damage and adverse health outcomes [1][2]. Many regions undergoing intense oil exploration like the Niger Delta in Nigeria, Amazonian basin in Ecuador, coastal areas of Angola, river systems in Venezuela, and oil fields in Colombia have reported persistent pollution impacts such crude oil spills, gas flaring, refining waste discharge, and pipeline leaks [1].

Years of oil exploration in the Niger Delta of Nigeria has given rise to widespread groundwater contamination and ecosystem loss [3]. Heavy metals and petroleum hydrocarbons have been detected in both drinking water and sediments, raising critical concerns about chronic toxic exposure [3][4]. While gas flaring contributes to sustained air pollution, which is associated with respiratory illnesses and adverse maternal outcomes, social exclusion linked to oil activity has further deepened health inequities in affected communities [5][6]. Comparable patterns are evident in Latin America, for instance, in the Amazon region of Ecuador, oil extraction has been associated with water contamination and increased health risks among indigenous groups [7][8]. Meanwhile, spatial analyses have shown that oil spill sites overlap with inhabited zones, thus increasing long term exposure risk [9]. Reports from Colombia indicate that hydrocarbon pollution has affected aquatic ecosystems and posed risks to food safety and human health [10][11]. In Venezuela, contamination of river systems has raised concern about water stress and ecological decline in oil producing areas [12].

Beyond site specific cases, global assessments confirm that fossil fuel extraction and refining generate measurable health burdens. A global analysis of industrial sites identified significant health impacts linked to oil refineries and related facilities [13]. Reviews of upstream extraction processes highlight consistent associations between petroleum exposure and adverse health outcomes, including cancer risk and blood disorders [1][14]. These findings align with broader evidence that environmental pollution is a major determinant of disease burden worldwide [15].

Oil pollution does not only disrupt ecological systems; it undermines local livelihoods. Fishing and farming communities in affected regions report loss of income due to soil degradation and contaminated water bodies [16]. Such livelihood loss can intensify poverty, limit food security, and reduce capacity to seek health care. The commercial determinants of health framework have emphasised how corporate practices may shape exposure patterns and constrain public health policy responses [17]. In oil producing regions, these structural drivers often interact with weak policy enforcement and limited health system capacity [17].

Regardless of the extensive documentation of environmental contamination, there is still limited synthesis of community level risk and lived experience. Evidence from Ecuador shows that social perceptions of exposure may well differ from technical risk assessments and this shapes health seeking behaviour [7]. Likewise, in Bayelsa State of the Niger Delta, residents engaged in artisanal refining reported heightened perception of health risk yet faced barriers to formal care [18]. Comparable qualitative work in southern Africa has shown that community narratives reveal dimensions of risk not very well captured by environmental monitoring alone [19].

Healthcare access barriers in oil polluted regions are rarely analysed alongside exposure data [20]. In Nigeria, disparities in health funding and infrastructure have constrained progress towards universal health coverage [20]. Environmental exposure may therefore compound existing structural disadvantage. While several reviews have examined ecological damage or toxicology profiles, fewer have mapped methodological approaches used to study health risk, social exclusion, and access to care across oil producing countries [21].

This broad context demonstrates that oil pollution is both an environmental and a public health issue with social and political dimensions. However, the literature remains fragmented across disciplines and regions [22]. The Niger Delta, the Ecuadorian Amazon, and comparable oil producing regions in LMICs represent the most intensively studied contexts, yet a structured evidence synthesis spanning these

regions simultaneously and integrating environmental health risk, lived community experience, and healthcare access has not been conducted [23][24]. A scoping review that spans LMICs is therefore warranted to map evidence across these intersecting domains, clarify conceptual gaps, identify methodological trends, and inform policy responses that support health equity in resource-rich but vulnerable regions [25][26].

Oil-producing regions across both regions frequently experience a paradox of resource wealth and social deprivation [27][6], with oil revenues flowing to governments, corporations, and elites rather than improving living standards in affected communities. For instance, reports from the Niger Delta indicate that oil wealth has not translated into broad-based social gain [27][6], while distrust of oil firms and state agencies due to delays in spill response and inadequate remediation shapes how residents perceive environmental health risk and respond to illness [4].

Research on oil pollution and health spans several designs, including cross sectional surveys, cohort studies, qualitative interviews, case reports, policy analyses as well as relevant doctoral theses. Grey literature from global agencies and civil groups further expands the evidence base [28]. Such heterogeneity limits the feasibility of a narrow systematic review at this stage. The Arksey and O'Malley Framework recognises that scoping reviews are suited to fields with diverse sources and varied study designs [22].

The key concepts within this study are not applied in a uniform manner across regions. Terms such as environmental health risk and community experience are defined through different lenses. Some studies frame risk as toxic exposure measured by biomarkers, while others focus on lived accounts of illness and social harm [1]. Whilst there is no known synthesis that spans oil-producing LMICs with a focus on environmental health risk, lived experience, and healthcare access, existing reviews often address toxicology, ecological damage, or single country contexts [4][21]. Although these reviews provide valuable insight, they do not integrate health risks, health outcomes, and lived experiences with service access across multiple regions. This scoping review allows for the mapping of this broader terrain and the identification of regional gaps [29].

Methods

Methodological approaches within the environmental health and oil pollution literature vary widely. Some studies use spatial mapping of spill sites, while others employ interview-based inquiry or cohort

follow up [9][5]. The review will be reported in alignment with PRISMA-ScR so as to ensure transparency and clarity [30]. Using this approach will support a well-structured account of the nature, range, and extent of the evidence.

For this scoping review, the Arksey and O'Malley Framework will be followed, outlining five fundamental phases which include identifying the research question, identifying relevant studies, study selection, charting the data, and collating and summarising the results [28]. This framework is appropriate for mapping broad and heterogeneous bodies of evidence. The review will incorporate methodological refinements enhanced by the Joanna Briggs Institute and particularly in relation to eligibility criteria, transparent reporting, and data charting. Also, the reporting of the final review will be in alignment with the PRISMA-ScR to ensure clarity, completeness, and reproducibility of the search and eligibility criteria [30]. The eligibility criteria and search terms may be refined during preliminary screening to ensure conceptual consistency with the research questions of the review and modifications will be documented and justified in the final manuscript.

Research Question

What is known from existing literature about the environmental health risks, lived experiences, health outcomes, and healthcare access of people living in localities affected by oil pollution in low- and middle-income countries (LMICs).

Research Sub Questions

1. What environmental health risks and health outcomes have been documented among people living in localities affected by oil-pollution in LMICs?
2. What are the lived experiences of residents living in these oil-polluted localities?
3. What is the access to healthcare like in these localities?
4. What strategies, interventions, or policies responses exist to address environmental health risks, health outcomes, and healthcare access in these regions?
5. What methodological approaches and theoretical frameworks have been used in research on oil pollution and community health in these regions, and what gaps in methodology or theory are evident?

Eligibility Criteria

Inclusion Criteria

Eligibility criteria are structured around population, concept, context, and study design.

Population

Studies involving residents of oil-producing or oil-polluted localities in low- and middle-income countries will be included. This encompasses local groups/rural populations, and communities with exposure to oil pollution arising from exploration, production, refining, transport, or spill events.

Concept

This scoping review will be considering studies (quantitative, qualitative and mixed methods) that explored environmental health risks, community experiences, and healthcare access in oil producing localities.

Context

The review will include oil-polluted areas in low and middle-income countries. These regions were selected because they represent the areas with the largest concentration of oil pollution, where environmental governance is often weak and health system capacity is constrained [1][31].

Exclusion Criteria

Purely laboratory based toxicological studies without community level data will be excluded. Studies restricted to occupational exposure among offshore workers will not be included. Editorials and opinion pieces without empirical data will also be excluded. Materials available exclusively in languages other than English will be excluded. The review team acknowledges that this may introduce a degree of language bias and could limit the representation. This will be noted as a limitation in the final review report in accordance with the PRISMA extension for Scoping Reviews (PRISMA-ScR) reporting guidelines

Whilst there is a substantial literature on oil pollution and health in high-income contexts such as the United States Gulf Coast (for example Deepwater Horizon), the North Sea, and Alberta in Canada, these settings differ fundamentally in terms of regulatory enforcement, health system strength, and community political power [32]. Therefore, high-income country contexts will be excluded.

Types of Sources

The review will include qualitative studies, quantitative observational studies, mixed methods research, participatory research, and relevant grey literature. Eligible grey literature may include policy reports, agency assessments, environmental justice documentation as well as doctoral theses and dissertations. The inclusion of such materials goes beyond what would be captured through academic database searches alone and is essential to map the full range of policy and strategy responses.

Information Sources

A comprehensive search will be conducted across major electronic databases. These will include PubMed or MEDLINE, Scopus, Web of Science, Embase, Global Health, African Journals Online (African Journals Online), LILACS, and ProQuest Dissertations, Theses (ProQuest). Screening of titles and abstracts will be undertaken using Rayyan and reference management will be conducted using Zotero. Grey literature will be identified using targeted searches (UNEP, WHO, World Bank, PAHO, Amnesty International, Human Rights Watch, Friends of the Earth, and Global Witness), specialist grey literature search engines (Policy Commons and MedNar), and Google Scholar searches by using search terms combined with 'filetype-pdf' to retrieve documents not indexed in academic databases.

Search Strategy

The search strategy will combine controlled vocabulary terms and free-text keywords related to oil pollution, health risk, health outcome, community experience, healthcare access, and policy responses. Boolean operators will be used to structure the search [33].

The search terms will be adapted for each database using relevant subject headings where available (MeSH, Emtree). No initial restriction on study design will be applied. Date limits will be set from the year 2000 to 2026 unless preliminary screening reveals a sparse data volume and full electronic search strategy for at least one database will be provided in Appendix I.

Study/Source of Evidence Selection

All identified records will be exported to Zotero for duplicate removal and then imported into Rayyan for screening. Study selection will occur in two stages: title and abstract screening, followed by full text review.

Screening will be led by the primary reviewer (AP). Prior to formal screening, a calibration exercise will be conducted on a sample of 50 records (approximately 10% of the anticipated yield), screened independently by AP and discussed with supervisors (LD and PA) to ensure consistent application of eligibility criteria. Suggestions from Rayyan that are AI-assisted will also be used to support efficiency. AP will screen all records during formal screening, and uncertain or borderline cases will be flagged and discussed with LD and/or PA for resolution. A sample of excluded records will be checked by a supervisor to provide quality assurance. This approach is consistent with JBI guidance for scoping reviews, which does not require full dual independent screening, provided quality assurance processes are in place [34]. Also, the reasons for exclusion at full-text stage will be stated, and the selection process will be reported using a PRISMA-ScR flow diagram. Fig. 1 schematically illustrates the screening process.

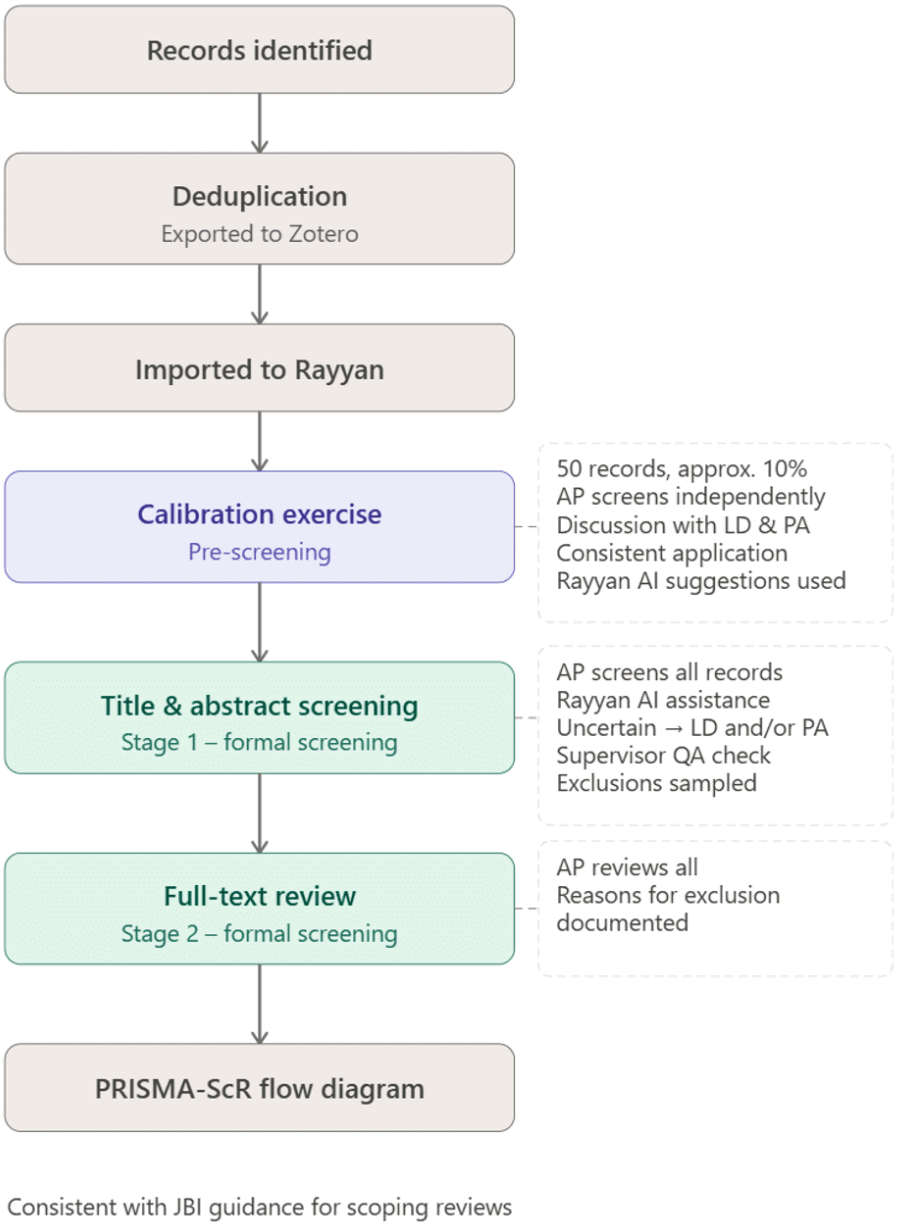

Figure 1. Schematic illustration of the screening process.

Data Extraction

A data extraction template/charting form will be developed in line with guidance from the Joanna Briggs Institute [34]. The form will be piloted on five to ten included studies to ensure clarity and consistency. Revisions will be made where necessary. The form is provided in Appendix IV, with each field cross-referenced to the relevant research sub-question.

Data extraction will be conducted by AP. But a supervisor (LD or PA) will check a sample of completed extraction forms for consistency and accuracy, in line with proportionate quality assurance for scoping reviews [34]. Referencing and bibliography will be managed using Zotero. Where information is unclear or incomplete, this will be noted explicitly as 'not reported' in the data extraction form.

Assessment of methodological quality

As scoping reviews distinct from conventional systemic reviews, they do not usually make assessment of methodological quality or bias risk of included studies [34]. This is because the purpose of scoping reviews is not to produce results that have been screened for synthesis or critical appraisal, instead, they are aimed at producing an overview of evidence [35]. Thus, this scoping review will not conduct methodological quality or bias risk assessment of studies included.

Data analysis and presentation

The data extracted will be organised and presented in form of tables. Also, additional visual representations will be incorporated to enhance data presentation where appropriate. Afterwards, a comprehensive descriptive analysis of the extracted data will be undertaken, and the findings will be narratively tabulated, demonstrating evidence distribution based on setting, study design, population, and main themes identified during the charting of data.

Furthermore, a policy analysis component will be conducted to synthesise evidence on governance responses, regulatory frameworks, legal actions, and advocacy strategies. This will draw on a stakeholder analysis approach to map the types of actors involved in policy responses (state, corporate, civil society, community), their interests, and the outcomes of their interventions. Where sufficient evidence exists, a political economy lens will be applied to examine why certain policy responses have succeeded or failed in specific regional contexts. This approach has been used in comparable reviews of environmental governance in resource-rich settings and will enable the review to move beyond descriptive mapping of policies to critical analysis of their implementation and equity implications [36][37].

Ethical Approval

Ethical approval is not required for this review, as it involves analysis of publicly available literature and does not include primary data collection.

Discussion

This scoping review will provide a structured cross-regional synthesis of evidence on environmental health risks, health outcomes, lived experiences, and healthcare access in oil-polluted localities across in low- and middle-income countries. By gathering literature from multiple oil-producing nations instead of focusing on a single country or region, the review will enable comparative analysis and identification of both systemic differences in these regions as well as shared patterns. Such comparison is essential since environmental exposure, social context, and health system capacity interact differently across various settings [38][39]. Although, there are a few similar reviews done in LMICs settings, however, these focused on single-country or region basis only. A 2025 scoping review by [40] focused specifically on the Niger Delta, and related reviews by [3] and others have similarly remained within single-country or single-region frameworks. The present review adds value over these existing works by spanning multiple regions simultaneously to enable comparative analysis, integrating environmental health risk, health outcomes, lived experiences, and healthcare access within a single synthesis, and determining what new evidence has emerged. The review is designed primarily to inform the conceptual framing and methodological design of the lead author's doctoral fieldwork in Bayelsa State, Nigeria.

This review will ensure that the subsequent primary fieldwork is targeted, methodologically rigorous, and directed at genuine research questions that current evidence is limited to answer. This aspect of the scoping review is distinct and as well complementary to its contribution to the wider academic literature on oil pollution and community health. Also, methodologically, it will map the predominant research designs and philosophical frameworks used in this field, identifying where longitudinal, participatory, or theoretically informed approaches are underrepresented.

Oil-producing localities across LMICs regions often experience a paradox of resource wealth and social deprivation [27][6]. Therefore, by synthesising evidence on environmental health risks, health outcomes, lived experiences, and healthcare access, this review will highlight how environmental exposure intersects with social and health system inequity. The findings will thus support policy dialogue and academic debate on the distribution of environmental health risk and access to care in resource rich yet vulnerable settings. The findings will also support stakeholder engagement in Bayelsa State, the wider Niger Delta, and cross-regional application.

Limitations

This Scoping review acknowledges some limitations. First, language bias, which may exclude important local-language papers, affecting the representation of evidence. Second, limited access to some grey literature, especially older reports, may limit completeness of data. Also, diverse designs of study and contexts will constrain direct comparisons as well as publication bias may favour studies with positive findings, while community and indigenous perspectives may be underrepresented.

Appendix I. Full Database Search Strategy

Search String:

("oil pollution" OR "oil spill" OR "petroleum contamination" OR "gas flaring" OR "oil extraction" OR "crude oil")

AND

("health risk" OR "environmental health" OR "health outcomes" OR "health impacts" OR "community experience" OR "lived experience")

AND

("healthcare access" OR "health services accessibility" OR “Health services availability” OR "health seeking behaviour" OR "barriers to care")

AND

("Nigeria" OR "Angola" OR "Gabon" OR "Cameroon" OR "Chad" OR "Equatorial Guinea" OR "South Sudan" OR "Congo" OR "Ghana" OR "Côte d'Ivoire" OR "Sudan" OR "Algeria" OR "Libya" OR "Ecuador" OR "Peru" OR "Colombia" OR "Brazil" OR "Bolivia" OR "Venezuela" OR "Trinidad" OR "Iraq" OR "Iran" OR "Yemen" OR "Syria" OR "Mexico" OR "Guyana" OR "Kazakhstan" OR "Azerbaijan" OR "Turkmenistan" OR "Uzbekistan" OR "India" OR "Pakistan" OR "Myanmar" OR "China" OR "Indonesia" OR "Malaysia" OR "Vietnam" OR "Timor-Leste" OR "Russia" OR "Sub-Saharan Africa" OR "Niger Delta" OR "Latin America" OR "Ecuadorian Amazon" OR "Low-income countries" OR "Middle-income Countries" OR "Developing countries")

Filters: Humans; English; Published 2000-2026.

Notes:

- Adapted for each database (Scopus, Web of Science, Embase, Global Health, AJOL, LILACS, ProQuest Dissertations) using controlled vocabulary (MeSH, Emtree) where appropriate.
- Boolean operators and truncation symbols adjusted per platform.
- Grey literature sources searched using keywords and site-specific search functions (UNEP, WHO, World Bank, PAHO, Amnesty International, Human Rights Watch, environmental justice NGO reports).

Appendix II. Screening Form (Title/Abstract)

Reviewer ID: _____

Study ID: _____

Date: _____

Screening Checklist

Screening Item	Response (Yes/No/Unclear)	Notes
Is the study set in a geographical area impacted by oil extraction or oil pollution?		
Are participants indigenous, rural, or residents exposed to oil pollution?		
Does the study examine environmental health risks and/or health outcomes?		
Does the study report community lived experiences?		
Does the study examine healthcare access, utilisation, or barriers?		
Is the study context within low- and middle-income countries?		
Is the study type qualitative, quantitative, mixed-methods, or participatory?		
Does the study include methodological approaches and theoretical frameworks?		
Does the study include policy/advocacy documents relevant to environmental health or healthcare access?		
Exclude: purely lab-based toxicology, offshore occupational studies, or high-income country context?		

Decision: Include / Exclude / Unsure

Comments: _____

Appendix III. Full-Text Screening Checklist

Reviewer ID: _____

Study ID: _____

Date: _____

Full-Text Screening Checklist

Screening Criterion	Response (Yes/No)	Notes / Justification
Study set in a geographical area impacted by oil extraction/pollution in LMIC		
Population includes people living in localities affected by oil extraction/pollution		
Study addresses environmental health risks or health outcomes		
Study reports community lived experiences		
Study examines healthcare access, utilisation, or barriers to care		
Study design is qualitative, quantitative observational, mixed-methods, participatory, or policy/advocacy document relevant to the review questions		
Full text available in English		
Exclusion criteria met: lab-only toxicology, offshore occupational only, high-income country context, or policy/advocacy document with no empirical or descriptive content relevant to the review questions		

Final Inclusion Decision: Include / Exclude

Comments / Rationale: _____

Appendix IV. Data Extraction Form Template

Reviewer ID: _____

Study ID: _____

Date Extracted: _____

Data Extraction Form (Cross-Referenced to Research Questions)

Data Item	Details / Notes	Linked Research Question
Author(s)		All
Year of Publication	2000 to 2026	All
Country / Region	Specify: Low- and middle-income countries	All
Study Title		All
Study Design / Methodology	Qualitative, quantitative, mixed-methods, participatory, grey literature, policy/advocacy document, PhD thesis	All
Philosophical / Theoretical Framework	Positivism, realism, constructionism, pragmatism; theoretical lens used (e.g., environmental justice, political ecology, social determinants)	RQ5
Sample Size / Population	Specify: indigenous, rural, peri-urban locality residents, policymakers, healthcare workers, etc.	All
Type of Oil Pollution Exposure	Oil spills, gas flaring, pipeline leak, artisanal refining, produced water, other	RQ1
Environmental Health Risks	Hazard type; affected media (air/water/soil/food); contaminants identified	RQ1
Documented Health Outcomes	Respiratory, dermatological, waterborne illness, mental health, chronic disease, reproductive health, mortality; measurement method	RQ1
Community Lived Experiences	Lived experiences of pollution, illness, displacement, livelihood loss, social exclusion, environmental injustice, cultural harm, psychosocial impacts	RQ2
Healthcare Access Findings	Availability, utilisation, barriers, facilitators, out-of-pocket costs, infrastructure, health-seeking behaviour	RQ3
Policy, Strategy and Governance Responses	Government policy, corporate responses, regulatory frameworks, advocacy outcomes, legal/environmental justice actions;	RQ4

Data Item	Details / Notes	Linked Research Question
	differences between countries/regions noted	
Key Methodological Approach	Interviews, surveys, GIS, biomonitoring, participatory mapping, longitudinal assessment, document analysis	RQ5
Systematic Differences Across Countries/Regions	Note any patterns, tendencies, or contrasts documented between countries or continents	All
Identified Gaps / Limitations	Research design gaps, data scarcity, lack of longitudinal follow-up, weak community participation, regional bias, policy/advocacy gaps	All
Notes / Comments	Additional context, conflicts of interest, funding source	—

Instructions:

- Extract all relevant data consistently across studies and grey literature sources.
- Use exact wording for qualitative findings where possible, paraphrase only where necessary for clarity.
- Highlight methodological strengths and weaknesses to inform the methodological mapping component of the synthesis.

Appendix V. PRISMA-ScR Compliance Checklist

PRISMA-ScR Checklist

Section / Item	Checklist Item	Reported (Yes/No)	Page / Location
Title	Identify the report as a scoping review.	Yes	1
Abstract	Structured summary of background, objective, eligibility, sources, charting, synthesis.	Yes	2
Introduction	Rationale for the review.	Yes	3-5
Research Questions	Explicit statement of research questions.	Yes	6
Methods: Eligibility	Eligibility criteria (population, concept, context, study type).	Yes	6-7
Methods: Sources	Information sources (databases, grey literature including policy/advocacy sources).	Yes	7
Methods: Search	Full search strategy for at least one database provided in Appendix.	Yes	8
Methods: Selection	Selection of sources of evidence (two-stage process, calibration, disagreement resolution).	Yes	8
Methods: Data Extraction/Charting	Data extraction & charting process and cross-reference to research questions.	Yes	9
Methods: Synthesis	Synthesis approach: descriptive mapping, policy analysis	Yes	10
Results	PRISMA-ScR flow diagram; characteristics of sources; synthesis of results.	Yes	8-9
Discussion	Summary of evidence; limitations; and implications for research, policy, and practice.	Yes	10-11
Funding	Sources of funding declared (Petroleum Technology Development Fund, PTDF).	Yes	12

Instructions:

- Complete the checklist during manuscript preparation to ensure compliance with PRISMA-ScR standards.
- Page numbers should reflect the final draft layout.
- Mark 'Yes' once each item is fully reported in the manuscript.

Statements and Declarations

Funding

Petroleum Technology Development Fund (PTDF), Nigeria.

Potential competing interests

No potential competing interests to declare.

Authors' Contributions

Conceptualization: AP with added ideas from LD, and PA; Project Administration: AP; Resources: AP, LD, and PA; Supervision: LD and PA; Writing: Drafts: AP.

References

1. a, b, c, d, e *Johnston JE, Lim E, Roh H (2019). "Impact of Upstream Oil Extraction and Environmental Public Health: A Review of the Evidence." Sci Total Environ. **657**:187–99.*
2. ^ *Aker HA, Akalpler E (2025). "The Global Impact of Oil Revenue Dependency: Analysis of Key Indicators from Leading Energy-Producing Countries." Energies. **18**(22):6057.*
3. a, b, c *Olukaejire SJ, Ifiora CC, Osaro PA, Osuji LC, Hart AI (2024). "Petroleum Exploration in the Niger Delta Region and Implications for the Environment: A Review." J Energy Res Rev. **16**(5):19–29. doi:10.9734/jenrr/2024/v16i5350.*
4. a, b, c *Ezeh CC, Onyema VO, Obi CJ, Moneke AN (2024). "A Systematic Review of the Impacts of Oil Spillage on Residents of Oil-Producing Communities in Nigeria." Environ Sci Pollut Res. **31**(24):34761–86.*

5. ^ a b Oghenetega OB, Okunlola MA, Ana GR, Morhason-Bello O, Ojengbede OA (2022). "Exposure to Oil Pollution and Maternal Outcomes: The Niger Delta Prospective Cohort Study." Plos One. **17**(3):e0263495.
6. ^ a b c d Nkem AC, Devine S, Ogaji DS, Topp SM (2024). "Economic Exclusion and the Health and Wellbeing Impacts of the Oil Industry in the Niger Delta Region: A Qualitative Study of Ogoni Experiences." Int J Equity Health. **23**(1):183.
7. ^ a b Maurice L, López F, Becerra S, Jamhoury H, Le Menach K, Devier MH, Budzinski H, Prunier J, Juteau-Martineau G, Ochoa-Herrera V, Quiroga D (2019). "Drinking Water Quality in Areas Impacted by Oil Activities in Ecuador: Associated Health Risks and Social Perception of Human Exposure." Sci Total Environ. **690**:1203–17.
8. ^ Uyttersprot T, Janssens F, Fernandes D, Zhang WH (2022). "Exploring the Link Between Oil Exploitation and Cancer in the Indigenous Population of Ecuador: A Scoping Review." Int J Environ Res Public Health. **19**(5):2674.
9. ^ a b Rivera-Parra JL, Vizcarra C, Mora K, Mayorga H, Dueñas JC (2020). "Spatial Distribution of Oil Spills in the North Eastern Ecuadorian Amazon: A Comprehensive Review of Possible Threats." Biol Conserv. **252**:108820.
10. ^ Espana VA, Pinilla AR, Bardos P, Naidu R (2018). "Contaminated Land in Colombia: A Critical Review of Current Status and Future Approach for the Management of Contaminated Sites." Sci Total Environ. **618**:199–209.
11. ^ Velasco-Santamaría YM, Corredor-Santamaría W, Torres-Tabares A (2019). "Environmental Pollution by Hydrocarbons in Colombia and Its Impact on the Health of Aquatic Ecosystems." InPollution of Water Bodies in Latin America: Impact of Contaminants on Species of Ecological Interest. Cham: Springer International Publishing. pp. 229–54.
12. ^ Valjarević A (2025). "Oil Field Impacts on Venezuela's Rivers and Water Stress With Environmental Challenges." J South Am Earth Sci. **164**:105675.
13. ^ Oberschelp C, Pfister S, Hellweg S (2023). "Global Site-Specific Health Impacts of Fossil Energy, Steel Mills, Oil Refineries and Cement Plants." Sci Rep. **13**(1):13708.
14. ^ Ramírez MI, Arévalo-Jaramillo AP, Espinosa CI, Bailon-Moscoso N (2022). "Is the Anemia in Men an Effect of the Risk of Crude Oil Contamination?" Toxicol Rep. **9**:480–6.
15. ^ Gyawali K, Acharya P, Poudel D (2023). "Environmental Pollution and Its Effects on Human Health." Interdiscip Res Educ. **8**(1):84–94.

16. ^Adeola AO, Akingboye AS, Ore OT, Oluwajana OA, Adewole AH, Olawade DB, Ogunyele AC (2022). "Crude Oil Exploration in Africa: Socio-Economic Implications, Environmental Impacts, and Mitigation Strategies." Environ Syst Decis. **42**(1):26–50.

17. a, bGilmore AB, Fabbri A, Baum F, Bertscher A, Bondy K, Chang HJ, Demaio S, Erzse A, Freudenberg N, Friel S, Hofman KJ (2023). "Defining and Conceptualising the Commercial Determinants of Health." Lancet. **401**(10383):1194–213.

18. ^Ephraim-Emmanuel BC, Enembe O, Best O (2022). "Risk Perceptions of Environmental and Health Problems Associated With Artisanal Crude Oil Refining in Bayelsa State, Nigeria." Asian J Environ Ecol. **18**:42–50.

19. ^Ngwenya S, Mashau NS, Mudau AG, Mhlongo SE, Traoré AN (2024). "Community Perceptions on Health Risks Associated With Toxic Chemical Pollutants in Kwekwe City, Zimbabwe: A Qualitative Study." Environ Health Insights. **18**:11786302241260487.

20. a, bEzeaka NB (2025). "Addressing Healthcare Inequalities in Nigeria: A Communication Perspective on Advocacy and Policy Implications." J Adv Res Multidiscip Stud.

21. a, bPaz-Barzola D, Escobar-Segovia K (2025). "Oil Pollution and Public Health: A Bibliometric Review of Trends, Key Contributions, and Future Perspectives." Environ Qual Manag. **34**(3):e70022.

22. a, bEllos DM, Bacosa HP (2025). "A Review of the Multifaceted Impact and Implications of Oil Spills and Marine Disasters in Asia." Discov Oceans. **2**(1):41.

23. ^Anyanwu IN, Beggel S, Sikoki FD, Okuku EO, Unyimadu JP, Geist J (2023). "Pollution of the Niger Delta With Total Petroleum Hydrocarbons, Heavy Metals and Nutrients in Relation to Seasonal Dynamics." Sci Rep. **13**(1):14079.

24. ^Codato D, Peroni F, De Marchi M (2024). "The Multiple Injustice of Fossil Fuel Territories in the Ecuadorian Amazon: Oil Development, Urban Growth, and Climate Justice Perspectives." Landsc Urban Plan. **241**:104899.

25. ^Leuenberger A, Farnham A, Azevedo S, Cossa H, Dietler D, Nimako B, Adongo PB, Merten S, Utzinger J, Winkler MS (2019). "Health Impact Assessment and Health Equity in Sub-Saharan Africa: A Scoping Review." Environ Impact Assess Rev. **79**:106288.

26. ^Garza M, Abascal Miguel L (2025). "Health Disparities Among Indigenous Populations in Latin America: A Scoping Review." Int J Equity Health. **24**(1):119.

27. a, b, cSa'eed ZM (n.d.). "The Dynamic Relationship Between Oil Wealth and Economic Growth: The Case of Nigeria" (Doctoral dissertation).

28. ^a ^b *Arksey H, O'malley L (2005). "Scoping Studies: Towards a Methodological Framework." Int J Soc Res Methodol. **8**(1):19–32.*

29. ^ *Khalil H, Jia R, Moraes EB, Munn Z, Alexander L, Peters MD, Asran A, Godfrey CM, Tricco AC, Pollock D, Evans C (2025). "Scoping Reviews and Their Role in Identifying Research Priorities." J Clin Epidemiol. **181**:111712.*

30. ^a ^b *Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, Moher D, Peters MD, Horsley T, Weeks L, Hempel S (2018). "PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation." Ann Intern Med. **169**(7):467–73.*

31. ^ *Eugenio C, Montoya-Torres J, Akizu-Gardoki O, Urkidi L, Villalba-Eguiluz U, Larrea C, Pappuccio S, Calle-Calderón A, Quirola D (2024). "Environmental Impacts of Oil Extraction in Blocks 16 and 67 of the Yasuní Reserve in the Amazonian Forest: Combined Qualitative and Life-Cycle Assessment." Sci Total Environ. **950**:175189.*

32. ^ *Saba CS, Alola AA, Ngepah N (2025). "Exploring the Role of Governance and Institutional Indicators in Environmental Degradation Across Global Regions." Environ Dev. **54**:101152.*

33. ^ *MacFarlane A, Russell-Rose T, Shokraneh F (2022). "Search Strategy Formulation for Systematic Reviews: Issues, Challenges and Opportunities." Intell Syst Appl. **15**:200091.*

34. ^a ^b ^c ^d *Peters MD, Godfrey C, McInerney P, Khalil H, Larsen P, Marnie C, Pollock D, Tricco AC, Munn Z (2022). "Best Practice Guidance and Reporting Items for the Development of Scoping Review Protocols." JBI Evid Synth. **20**(4):953–68.*

35. ^ *Munn Z, Peters MD, Stern C, Tufanaru C, McArthur A, Aromataris E (2018). "Systematic Review or Scoping Review? Guidance for Authors When Choosing Between a Systematic or Scoping Review Approach." BMC Med Res Methodol. **18**(1):143.*

36. ^ *Newig J, Rose M (2020). "Cumulating Evidence in Environmental Governance, Policy and Planning Research: Towards a Research Reform Agenda." J Environ Policy Plan. **22**(5):667–81.*

37. ^ *Gbadebo A (2025). "Political Economy of Resource Management and Environmental Governance: An Empirical Analysis of Nigeria." Humanit Soc Sci. **32**(4):57–68.*

38. ^ *Brisbois BW, Reschny J, Fyfe TM, Harder HG, Parkes MW, Allison S, Buse CG, Fumerton R, Oke B (2019). "Mapping Research on Resource Extraction and Health: A Scoping Review." Extr Ind Soc. **6**(1):250–9.*

39. ^ *Farnham A, Cossa H, Dietler D, Engebretsen R, Leuenberger A, Lyatuu I, Nimako B, Zabre HR, Brugger F, Winkler MS (2020). "Investigating Health Impacts of Natural Resource Extraction Projects in Burkina Faso, Ghana, Mozambique, and Tanzania: Protocol for a Mixed Methods Study." JMIR Res Protoc. **9**(4):e17138.*

40. ^ *Gbadamosi F, Aldstadt J (2025). "The Interplay of Oil Exploitation, Environmental Degradation and Health in the Niger Delta: A Scoping Review." Trop Med Int Health. **30**(5):351–67.*

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