ICOHESPE (2026): 192–206 QRCBN 62-6861-1753-250
International Conference on Health Science, Practice, and Education https://proceeding.unnes.ac.id/icohespe

Sexual And Reproductive Health Services In Disaster And Humanitarian Crisis Situations: A Global Systematic Review

Iis [1], Mahalul Azam[2], Evi Widowati[2]*

[1]S3 Public Health Sciences Student, Faculty of Medicine, Universitas Negeri Semarang, Central Java, Indonesia
[2] Lecturer at the Faculty of Medicine Universitas Negeri Semarang, Central Java, Indonesia
Corresponding author: iistehiis@students.unnes.ac.id

Abstract. Natural disasters, conflicts, and humanitarian crises have profound impacts on sexual and reproductive health (SRH), particularly among women and adolescents who face heightened vulnerabilities in accessing essential services and safeguarding reproductive rights. This study aimed to systematically review cross-country evidence on challenges, strategies, and best practices in delivering SRH services during emergencies. A systematic literature review (SLR) was conducted using PubMed, Scopus, Web of Science, and Google Scholar with the keywords "sexual and reproductive health (SRH)", "adolescents", "women", "disaster", and "humanitarian crisis". From 1,276 identified records, 842 remained after duplicate removal. Screening and eligibility assessment yielded 20 studies for final synthesis, comprising qualitative, quantitative, mixed-method, observational, and descriptive designs from Asia, Africa, the Pacific, and the Americas. Narrative synthesis was employed to identify overarching themes. Women and adolescents were disproportionately vulnerable during emergencies, encountering barriers such as limited health infrastructure, socio-cultural stigma, economic hardship, and weak policy coordination. Effective strategies included capacity building for health workers, community participation, gender-sensitive interventions, and integration of SRH with psychosocial and livelihood recovery efforts. Addressing SRH needs in crises requires comprehensive, gender-responsive, rights-based, and evidence-driven strategies. Strengthening global health policies and building resilient systems are crucial for equitable SRH service delivery.
Keywords: reproductive health, disaster, adolescents, SRH services, humanitarian crisis.

1 Introduction

Natural disasters and humanitarian crises represent serious challenges faced by global communities in the 21st century. Climate change, armed conflicts, uncontrolled urbanization, and geopolitical instability have increased both the frequency and severity of disasters, with profound implications for public health (1)(2). The impacts extend beyond physical destruction, loss of life, and economic disruption, deeply affecting sexual and reproductive health (SRH) services, which constitute a fundamental component of human rights. According to the World Health Organization(3). in every emergency situation, one in five women of reproductive age is likely to be pregnant, yet health infrastructures are often damaged or non-functional, limiting the ability to provide safe obstetric and perinatal care. Moreover, women and girls in disaster or conflict settings are highly vulnerable to sexual violence, unintended pregnancies, unsafe abortions, and sexually transmitted infections, including HIV/AIDS(3).

The United Nations Population Fund (4), in its *Humanitarian Action Overview 2025*, emphasizes that health systems in affected regions are frequently overwhelmed due to infrastructure collapse, population displacement, and energy crises. The urgent need for reproductive health services including contraception, safe delivery, neonatal and perinatal care, and protection against gender-based violence (GBV) has significantly increased. The report highlights the importance of delivering gender-sensitive and rights-based health interventions in emergencies to ensure that no woman or girl is left behind (4). A concrete example can be seen in Sudan, where over 30 million people are in need of humanitarian assistance, including approximately 2.5 million women and

adolescent girls of reproductive age. Many health facilities have been destroyed, and thousands of pregnant women lack access to safe childbirth services. In collaboration with local partners, UNFPA has established mobile clinics, distributed emergency reproductive health kits, trained health personnel, and created safe spaces for GBV survivors. However, these efforts remain constrained by severe funding shortages (5)

In Myanmar, following the major earthquake in 2025, thousands of individuals received SRH, maternal, and neonatal services as part of UNFPA's humanitarian response. Nonetheless, reports indicate that out of the estimated USD 15 million required for the response, only about 30% had been secured, resulting in significant delays in implementing interventions across affected areas(6). WHO further stresses that the *Minimum Initial Service Package* (MISP) for reproductive health must be implemented within the first 48 hours of a crisis to save lives and prevent further morbidity. The MISP includes coordination mechanisms, prevention of sexual violence, provision of emergency obstetric care, access to contraception, and post-rape treatment (7)(WHO, 2025). Additionally, WHO and the Health Cluster (2025) highlight that integrating SRH into primary health care systems from the emergency phase through recovery is crucial to ensuring the continuity of reproductive rights.

Overall, evidence from WHO and UNFPA (2025) demonstrates that disasters and humanitarian crises exacerbate existing inequalities in access to reproductive health services. Damaged infrastructure, shortages of trained health workers, and insufficient funding remain the main barriers. Therefore, an effective response requires comprehensive strategies that combine preparedness, health system strengthening, sustainable financing, and collaboration among international organizations, governments, and communities to uphold reproductive health rights for all even amid crises. Sexual and reproductive health (SRH) services encompass a wide spectrum, ranging from maternal and neonatal care, family planning, and the management of sexually transmitted infections, to the protection of vulnerable groups from sexual violence. Even under normal circumstances, these services face numerous challenges in many developing countries. When disasters strike, the situation becomes significantly worse as health facilities are damaged, logistics distribution is disrupted, the number of health workers decreases, and service systems are interrupted. Consequently, the needs of pregnant women, newborns, and adolescents at risk of sexual violence are often neglected, even though their needs increase substantially during emergencies(8)(9)

Women and adolescents are among the most vulnerable groups during disasters. Several studies have shown that they face significant barriers in accessing SRH services. Research conducted in Fiji and Tonga, for example, revealed that following cyclones and tsunamis, women and adolescents encountered major difficulties in accessing services due to poor coordination among stakeholders and limited reproductive health education(8). A similar situation occurred among women in flood-affected areas of Pakistan, where social and cultural norms restricting mobility exacerbated barriers to seeking health care (9). In Bangladesh, discriminatory sociocultural factors further limit women's access to reproductive health services, thereby increasing the risk of pregnancy complications and other health issues (1). Vulnerability is also experienced by adolescents living in refugee settings or humanitarian crises. A study in Uganda found that refugee adolescents preferred safer and more culturally sensitive communication on sexual issues, indicating that generic approaches to service provision are insufficient to meet their specific needs (10). This condition underscores the necessity for SRH services in disaster settings to be designed inclusively, taking into account psychosocial needs, cultural norms, and age-related factors.

Beyond individual level constraints, barriers also emerge from structural aspects. The destruction of health infrastructure, logistical limitations, weak interagency coordination, and social stigma further exacerbate the situation. A study in Pakistan highlighted the importance of gender-responsive interventions in emergency response, emphasizing that without gender-sensitive approaches, SRH services tend to be neglected(11). This finding is reinforced by research in Iran showing that, in addition to physical factors such as age and chronic illness, social determinants like the neglect of evacuation warnings increase mortality risk and worsen disaster impacts(12). Therefore, the provision of SRH services cannot be separated from the broader social determinants of health.

On the other hand, health service providers also face significant challenges in ensuring service continuity. Research in Nigeria demonstrated that health worker training can improve knowledge, positive attitudes, and skills in delivering adolescent SRH services, indicating that strengthening the

capacity of human resources in health is a key factor in enhancing system resilience(13). Findings from Lebanon further revealed that limited resources, social stigma, and bureaucratic hurdles are major obstacles, while donor support and cross-sectoral coordination serve as facilitating factors for service sustainability (14). These findings collectively highlight that the success of SRH services during disasters is strongly influenced by the capacity of health personnel and the overall governance of the health system. Maternal health remains one of the major challenges in emergency situations. Research conducted in Iran found that women of reproductive age faced serious barriers in accessing maternal health services during floods, increasing the risk of pregnancy complications (15). A similar finding emerged in Indonesia, where women affected by the Mount Sinabung eruption faced difficulties accessing maternal and reproductive services due to limited facilities and a shortage of health personnel (16). These findings indicate that disaster preparedness strategies must be more comprehensive so that maternal health services can continue functioning even when infrastructure is damaged or access is limited.

In refugee contexts, challenges to SRH services become even more complex. A study in Bangladesh among Rohingya refugees revealed that, despite the presence of SRH programs, cultural and logistical barriers remain the primary obstacles that reduce service effectiveness (17). Similarly, research in Uganda highlighted how climate-induced disasters exacerbate refugee youth's vulnerability to sexual and reproductive health problems, illustrating the strong connection between climate change, forced migration, and SRH(18). Therefore, interventions in refugee settings must not only address medical needs but also be sensitive to the social and environmental contexts in which they operate. Beyond physical health, disasters have long-term effects on mental health and socioeconomic well-being. The Canterbury earthquake in New Zealand, for example, was reported to decrease quality of life while increasing the prevalence of depression and stress among affected communities(2). Socioeconomic recovery has proven essential for restoring post-disaster well-being. In Bangladesh, other studies show that disasters exacerbate economic vulnerability, restrict access to healthcare services, and increase dependence on external aid all of which affect women's and adolescents' ability to access SRH services sustainably (19).

Global preparedness efforts regarding SRH services in disaster contexts have been initiated by various international organizations. For example, the U.S. Centers for Disease Control and Prevention (CDC) Division of Reproductive Health developed SRH preparedness interventions over a decade, which can serve as lessons for other nations(20). However, field realities reveal that many communities remain unaware of their SRH rights in disaster settings. Studies in Iran showed that public awareness regarding SRH rights and needs remains low, underscoring the importance of community-based educational interventions(21)

Local community engagement has also proven crucial in strengthening SRH services. Research in the Pacific region demonstrates that community networks, youth organizations, and social capital can enhance resilience and improve access to sexual and reproductive health and rights (SRHR) service(22). Furthermore, a study in Kenya emphasized the importance of decolonizing global health research to ensure interventions are relevant to the needs of women in East Africa rather than merely reflecting Western perspectives (23). Therefore, SRH research and interventions in disaster contexts must prioritize local participation and respect social and cultural contexts. Although numerous studies have been conducted on reproductive health in emergency situations, significant knowledge gaps persist regarding SRH services in disaster and humanitarian contexts. Most existing studies are descriptive, qualitative, and limited to specific populations or regions, thus failing to represent global conditions and needs (24). This lack of comprehensive evidence limits the formulation of effective, inclusive, and gender-responsive policies and interventions. Given the increasing frequency of disasters and humanitarian crises due to climate change, conflict, and forced migration, the need for a global systematic review has become urgent(4)(3).

Most previous studies describe field conditions without evaluating how well interventions meet the needs of affected populations. While qualitative data are essential for understanding the subjective experiences of survivors and health workers, they are insufficient for assessing program effectiveness, service sustainability, or implementation gaps across regions(18). The World Health Organization (3) emphasizes that without robust quantitative evidence, it is difficult for governments and humanitarian agencies to formulate scalable strategies. Therefore, research integrating qualitative and quantitative approaches is urgently needed to inform global SRH policy

development. Moreover, most studies have focused on specific populations such as pregnant women or survivors of gender-based violence while other groups, including adolescents, the elderly, persons with disabilities, and LGBTQ+ communities, are often overlooked. The United Nations Population Fund(4) reports that adolescent girls are among the highest-risk groups for unintended pregnancies, sexually transmitted infections, and sexual violence during crises. This lack of attention to vulnerable populations indicates bias in research priorities and service planning(18). Furthermore, few studies explore the needs of men or couples, even though their participation influences decision-making and SRH intervention outcomes (24). This reinforces the urgency for more holistic and inclusive research that accounts for social and cultural diversity across disaster contexts.

Another critical gap lies in evaluating the implementation of the Minimum Initial Service Package (MISP) the standard set of essential reproductive health services recommended by WHO and the Inter-Agency Working Group (IAWG) for emergencies. Although widely adopted, empirical evidence on its implementation across countries remains limited (3). Many reports merely describe operational processes without analyzing barriers, resources, and local adaptations. Understanding MISP implementation effectiveness is crucial for improving rapid responses during early disaster phases when maternal mortality, pregnancy complications, and sexual violence risks are highest (4).

Methodological limitations also hinder SRH research in disaster contexts. The lack of standardized indicators and analytical frameworks makes cross-study comparison difficult. For example, “access to services” may be defined based on facility visits in one study and self-perceived access in another(18). This inconsistency reduces the generalizability of findings and their applicability to other settings. Thus, a systematic review capable of identifying, synthesizing, and evaluating methodological quality is vital for integrating available evidence into actionable policy insights(3)(4). Additionally, many studies fail to highlight service sustainability after the emergency response phase. The post-disaster recovery phase remains a critical period where SRH needs persist, yet donor and governmental attention often declines(4). WHO (2025) notes that most interventions end once emergency funding ceases, leading to the loss of essential services such as contraception, post-abortion care, and psychological counseling. This demonstrates a gap between emergency response and recovery, emphasizing the need for research that evaluates the transition toward sustainable SRH systems(24).

Globally, few studies have compared SRH policies and practices across countries. Each nation has distinct health systems, social norms, and institutional capacities (3). For example, research in conflict-affected countries like Sudan and Syria revealed severe barriers to reproductive health services due to insecurity and mobility restrictions, whereas in disaster-prone countries such as the Philippines or Indonesia, challenges are more infrastructural and logistical(4). Without cross-context analysis, valuable lessons cannot easily be transferred. Hence, comparative studies identifying shared patterns and successful local innovations are essential to inform global policy(18). The urgency of this research is further reinforced by the increasing frequency and intensity of disasters affecting millions of women and children worldwide. According to UNFPA (2025), more than 30 million women of reproductive age live in humanitarian emergencies annually, with approximately 5 million at risk of pregnancy complications without access to medical care. Disasters also exacerbate gender inequality and increase gender-based violence(3). WHO (2025) reports that sexual violence cases rise by up to 60% in refugee camps lacking adequate protection systems and SRH services. These facts confirm that SRH services are not merely a medical necessity but a fundamental human right(24).

Documentation and reporting limitations further widen the knowledge gap. Many humanitarian organizations implement SRH programs, yet few publish scientific findings (4). Reports from NGOs, internal evaluations, and “grey literature” are rarely integrated into academic databases. As a result, many successful local practices remain unknown and cannot inform policy development (18). A systematic review incorporating these sources would help uncover innovative practices hidden outside formal publications (WHO, 2025). In conclusion, research gaps including methodological limitations, the absence of quantitative data, the lack of cross-contextual analysis, and the narrow focus on specific populations demonstrate that knowledge of SRH services in disaster contexts remains limited (24)(4). The urgency of this study arises not only from academic needs to fill literature gaps but also from the practical imperative to ensure that every individual especially women, adolescents, and vulnerable groups can access safe, dignified, and sustainable reproductive

health services under any circumstances (3)(18). Therefore, a global systematic review is crucial to re-evaluate existing evidence, assess intervention effectiveness, and develop evidence-based recommendations for policymakers, humanitarian actors, and national health systems. This effort supports the global agenda toward resilient, crisis-responsive, and gender-equitable SRH systems, aligned with the Sustainable Development Goals (SDG 3 and SDG 5) and the mandates of WHO and UNFPA to uphold reproductive health rights for all, including in humanitarian emergencies(3)(4).

2 Methods

2.1 Type of Research

This study employed a Systematic Literature Review (SLR) method to examine sexual and reproductive health (SRH) among adolescent girls and vulnerable groups in disaster and humanitarian crisis settings. This method aims to systematically, transparently, and consistently identify, evaluate, and synthesize evidence from previous studies.

2.2 Time and Place of Research

The literature search and analysis were conducted between July and September 2025. The study was carried out as a literature-based research by accessing international electronic databases, including PubMed, Scopus, Science Direct, and Google Scholar.

2.3 Research Target

The target of this study was articles that reviewed sexual and reproductive health (SRH) services for women, adolescents, and vulnerable groups in the context of natural disasters and humanitarian crises.

2.4 Research Participants

In the context of this systematic review, participants refer to the research subjects reported in the selected articles, including: 1) Women affected by disasters (8)(9)(11)(15)(16)(21)(25). 2) Refugee adolescents and youth (18)(10). 3) Pregnant women and women of reproductive age(26)(15)(16). 4) Healthcare providers and humanitarian actors (13)(14). 5) General populations affected by disasters (1)(12)(19)(22)(2). f. Programs and organizations (20)(24).

2.5 Research Procedure

The research procedure for this systematic review was conducted through four main stages: identification, screening, eligibility, and inclusion, with the aim of producing relevant articles to analyze sexual and reproductive health (SRH) services in emergency settings.

2.5.1 Identification

This study employed a systematic literature review (SLR) approach by searching the PubMed, Scopus, Web of Science, and Google Scholar databases. The keywords used included “sexual and reproductive health (SRH)”, “adolescents”, “women”, “disaster”, and “humanitarian crisis”. A total of 1,276 initial articles were identified, detailed as follows: PubMed (last 5 years) 210 articles, Scopus (last 5 years) 562 articles, and Web of Science and Google Scholar 504 articles. The identification process also involved removing duplicates across databases, resulting in 842 unique articles, each counted only once in the subsequent analysis.

2.5.2 Screening

The screening stage was conducted to assess the relevance of each article based on its title and abstract. From the 842 articles remaining after duplicate removal, selection was carried out by evaluating their alignment with the study focus, namely sexual and reproductive health (SRH) among women and vulnerable groups in disaster or humanitarian crisis settings. The initial screening process identified 196 articles as relevant to the research topic, meeting the inclusion relevance criteria and thus proceeding to the eligibility assessment stage.

2.5.3 Eligibility

At this stage, a full-text review was performed to ensure that each article met the predefined inclusion criteria, which were as follows: Discusses sexual and reproductive health (SRH) among women or adolescents in the context of disasters or humanitarian crises; Employs qualitative, quantitative, mixed-methods, observational, or descriptive research designs; Is a peer-reviewed article; Published between 2020 and 2025; and Written in English or Indonesian. The exclusion criteria comprised articles that: Did not focus on SRH; Did not study female or adolescent populations affected by disasters; Were opinion pieces, editorials, or non–peer-reviewed papers; Were published outside the 2020–2025 range; or Were written in languages other than English or Indonesian. Based on this full-text assessment, 62 articles from the 196 screened were deemed eligible for further analysis.

2.5.4 Inclusion

The inclusion stage represented the final phase to determine the articles qualified for systematic analysis and synthesis. From the 62 eligible articles, 20 studies were selected as the core materials for detailed analysis. These included qualitative, quantitative, mixed-methods, observational, and descriptive studies covering diverse disaster and crisis contexts across Asia, Africa, the Pacific, and the Americas. The types of disasters examined encompassed floods, earthquakes, tsunamis, volcanic eruptions, droughts, and refugee crises, with study locations including Fiji, Tonga, Nigeria, Bangladesh, Pakistan, Lebanon, Japan, Iran, Uganda, Indonesia, the United States, New Zealand, and Kenya. Data were analyzed using a narrative synthesis approach to identify key themes, challenges, strategies, and best practices in providing SRH services for women and adolescents affected by disasters. This synthesis offers a comprehensive cross-country perspective, serving as a basis for the development of policies, strategies, and implementation frameworks for SRH services in emergency and humanitarian contexts.

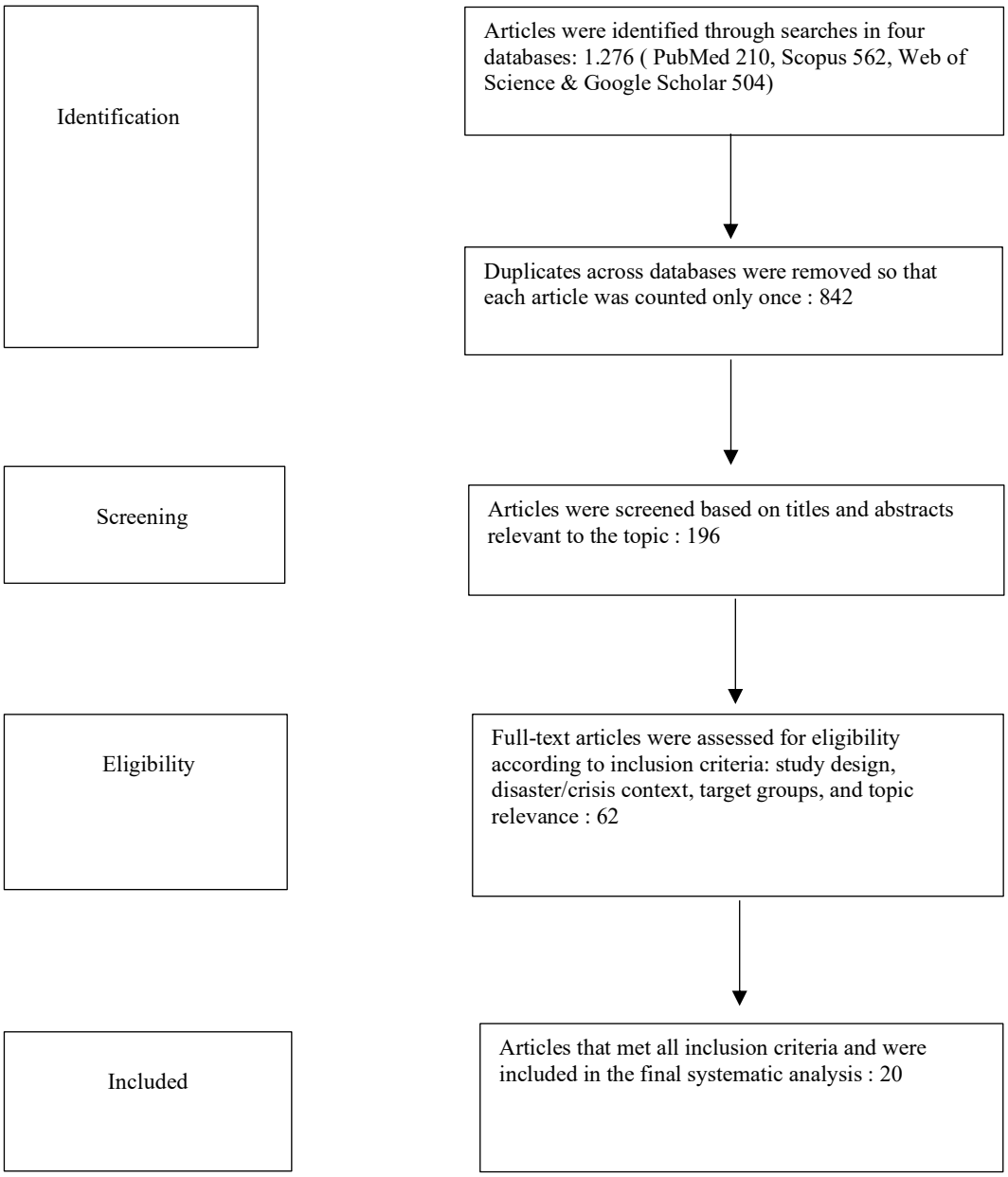

Fig. 1. PRISMA Table of Sexual and Reproductive Health (SRH) among Women and Vulnerable Groups in Disaster or Humanitarian Crisis Situations

2.6 Data Collection Technique

Data were collected through information extraction from articles that met the inclusion criteria. Extracted information included: authors, year of publication, study location, type of crisis, study design, participants, intervention or research focus, and key findings.

2.7 Data Analysis

Data were analyzed using a narrative synthesis approach. Articles were categorized based on study design (qualitative, quantitative, mixed-methods, case study, observational, descriptive), disaster location, type of crisis, and research target. The findings were then synthesized to identify patterns, similarities, differences, and research gaps.

2.8 Research Instrument

The instrument in this study was a data extraction sheet developed by the researchers to standardize the recording of essential information from each article. The extraction sheet included authors, year of publication, location, type of crisis, study design, population, research focus/intervention, and key findings.

Table 1. Systematic Review

No	Author & Year	Location	Crisis Type	Study Design	Population	Focus/Intervention	Key Findings
1	Beek et al., 2021	Fiji & Tonga	Cyclone, Tsunami	Qualitative	Women, adolescents, health workers	SRH education & services	SRH services limited; coordination needed
2	Agu et al., 2023	Southeastern Nigeria	Health crisis & disaster	Qualitative	Health service providers	Capacity-building interventions	Improved understanding, attitudes, and skills in adolescent SRH service provision
3	Fatema, 2020	Bangladesh	Flood	Mixed-methods	Disaster-affected women	Women's health vulnerability post-disaster	Explored health risks, limited service access, sociocultural factors
4	Ashraf et al., 2024	Pakistan	Flood & humanitarian crisis	Qualitative	Flood-affected women	Access to SRH services	Physical, social, and cultural barriers limited access
5	Waseem et al., 2025	Pakistan	Natural disaster & crisis	Qualitative	Women affected by disasters	Reproductive health in emergencies	Urgent need for gender-responsive policies and inclusive SRH services
6	Fouad et al., 2023	Lebanon	Refugee crisis (Syria)	Qualitative	Health providers & humanitarian actors	Barriers & facilitators in SRH service provision	Barriers: resource limitations, stigma, bureaucracy; Facilitators: donor support, inter-agency coordination
7	Miki & Ito, 2022	Japan	Natural disaster	Qualitative	Women in disaster situations	Women-specific health management	Importance of gender-based health planning to protect women in disasters
8	Yari et al., 2021	Iran	Flood	Case-control	Flood victims (deceased vs. survived)	Risk factors for mortality	Significant risks: older age, chronic illness, poor swimming skills, ignoring evacuation warnings
9	Loutet et al., 2024	Uganda	Refugee crisis	Qualitative	Refugee adolescents	Sexual health counseling in displacement	Adolescents desire culturally sensitive, safe, and contextual sexual health communication
10	Hossain et al., 2024	Bangladesh	Natural disaster	Mixed-methods	Community	Disaster impact on health & livelihoods	Main challenges: economic vulnerability, limited health access, reliance on external aid
11	Murphy et al., 2023	Pacific	Disaster preparedness	Qualitative	Community organizations & youth	Role of social capital in SRHR preparedness	Community networks enhance youth resilience and SRHR access during disasters
12	Safajou et al., 2024	Iran	Flood	Qualitative	Women of reproductive age	Reproductive health service challenges	Barriers: limited access, lack of maternal health facilities, increased vulnerability to reproductive complications

13	Sajow et al., 2020	Indonesia	Mount Sinabung eruption	Qualitative	Pregnant women & affected health workers	Maternal & reproductive health during eruption	MRH services disrupted; better preparedness strategies needed
14	Perez et al., 2021	United States	Preparedness & emergency response	Descriptive	CDC Reproductive Health Division programs	SRH emergency preparedness & response	Highlights achievements & lessons from 10 years of SRH preparedness interventions
15	Mahmud et al., 2024	Bangladesh	Humanitarian crisis	Mixed-methods	Rohingya refugees	Evaluation of SRH programs in humanitarian settings	Programs improved SRH access, but cultural, gender, and logistical barriers remain
16	Rajabi et al., 2025	Iran	Natural disaster	Qualitative	Women in disaster-prone areas	Awareness of reproductive health rights	Many people lack knowledge on SRH rights/needs; stronger reproductive health education needed
17	Nguyen et al., 2025	New Zealand	Canterbury earthquake	Observational	Community	Assessing earthquake impact on wellbeing	Reduced quality of life; increased depression and stress; socio-economic recovery key
18	Logie et al., 2025	Uganda	Drought, flood	Qualitative	Refugee youth	Climate disaster impact on adolescent SRH	Interventions must be context-sensitive and address refugee adolescents' needs
19	Nguyen et al., 2025	New Zealand	Earthquake	Quantitative	General population	Earthquake impact on wellbeing & health access	Recovery programs must address social and psychological wellbeing, including SRH
20	Adam et al., 2025	Kenya	Preparedness & emergency response	Qualitative	Women in East Africa	Local perspectives & socio-economic factors	Decolonizing global health research is important for local participation and relevance

3 Results And Discussion

3.1 Result

3.1.1 Patterns Based on Study Design

From the 20 reviewed articles, the majority employed qualitative designs (±70%). This indicates that research on sexual and reproductive health (SRH) in disaster contexts primarily focuses on exploring experiences, barriers, and community needs especially for women and adolescents rather than large-scale quantitative analyses. Mixed-methods approaches were used in Bangladesh(1)(19)(24) to complement qualitative findings with numerical data, while some observational/quantitative studies (12)(2). emphasized identifying objective risk factors and mental health impacts. This trend highlights that social, cultural, and gender contexts are central, although further quantitative studies are needed to measure the scale of issues and intervention effectiveness(8)(9).

3.1.2 Research Population Focus

Most studies centered on women of reproductive age as the primary subjects(9)(11)(15)(21). Other (14). studies focused on refugee adolescents (10)(18), pregnant women (16) and healthcare providers (13)(14), This demonstrates that women particularly those in reproductive age are the most vulnerable to barriers in SRH access. Research on healthcare providers underscores the importance of capacity-building to reduce inequities in service delivery.

3.1.3 Key Barriers in SRH Access

Several consistent barriers were identified: Structural: limited facilities, logistics, and healthcare workforce(16)(15), Socio-cultural: stigma, gender norms, and limited information (9)(21), Economic: livelihood vulnerabilities post-disaster(19)(25). These barriers indicate that disasters exacerbate pre-existing inequities, suggesting that interventions must be multisectoral (health, social, and economic).

3.1.4 Interventions and Strategies Identified

Several studies emphasized healthcare provider capacity(27), donor support and inter-agency coordination(14) and community social capital (22) as key factors to improve SRH services. highlighted the importance of structured preparedness with continuous evaluation. Effective interventions involve community-based approaches, cross-actor coordination, and gender-cultural sensitivity(20).

3.1.5 Impact of Disasters on Health and Well-being

Some quantitative and observational studies (12)(2) found that older age, chronic illness, low survival skills, and psychosocial stress increased the risk of mortality or reduced well-being. Refugee adolescents also face compounded vulnerability due to environmental conditions and limited SRH access (18). SRH is linked not only to biological outcomes but also to mental health, social resilience, and economic recovery.

3.1.6 Global Context and Local Relevance

Research was conducted across Asia, Africa, the Pacific, and the Americas. Adam et al. (2025) emphasized the importance of decolonizing research to ensure global policies consider local realities. Local context must always be considered, as strategies effective in one region may not be

relevant in another for example, cultural factors in Rohingya communities differ from those in the Pacific or East Africa.(25)

3.2 Discussion

3.2.1 Vulnerability of Women and Adolescents in Disaster Situations

The findings indicate that women, particularly adolescent girls and pregnant women, are the most affected groups regarding sexual and reproductive health (SRH) in disaster contexts (9)(16). This vulnerability arises from limited access to services, restrictive social norms, and dual caregiving burdens. These conditions demonstrate that disasters are not only natural phenomena but also exacerbate pre-existing gender inequalities. This aligns with Sommer et al. (2017), who highlighted that in humanitarian crises, women and adolescent girls face double barriers: limited healthcare access and cultural pressures related to sexuality. Such evidence reflects structural gender inequities that become more visible when socio-economic systems are disrupted.

3.2.2 Structural, Social, and Economic Barriers

Results show that SRH barriers are multidimensional: limited healthcare infrastructure (16)(15), social stigma (21) and economic vulnerabilities (19). These barriers are interconnected; for instance, post-disaster poverty reduces women's ability to seek healthcare, while social stigma exacerbates their marginalization from available facilities. Disasters amplify existing inequities among poor populations, women, and adolescents who were already vulnerable, and when service systems are disrupted, they become further marginalized. This is supported by the vulnerability framework theory, which posits that vulnerability arises from interactions between social, economic, and physical factors (11).

3.2.3 Role of Provider Capacity and Social Capital

Several studies highlight that interventions based on strengthening healthcare provider capacity(27) and reinforcing community networks(22) (Murphy, 2023) effectively reduce barriers. This demonstrates that obstacles are not solely due to limited physical facilities, but also depend on healthcare competence and community resilience. In emergencies, medical facilities may be constrained, yet if providers are skilled and communities highly cohesive, basic SRH needs can still be met. This aligns with community resilience theory, which emphasizes the importance of social resources in crisis response (3).

3.2.4 Impact of Disasters on Mental and Social Well-being

Quantitative and observational studies(12)(2) reported increased depression, stress, and mortality risks due to behavioral factors and limited service availability. This confirms that disasters impact not only physical health but also mental health and social well-being. Disasters cause loss of homes, livelihoods, and social networks, which usually support mental health. Regarding reproductive health, women with compromised psychological conditions tend to delay or have difficulty accessing SRH services. noted that poor post disaster mental health in women is often associated with higher risks of unintended pregnancy and gender-based violence (4)

3.2.5 Local Context and Decolonizing Research

Adam et al. (2025) emphasize the critical importance of local perspectives, as global strategies may not meet community-specific needs. Disasters are experienced differently across communities; for example, sexual stigma among Rohingya refugees differs from that in the Pacific.(25) Top-down research approaches can render interventions ineffective and may even exacerbate vulnerabilities. This underscores the necessity of decolonizing global health approaches, placing local communities as primary actors in planning and implementing interventions, rather than mere research subjects.

3.2.6 Theoretical and Practical Implications

Theoretically, these findings reinforce the concept that reproductive health in disaster contexts is multidimensional and inseparable from social, cultural, economic, and psychological factors. Practically, the evidence that community-based interventions and healthcare provider capacity-building are effective indicates the need for gender-responsive, preparedness-oriented policies. Such approaches are not merely reactive but proactive, incorporating education, emergency SRH services, and health system strengthening prior to crises.(3)

4. Conclusion

The review of 20 articles demonstrates that sexual and reproductive health (SRH) in emergency settings is a multidimensional issue, shaped by structural, socio-cultural, economic, and policy barriers. Women of reproductive age, pregnant women, and adolescents especially refugees or marginalized groups are the most vulnerable. Effective interventions are those that combine community-based preparedness, enhanced healthcare provider capacity, gender-sensitive approaches, and active participation of local actors. SRH is closely linked to psychosocial and economic well-being, highlighting the need for integrated responses. Further large-scale quantitative research is required to evaluate the coverage and effectiveness of these interventions.

4.1 Conflict of Interest

The authors declare that there are no conflicts of interest related to this study. All research processes, analyses, and reporting were conducted independently and objectively, without influence from any parties that could affect the results or interpretation of the study.

4.2 Acknowledgments

The authors sincerely thank all parties who have provided support, guidance, and facilities, enabling the successful completion of this research

References

1. Fatema SR. Women's health-related vulnerabilities in natural disaster-affected areas of Bangladesh: A mixed-methods study protocol. BMJ Open [Internet]. 2020;10(11), e039772. Available from: https://doi.org/10.1136/bmjopen-2020-039772
2. Nguyen TM, Noy I, Saglam Y. Impact of Canterbury earthquakes on well-being in New Zealand. Disasters. 2025;49(4), e12692. Available from: https://doi.org/10.1111/disa.12692
3. WHO. Sexual and reproductive health in emergencies. World Heal Organ. 2025;
4. UNFPA. State of World Population 2025. United Nations Popul Fund. 2025;
5. States UA. Sudan Situation Report – June 2025. United Nations Popul Fund [Internet]. 2025; Available from: https://arabstates.unfpa.org/
6. Myanmar U. Situation Report: Myanmar Earthquake Response July 2025. 2025; Available from: https://myanmar.un.org/
7. Savoie V, Quayle E, Flynn E, O'Rourke S. Predicting Risk of Reoffending in Persons with Child Sexual Exploitation Material Offense Histories: The Use of Child Pornography Offender Risk Tool in a Scottish Population. Vol. 34, Sexual abuse : a journal of research and treatment. 2022. p. 568–96.
8. Beek K, Drysdale R, Kusen M, & Dawson A. Preparing for and responding to sexual and reproductive health in disaster settings: Evidence from Fiji and Tonga. 2021;18(1), 185.
9. Ashraf M, Shahzad S, Sequeria P, Bashir A, Azmat SK. Understanding challenges women face in flood-affected areas to access sexual and reproductive health services: A rapid assessment from a disaster-torn Pakistan. Biomed Res Int [Internet]. 2024;1113634. Available from: https://doi.org/10.1155/2024/1113634

10. Loutet MG, Logie CH, Okumu M, Coelho M, Blondeel K, McAlpine A, et al. Qualitative insights on sexual health counselling from refugee youth in Bidi Bidi Refugee Settlement, Uganda: Advancing contextual considerations for brief sexuality-related communication in a humanitarian setting. PLoS One [Internet]. 2024;19(11), e0310682. Available from: https://doi.org/10.1371/journal.pone.0310682
11. Waseem S, Ahmed SH, Ahmed KAHM, Shaikh TG, Ullah I. Reproductive health crisis amidst a natural disaster in Pakistan: A call to action. Women's Heal. 2025;21, 17455057251344724.
12. Yari A, Moradi G, Soofi M. Socio-demographic determinants of disaster vulnerability in Iran: Implications for reproductive health during crises. Int J Environ Res Public Health [Internet]. 2021;18(17), 9182. Available from: https://doi.org/10.3390/ijerph18179182
13. Agu I, Agu C, Mbachu C, Onwujekwe O. Impact of a capacity-building intervention on views and perceptions of healthcare providers towards the provision of adolescent sexual and reproductive health services in southeast Nigeria: A cross-sectional qualitative study. BMJ Open. 2023;13(11),.
14. Fouad FM, Hashoush M, Diab JL, Nabulsi D, Bahr S, Ibrahim S, et al. Perceived facilitators and barriers to the provision of sexual and reproductive health services in response to the Syrian refugee crisis in Lebanon. Women's Heal [Internet]. 2023;19, 174550. Available from: https://doi.org/10.1177/17455057231171486
15. Safajou F, Nahidi F, Ahmadi F. Reproductive health challenges during a flood: A qualitative study. Nurs Open [Internet]. 2024;11(1), e2044. Available from: https://doi.org/10.1002/nop2.2044
16. Sajow, S. et al. Maternal and reproductive health challenges among women affected by the Sinabung eruption, Indonesia. Indonesian Journal of Disaster Health. Indones J Disaster Heal. 2020;5(2), 88–101.
17. Siddik MAB, Pervin I, Syfullah MK, Ali A, Mahmud A, Hasan M, et al. Post-COVID-19 internet addiction, depression, and pornography addiction among adolescents: Findings from a nationwide study in Bangladesh. Vol. 7, Health science reports. 2024.
18. Logie CH, Loutet M, MacKenzie F, Okumu M, Leggett R, Akinwande FS, et al. Experiences of drought, heavy rains, and flooding and linkages with refugee youth sexual and reproductive health in a humanitarian setting in Uganda: Qualitative insights. Glob Public Health [Internet]. 2025;20(1), 2503863. Available from: https://doi.org/10.1080/17441692.2025.2503863
19. Hossain A, Chowdhury AT, Mahbub M, Khan M, Rahman T, Sharif AB, et al. Natural disasters, livelihood, and healthcare challenges of the people of a riverine island in Bangladesh: A mixed-method exploration. . PLOS ONE [Internet]. 2024;(19(3), e0298854). Available from: https://doi.org/10.1371/journal.pone.0298854
20. Perez M, Galang RR, Snead MC, Strid, P., Bish CL, Tong VT, Barfield WD, et al. Emergency preparedness and response: Highlights from the Division of Reproductive Health, 2011–2021. J Women's Heal [Internet]. 2021;30(12), 1673–1680. Available from: https://doi.org/10.1089/jwh.2021.0553
21. Rajabi E, Tehrani FR, Farrokhi M, Norouzi M, Khankeh HR. Reproductive health ignorance in disasters: A qualitative study. Journal of Education and Health Promotion,. 2025 [Internet]. :14, 152. Available from: https://doi.org/10.4103/jehp.jehp_1419_23
22. Murphy N, Azzopardi P, Bowen K, Quinn P, Rarama T, Dawainavesi A, et al. Using social capital to address youth sexual and reproductive health and rights in disaster preparedness and response: A qualitative study highlighting the strengths of Pacific community organisations and networks. PLOS Glob Public Heal [Internet]. 2023;3(5), e0001624. Available from: https://doi.org/10.1371/journal.pgph.0001624
23. Adam R, Njeri A, Mwangi C. Decolonizing global health research: Women's reproductive rights and disaster contexts in East Africa. Glob Heal Rev. 2025;31(2):88–105.
24. Mahmud MU, Aktar S, Ahmed S, Islam TT, Paul D, Rubayet S, et al. Findings of an evaluation of a sexual and reproductive health programme in a humanitarian setting for the forcibly displaced Myanmar nationals in Cox's Bazar, Bangladesh. J Glob Health [Internet]. 2024;14, 04146. Available from: https://doi.org/10.7189/jogh.14.04146
25. Adam A, Lazarus L, Kina B, Lorway R, Mazoya B, Mantel M, et al. Decolonizing global health research: Experiences from the women in health and their economic, equity and livelihood

statuses during emergency preparedness and response (WHEELER) study. Front Public Heal [Internet]. (13, 1578964). Available from: https://doi.org/10.3389/fpubh.2025.1578964
26. Miki Y, Ito K. Appropriate health management considering the vulnerability of women during disasters. Tohoku J Exp Med [Internet]. 2022;256(3), 187–195. Available from: https://doi.org/10.1620/tjem.256.187
27. Agu IC, Agu C, Mbachu C, Onwujekwe O. Impact of a capacity-building intervention on views and perceptions of healthcare providers towards the provision of adolescent sexual and reproductive health services in southeast Nigeria: A cross-sectional qualitative study. BMJ Open, [Internet]. 2023;13(11), e073586. Available from: https://doi.org/10.1136/bmjopen-2023-073586