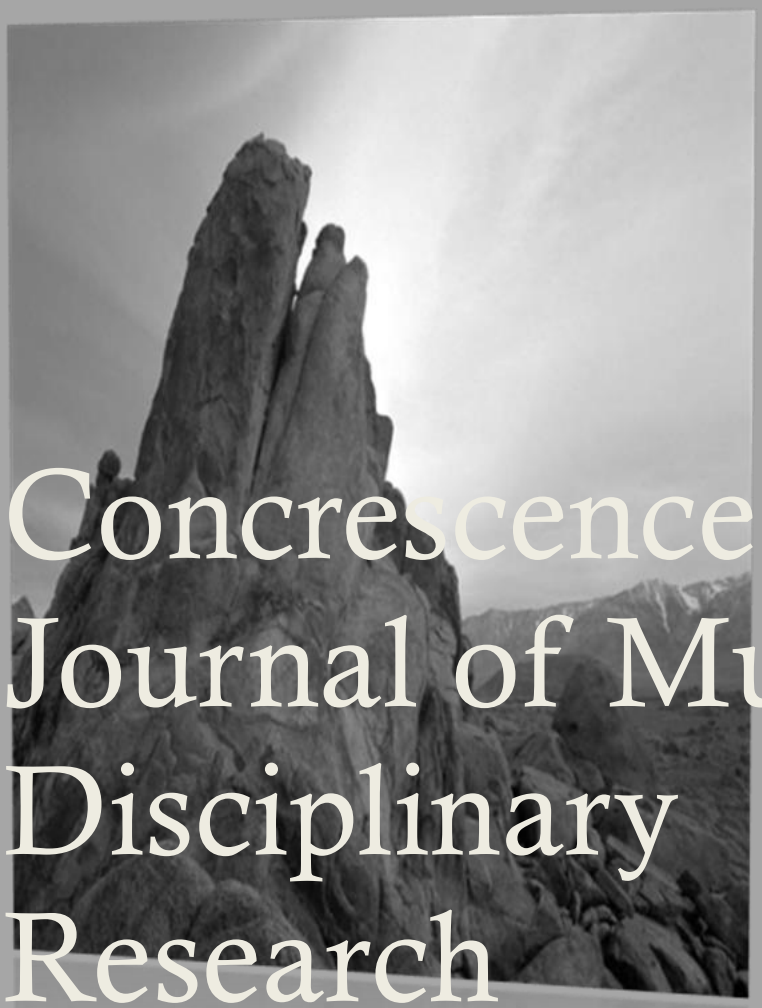

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Oil Spills, Health Risks, and Community Resilience: The Human Security Implications of Shell's Operations in Rivers State

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Abstract
Oil spills remain a significant environmental and human security challenge, particularly in oil-producing regions like Rivers State, Nigeria. The persistent degradation of land, water, and air due to hydrocarbon pollution has severe health implications, erodes community resilience, and heightens insecurity. Despite extensive research on oil spills in the Niger Delta, gaps persist regarding the long-term health effects, community adaptation strategies, and the broader human security implications. This study addresses these gaps by employing mixed-methods, combining quantitative surveys and qualitative interviews with affected communities, policymakers, and industry stakeholders. The study critically examines how environmental degradation undermines economic, food, health, and community security, utilizing the human security theory. Findings reveal a strong correlation between oil spills and increased cancer rates, respiratory ailments, and declining agricultural and fishing livelihoods, exacerbating poverty and social unrest. Unlike previous studies, this research foregrounds community-driven resilience strategies and critiques the inefficacy of existing remediation efforts. It recommends strengthening environmental policies, enhancing healthcare interventions, and integrating human security into Nigeria's national security framework. This study contributes to the literature by bridging empirical gaps on human security dynamics in oil spill-affected regions and proposing actionable policy frameworks for sustainable development.

Keywords: Oil spills, human security, community resilience, health risks, Rivers State

1. Introduction

Oil spills present a significant global environmental challenge with profound implications for human health and community resilience. These incidents, resulting from both accidental discharges and operational failures, release vast quantities of hydrocarbons into ecosystems, leading to extensive contamination of soil, water, and air. The consequences are multifaceted, affecting biodiversity, livelihoods, and the well-being of affected populations (Kadafa, 2012; Ologunorisa, 2021). The frequency and magnitude of oil spills have raised concerns about environmental degradation and public health globally. Notable incidents, such as the Deepwater Horizon spill in the Gulf of Mexico, have underscored the catastrophic potential of such events. The Deepwater Horizon oil spill, which began on April

20, 2010, is considered the largest marine oil spill in the history of the petroleum industry (Graham et al., 2019). The explosion led to discharges between 1,000 and 60,000 barrels of oil per day, and it took responders 87 days to stop the spill, resulting in an estimated 3.19 million barrels of oil leaking into the Gulf (Ramseur, 2010). Over 1,000 miles of shoreline on the Gulf of Mexico, from Texas to Florida, were impacted by the spill (Graham et al., 2011). Studies on the Deepwater Horizon spill have shown that exposure to oil and chemical dispersants can lead to long-term health issues, including respiratory problems and increased cancer risks (Solomon & Janssen, 2010; Peres et al., 2016).

In Africa, the extraction of oil has been both a boon and a bane. While it contributes significantly to the economies of oil-producing countries, it has also led to environmental degradation and social unrest. The Niger Delta region of Nigeria exemplifies this paradox. As one of the most oil-rich areas globally, it has suffered extensively from oil spills over the past decades. These spills have contaminated water bodies, destroyed farmlands, and led to the loss of biodiversity, thereby undermining the livelihoods of local communities (Nwilo & Badejo, 2006; UNEP, 2011). The environmental degradation has led to health crises, loss of livelihoods, and social unrest. The perception of neglect and exploitation by multinational corporations and the government has fueled militancy and criminal activities, further destabilizing the region (Omofonmwan& Odia, 2009; Okoli & Orinya, 2013).

Nigeria's Niger Delta has been a focal point of oil exploration and production since the 1950s. The region's vast reserves have attracted multinational oil companies, with Shell Petroleum Development Company of Nigeria Limited (SPDC) being a prominent operator. However, the environmental cost has been staggering. Decades of oil spills resulting from pipeline corrosion, sabotage, and operational failures have led to severe ecological and human health crises (UNEP, 2011). The health implications of oil spills in the Niger Delta are profound. Studies have documented elevated levels of hydrocarbons in water sources, leading to increased risks of cancers, respiratory problems, and reproductive health issues among the local population (Ordinioha & Brisibe, 2013; Ana et al., 2020). The contamination of soil and water has also compromised agricultural productivity and fishery resources, exacerbating food insecurity and poverty in the region (Ede et al., 2021).

Community resilience in the face of these environmental challenges has been severely tested. The degradation of natural resources has eroded traditional livelihoods, leading to unemployment and social disintegration (Ako et al., 2013). Communities have struggled to adapt to the loss of their environmental base, resulting in increased migration, social conflicts, and a breakdown of social cohesion (Adekola& Mitchell, 2011). Efforts to build resilience have been hampered by inadequate institutional support, lack of effective environmental policies, and limited access to resources for remediation and adaptation (Oviasuyi & Uwadiae, 2010).

The human security implications of Shell's operations in Rivers State are particularly significant. Human security, encompassing economic, food, health, environmental, personal, community, and political security, has been compromised (Ebeku, 2007). The environmental degradation has led to health crises, loss of livelihoods, and social unrest. The perception of neglect and exploitation by multinational corporations and the government has fueled militancy and criminal activities, further destabilizing the region (Eweje, 2006). Despite the extensive literature on oil spills in the Niger Delta, gaps remain in understanding the long-term health outcomes and the effectiveness of remediation efforts. While some studies have focused on the immediate health impacts, there is limited

research on chronic health conditions resulting from prolonged exposure to oil pollution (Ana et al., 2020). Additionally, the effectiveness of community-led resilience strategies in mitigating the adverse effects of oil spills has not been thoroughly examined.

This paper aims to address these gaps by providing a comprehensive analysis of the health risks associated with oil spills, evaluating the resilience strategies employed by affected communities, and assessing the broader human security implications of Shell's operations in Rivers State. By doing so, it seeks to contribute to the existing scholarship by offering new insights into the complex interplay between environmental degradation, health outcomes, and community resilience in the context of oil exploitation.

2. Statement of the Research Problem

The persistent oil spills in Rivers State, Nigeria, have led to severe environmental degradation, profound health risks, and socio-economic instability, particularly in oil-producing communities. Decades of petroleum exploration by multinational corporations, notably Shell, have resulted in widespread contamination of water bodies, soil, and air. Empirical evidence indicates that between 2011 and 2021, over 1,000 oil spill incidents were recorded in Rivers State alone, releasing thousands of barrels of crude oil into the environment (NOSDRA, 2022). The contamination of drinking water sources with hydrocarbons, such as benzene levels exceeding the WHO's permissible limit of 0.001 mg/L, has been linked to increased cancer risks and respiratory complications (UNEP, 2011). Additionally, exposure to oil pollutants has been associated with reproductive disorders, congenital disabilities, and neurological impairments among affected populations. Despite these alarming health outcomes, there is limited research on the chronic effects of prolonged exposure to oil pollution in the region.

Beyond health implications, oil spills have destroyed farmlands and aquatic ecosystems, undermining the livelihoods of fishing and farming communities. The depletion of these resources has intensified poverty, food insecurity, and economic marginalization, exacerbating social tensions. The Nigerian government and Shell's remediation efforts have been widely criticized as ineffective, with UNEP (2011) reporting that environmental restoration in Ogoniland alone would take at least 30 years. The failure to adequately address these issues has fueled community grievances, leading to militancy, vandalism, and conflicts that threaten regional security. Existing studies have largely focused on the immediate environmental consequences of oil spills, with insufficient attention to long-term health risks and community resilience mechanisms. This study seeks to bridge this gap by examining the multidimensional impacts of oil spills on human security in Rivers State and assessing community-led strategies for adaptation and resilience.

3. Conceptual Clarifications

Oil Spills: Oil spills refer to the uncontrolled release of petroleum hydrocarbons into the environment, primarily due to pipeline ruptures, operational failures, equipment corrosion, and sabotage. In Rivers State, repeated spills have severely polluted water bodies, farmlands, and the air, leading to ecological and socio-economic disruptions. While conventional discourse frames oil spills as technical failures or criminal sabotage, a critical perspective reveals them as systemic consequences of weak environmental governance, corporate negligence, and extractive capitalism. The recurrent nature of spills raises questions about regulatory effectiveness, corporate accountability, and the asymmetry of environmental justice in oil-producing communities.

Health Risks: Exposure to oil pollutants has both acute and chronic health implications, disproportionately affecting marginalized communities. Studies have established links between hydrocarbon contamination and respiratory diseases, cancer, kidney dysfunction, and reproductive disorders. In the Niger Delta, benzene exposure is significantly above WHO's safety threshold, increasing leukemia risks (UNEP, 2011). While health studies focus on toxicology and epidemiology, the intersection of environmental pollution, social determinants of health, and institutional neglect remains underexplored. Addressing oil-induced health risks requires a paradigm shift from remedial interventions to proactive, community-driven health security frameworks.

Community Resilience: Community resilience in oil-producing areas extends beyond coping mechanisms to active resistance, adaptation, and transformation. The dominant resilience discourse often emphasizes external interventions, neglecting indigenous knowledge and localized adaptive strategies. In Rivers State, communities have developed informal networks, advocacy platforms, and alternative livelihoods in response to environmental degradation. However, institutional constraints, corporate-induced dependencies, and resource asymmetries hinder long-term resilience. A critical examination of resilience must interrogate power relations, access to environmental justice, and the role of state and non-state actors in sustaining or undermining local capacities for recovery.

Human Security: The traditional approach to oil-related security has largely focused on militarization and corporate liability, neglecting the lived realities of affected communities. This discourse must shift toward a human-centered security paradigm that prioritizes health, environmental justice, and sustainable development. Current remediation strategies often fail to address the long-term socio-economic dislocation faced by spill-affected populations. The persistent neglect of psychosocial well-being, economic stability, and community resilience in policy frameworks renders existing interventions ineffective. A fresh perspective demands integrating local knowledge, participatory governance, and climate resilience into oil spill management. Without embedding human security at the core of oil governance, systemic marginalization and conflict will persist. This argument pushes for a reorientation of security policies from state-centric control to community-centric resilience, ensuring that oil-rich regions are not only protected from environmental hazards but also empowered to thrive beyond extractive economies.

4. Research Methodology

This study employs a mixed-methods approach, integrating both quantitative and qualitative techniques to comprehensively examine the health risks, community resilience, and human security implications of oil spills in Rivers State. The study population comprises residents of Rivers State, which, according to the National Population Commission (NPC, 2022), has a population of 7,476,800. The sample size is determined using Taro Yamane's (1968) formula:

Where:

- n = Sample size
- N = Population size (7,476,800)
- e = Margin of error (0.05)

Applying the formula:

= 400

A sample of 400 respondents is drawn using a multistage sampling technique. A probability sampling approach (stratified random sampling) is used to select affected communities, ensuring representation across key oil-producing areas. Within selected communities, non-probability purposive sampling identifies participants with direct experience of oil spill impacts. Data collection involves structured surveys, key informant interviews, and focus group discussions. Quantitative data is analyzed using descriptive statistics analysis (SPSS), while qualitative data undergoes thematic analysis to uncover patterns in community resilience and health impacts. The mixed-methods approach strengthens the study's validity by triangulating findings across different data sources.

5. Theoretical Framework

This study adopts human security theory as its analytical framework to examine the implications of oil spills on health risks, community resilience, and overall human security in Rivers State. Human security theory, as conceptualized by the United Nations Development Programme (UNDP, 1994), expands the traditional notion of security beyond state-centric threats to include threats to human well-being, such as environmental degradation, health crises, and economic deprivation.

Previous studies have applied human security theory to oil spill-related issues, focusing on environmental security and livelihood disruptions (Onuoha, 2008; Adekola& Mitchell, 2011). However, this study extends the theoretical application by integrating a multidimensional human security perspective, emphasizing health security, food security, and community resilience as central components. Unlike earlier works that primarily assess short-term impacts, this study critically examines the long-term health consequences and adaptive capacity of affected communities, thereby contributing to the literature by broadening the human security lens.

Moreover, while past research has largely critiqued state inaction and corporate negligence, this study interrogates the failure of institutional mechanisms in remediating human security threats. It explores community-led resilience strategies as an alternative security framework. By doing so, it advances human security theory by highlighting local agency and adaptive resilience within vulnerable communities. This nuanced application contributes to theoretical discourse by emphasizing bottom-up approaches rather than solely state-centric responses to oil spill-induced insecurities.

6. Oil Spills on Health Risks, Community Resilience, and Human Security

Oil spills have far-reaching implications on health risks, community resilience, and human security. According to Mitchel et al. (2020), oil spills have global ramifications, affecting ecosystems, economies, and human health. Large-scale spills, such as the Deepwater Horizon disaster in the Gulf of Mexico, resulted in prolonged environmental damage and

severe respiratory illnesses among cleanup workers and nearby residents. Prolonged exposure to hydrocarbons has been linked to increased cancer risks and neurological disorders, yet remediation efforts have remained insufficient, with many impacted populations receiving inadequate compensation. The long-term environmental degradation from oil spills further exacerbates economic losses as fisheries collapse and marine biodiversity dwindles, causing food insecurity for dependent communities. Similarly, studies by Bell & Kendall (2019) highlight that the economic costs of oil spills often outweigh the revenues generated from petroleum extraction, calling into question the sustainability of offshore drilling. The persistent toxicity of spilled crude oil has led to bioaccumulation in marine organisms, contaminating the food chain and endangering human populations reliant on seafood consumption.

Alam & Gopaul (2021) stated that the impact of oil spills in developing regions, particularly in Africa, is more severe due to weak regulatory frameworks and inadequate response mechanisms. Unlike in Western nations, where oil companies are held accountable through litigation and compensation, spills in Africa often go unaddressed for years, leading to the gradual destruction of ecosystems and increased public health concerns. The case of the Mauritius oil spill in 2020 demonstrated the vulnerability of small island nations to oil-related disasters, as the leakage of thousands of metric tons of fuel devastated the nation's coral reefs and tourism sector.

Nwilo & Badejo (2022) averred that oil spills in Nigeria, particularly in the Niger Delta region, have led to irreversible environmental destruction and severe human security challenges. Rivers State, one of the key oil-producing areas, has suffered from repeated spills caused by pipeline corrosion, operational failures, and sabotage. The contamination of water bodies has led to the near-collapse of the region's fishing industry, a primary source of livelihood for local communities. Long-term exposure to benzene, toluene, and other toxic hydrocarbons in crude oil has been linked to increased cancer rates and chronic respiratory diseases in affected populations. The absence of effective cleanup measures and delayed responses by multinational oil companies, particularly Shell Petroleum Development Company (SPDC), has exacerbated community grievances, leading to civil unrest.

In a study by Okonkwo & Agbo (2023), the community resilience in the Niger Delta has been significantly weakened due to repeated exposure to oil pollution. Traditional adaptation strategies such as migration, alternative economic activities, and communal land restoration have been rendered ineffective due to the scale of environmental degradation. The loss of arable land and freshwater resources has led to increased poverty and forced migration, particularly among youth, who either relocate to urban centers or engage in criminal activities for survival. While some non-governmental organizations (NGOs) have attempted to implement community-led resilience initiatives, these efforts remain largely uncoordinated and underfunded. In contrast, Eze & Nnamdi (2020) argue that resilience should not only be measured in economic and environmental terms but also in psychological well-being. Oil-affected communities frequently suffer from collective trauma, depression, and anxiety due to the destruction of their cultural and economic foundations. The psychological toll of oil spills is often overlooked in policy discussions, yet it plays a critical role in determining whether communities can recover from environmental disasters.

Adebayo et al. (2022) emphasised that oil spills pose serious human security threats beyond environmental damage. The persistent neglect by both oil companies and the government has fueled resentment among affected populations, leading to increased militancy and organized crime in the Niger Delta. The rise of groups such as the Niger Delta Avengers, who target oil infrastructure to demand justice, illustrates how environmental degradation can escalate into armed conflict. Similarly, Ekanem (2021) found that the militarization of oil-producing areas has led to widespread human rights abuses, including extrajudicial killings, forced displacement, and sexual violence. The securitization of oil production has transformed Rivers State into a zone of perpetual conflict, where economic interests take precedence over human well-being. The inability of state actors to address the root causes of environmental degradation has resulted in cycles of violence, deepening the humanitarian crisis in oil-impacted regions.

Ajayi (2023) emphasized that the efforts to mitigate the impact of oil spills in Rivers State have been largely ineffective due to a combination of weak governance, corruption, and corporate negligence. The implementation of remediation programs, such as the United Nations Environment Programme (UNEP) cleanup recommendations for Ogoniland, has been marred by delays and inadequate funding. Despite promises by the Nigerian government and Shell to restore polluted areas, progress remains slow, with many communities still lacking access to clean drinking water. The failure of existing environmental policies to prevent further oil spills underscores the need for stronger regulatory oversight and community-driven remediation efforts.

According to Udoh & Akpan (2021), addressing the health risks associated with oil spills requires a multi-sectoral approach that integrates environmental restoration with healthcare interventions. Current health response strategies in the Niger Delta focus primarily on treating immediate illnesses rather than addressing long-term exposure effects. This gap in healthcare policy has left many residents vulnerable to chronic conditions such as leukemia, kidney disease, and neurological disorders. Additionally, Uche (2022) found that existing compensation mechanisms for oil spill victims are grossly inadequate, often failing to reflect the true extent of economic and health-related damages. Many oil companies rely on out-of-court settlements to avoid public scrutiny, leaving communities without proper redress. The lack of comprehensive epidemiological studies further hinders efforts to quantify the full impact of oil-related pollution on public health, limiting the ability of policymakers to develop effective intervention strategies.

Osagie (2023) persisted that improving community resilience in oil-impacted areas requires integrating indigenous knowledge with modern environmental management practices. Traditional methods of land restoration, such as phytoremediation using native plant species, have shown promising results in rehabilitating oil-contaminated sites. However, government and corporate remediation programs often overlook these local strategies in favor of costly technological solutions that are not always effective in the Niger Delta's unique ecological conditions. Similarly, Ojo (2021) highlights the role of women in resilience-building efforts, noting that women-led cooperatives have played a crucial role in sustaining local economies despite environmental challenges. However, these initiatives remain underfunded and unsupported by government agencies, limiting their potential to drive long-term recovery. The exclusion of affected communities from decision-making processes has further weakened resilience efforts, as top-down policies fail to reflect local realities and priorities.

According to Ibrahim (2022), the human security implications of oil spills extend beyond environmental and health concerns to broader socio-political stability. Oil-induced displacement has exacerbated ethnic tensions in Rivers State, as resource scarcity fuels competition among communities. The increasing reliance on artisanal oil refining, driven by economic desperation, has further contributed to environmental degradation and security risks. Despite the Nigerian government's crackdown on illegal refining operations, these activities continue to thrive due to widespread unemployment and weak law enforcement.

The reviewed literature highlights the far-reaching consequences of oil spills on health, community resilience, and human security, particularly in Rivers State. While previous studies have examined various aspects of oil pollution, gaps remain in understanding the long-term health effects and the effectiveness of resilience strategies. This paper seeks to bridge these gaps by offering a comprehensive analysis of the complex interplay between environmental degradation, health risks, and security dynamics in oil-producing regions. These challenges require an integrated approach that incorporates environmental restoration, healthcare interventions, and inclusive governance to ensure sustainable recovery and stability in affected communities.

7. Implications of Oil Spills on Health, Community, and Human Security

Nwilo & Badejo (2022) emphasised that oil spills in Rivers State have led to severe environmental degradation. However, they also argue that the contamination of water bodies and soil has had long-term economic implications for agrarian and fishing communities. Their study establishes a direct link between hydrocarbon pollution and declining agricultural productivity, reinforcing concerns over food security. However, their work does not fully address how environmental degradation intersects with public health, leaving room for further research into the health risks associated with prolonged exposure to oil spills. Similarly, Onuoha (2021) highlights the role of weak environmental governance in exacerbating the crisis, noting that regulatory agencies such as NOSDRA often lack the autonomy and capacity to enforce environmental standards. While this assertion aligns with previous studies on corporate impunity, it does not critically engage with how community-led resistance movements have shaped the discourse on oil spill accountability.

Okonkwo &Agbo (2023) explored the psychological toll of oil spills on affected communities, but they also argue that the loss of traditional livelihoods has eroded social cohesion. They posit that environmental degradation has created cycles of trauma, anxiety, and depression, which are often overlooked in mainstream environmental impact assessments. Their study presents a nuanced approach to the discussion by emphasizing mental health as a critical component of human security. However, they do not adequately engage with how state-led interventions have either mitigated or exacerbated these psychological stressors. Eze& Nnamdi (2020) take a different stance by examining how grassroots activism has emerged as a form of community resilience. They contend that while local resistance movements have pressured oil corporations into acknowledging their environmental responsibilities, such efforts are frequently undermined by state repression and corporate counterstrategies. This raises a pertinent question: can grassroots activism sustain long-term environmental justice in the absence of strong institutional support?

Adebayo et al. (2022) link oil spills to increased insecurity in Rivers State, but they also argue that the proliferation of militant groups is a direct consequence of environmental injustice. Their study situates the Niger Delta crisis within the broader context of resource-based conflicts, asserting that youth radicalization stems from perceptions of state neglect

and corporate exploitation. While this aligns with mainstream discourse on oil-related militancy, it does not critically interrogate whether the government's amnesty program has effectively addressed the structural conditions fueling unrest. Ekanem (2021) adds another layer to this debate by assessing how oil companies' reliance on private security forces has exacerbated tensions between host communities and the state. His findings suggest that corporate-sponsored militarization has not only escalated violent confrontations but has also delegitimized the role of traditional conflict resolution mechanisms. This raises critical theoretical implications: does human security deteriorate when environmental governance becomes militarized?

Ajayi (2023) critiques the inefficacy of oil spill remediation efforts, but he also argues that the government's failure to implement the UNEP report on Ogoniland reflects deeper issues of systemic corruption. His study provides empirical evidence showing that most cleanup projects have either been delayed or abandoned, resulting in the prolonged exposure of communities to toxic pollutants. This critique challenges previous research that attributes remediation failures solely to corporate negligence, shifting the focus to state accountability. Similarly, Balogun (2020) examines the role of legal interventions in securing environmental justice for oil-impacted communities. He argues that while litigation against oil companies has yielded financial compensation, it has rarely translated into tangible environmental restoration. This raises a crucial question: do legal frameworks adequately serve as deterrents against corporate environmental misconduct?

According to Udoh & Akpan (2021), the inadequacies of healthcare interventions in oil-producing communities, but they also argue that the chronic illnesses resulting from hydrocarbon exposure are underdiagnosed and undertreated. They emphasize that oil spills indirectly contribute to secondary health crises such as malnutrition, maternal complications, and respiratory diseases, further straining an already weak healthcare infrastructure. Their work highlights the intersectionality of environmental and public health crises, yet it does not sufficiently address the role of international health agencies in mitigating these risks.

Osagie (2023) advocates for indigenous knowledge in environmental restoration, but he also argues that the exclusion of local expertise has contributed to the failure of remediation efforts. His study challenges the assumption that top-down environmental management strategies are inherently effective, proposing instead that an integrated approach combining indigenous and scientific knowledge could yield better outcomes. However, he does not critically examine why state-led interventions continue to disregard community-driven solutions.

While Ibrahim (2022) questions the sustainability of grassroots environmental initiatives, he also argues that without institutional reforms, community-led efforts will remain ineffective in the long run. His study underscores the limitations of local adaptation strategies, suggesting that resilience-building must be complemented by stronger regulatory enforcement and political commitment. This critique aligns with previous studies on governance failures but departs from them by emphasizing the necessity of long-term policy reforms rather than short-term interventions.

These studies not only collectively highlight the multifaceted impact of oil spills on health risks, community resilience, and human security, but they also expose gaps in existing research. While previous works have extensively documented the environmental and

economic costs of oil pollution, there is still limited engagement with the psychological and gendered dimensions of resilience. Additionally, there is a critical need to examine whether legal and institutional frameworks provide adequate safeguards against recurring environmental injustices. This study builds on these existing works by interrogating whether current resilience strategies, compensation mechanisms, and governance models effectively address the long-term consequences of oil spills. How do local, national, and international responses intersect to shape the lived realities of oil-producing communities? Can human security be realized in a context where environmental degradation continues unchecked? By addressing these questions, this study advances theoretical discussions on environmental justice and human security in Nigeria's oil-producing regions.

8. Conclusion

The findings of this study reinforce the argument that oil spills in Rivers State have far-reaching consequences on health risks, community resilience, and human security. Conceptually, this research advances the discourse by demonstrating that environmental degradation is not merely an ecological issue but a multidimensional crisis that affects socio-economic stability, health systems, and governance structures. Unlike previous studies that primarily focused on the environmental and economic costs of oil spills, this paper interrogates how oil-induced vulnerabilities intersect with broader human security concerns, including personal, community, and health security. The findings reveal that the persistence of oil spills, compounded by weak regulatory frameworks and corporate impunity, has not only led to public health crises but has also heightened socio-political instability in oil-producing communities. This reaffirms existing scholarship that links environmental pollution to social unrest but expands the discussion by integrating community resilience and long-term health consequences as central themes in the human security debate.

Theoretically, this study builds on and critiques the human security framework by demonstrating its limitations in addressing environmental injustices in resource-rich but underdeveloped regions. While the traditional application of human security theory emphasizes protection from immediate threats such as conflict and economic deprivation, this study argues that oil spills represent a protracted human security threat that transcends episodic disruptions. Unlike previous works that examined human security largely through the lens of armed conflict and terrorism, this research highlights environmental degradation as a form of structural violence that undermines individuals' rights to health, livelihood, and safety. By doing so, it aligns with and extends contemporary human security literature that advocates for a broader, more inclusive understanding of security threats in postcolonial resource economies.

Empirically, this research diverges from earlier studies that largely attributed oil-related conflicts in the Niger Delta to militant activities and state repression. While these factors remain significant, the study provides new insights by demonstrating that oil spills contribute to a gradual erosion of community resilience, making affected populations more susceptible to socio-economic disintegration and chronic health conditions. This finding is particularly critical in the context of governance, as it questions whether existing environmental policies and compensation mechanisms are effective in mitigating the long-term impacts of oil pollution. The study also challenges the prevailing assumption that legal settlements serve as adequate restitution for oil spill victims, arguing instead that sustainable remediation and proactive environmental governance are necessary to prevent recurrent human security crises.

By integrating health risks, resilience strategies, and security implications within a single analytical framework, this study offers a more comprehensive understanding of the multifaceted challenges faced by oil-producing communities in Rivers State. It contributes to both academic discourse and policy debates by highlighting the urgent need for regulatory reforms, community-centered resilience strategies, and more inclusive approaches to environmental governance. While previous studies have extensively documented oil spill impacts, this research fills a critical gap by interrogating how these impacts translate into human security vulnerabilities over time. Future research should explore the role of international interventions in addressing oil-induced insecurities and assess whether transnational environmental governance frameworks can provide more effective solutions to the persistent crisis in the Niger Delta.

Recommendations

1. The Nigerian government should enhance the enforcement of environmental laws and regulations governing oil exploration agencies such as the National Oil Spill Detection and Response Agency (NOSDRA).
2. The government and oil companies should establish specialized medical intervention programs, including cancer screening, respiratory health services, and reproductive health support for impacted communities.
3. Local communities should be actively involved in the design and implementation of environmental remediation and resilience programmes.
4. Long-term remediation efforts should go beyond monetary compensation, and alternative livelihood programmes should be introduced to reduce the economic vulnerability of affected communities.
5. Oil companies operating in Rivers State should adopt a more inclusive and transparent approach to corporate social responsibility.
6. The Nigerian government should broaden its national security framework to recognize environmental degradation as a security threat.

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