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Barriers to Contraceptive Access in Disaster Situations: A Systematic Review of Health System Preparedness and Socio-Cultural Challenges

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ABSTRACT

Introduction: This study examines barriers to access to contraceptive services in disaster situations in the context of reproductive health system preparedness and socio-cultural challenges. According to the United Nations Population Fund (UNFPA) report in 2022, 51.3% of married women have not used contraceptives, and around 11.3% of family planning needs are unmet. In disaster situations, these problems are further complicated by limited infrastructure, unequal distribution of services, and weak health system preparedness. The inability to meet contraceptive needs can increase the risk of unplanned pregnancies and reproductive health complications, exacerbating the impact of disasters on women and other vulnerable groups. This study aims to fill this research gap by providing a comprehensive review of the factors that hinder access to contraceptive services during disasters and proposing policy-based strategies to improve health system preparedness in emergency response.

Methods: This study is a systematic review that collects several studies according to PRISMA guidelines. Using relevant keywords, studies were obtained from PubMed, Science Direct, and Scopus databases. Studies were collected from June to July 2024.

Results: Key findings suggest that socio-cultural, religious, and economic factors influence barriers to contraceptive access during disasters. Limited knowledge, social stigma, cultural and religious norms, and financial instability contribute to low utilization of contraceptive services. In addition, disruptions due to disasters and the COVID-19 pandemic limit community mobility, hinder access to health facilities and exacerbate service gaps for vulnerable groups, including refugees and migrants.

Conclusion: This study highlights the importance of a human rights-based approach in ensuring the accessibility of contraceptive services in crisis situations. Policy implications include strengthening reproductive health systems in emergency response, reducing stigma through community education, and increasing stakeholder engagement in ensuring equitable distribution of services. The results of this study contribute to the global discourse on reproductive health rights in disaster contexts and provide a basis for innovative strategies to expand access to services in conflict-affected or remote areas.

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INTRODUCTION

Reproductive health encompasses many aspects, including sexual health, family planning, and care during pregnancy and childbirth. Access to quality reproductive health services affects an individual's quality of life and contributes to public health and socio-economic development. One of the key elements in reproductive health is family planning and the use of contraception. However, according to the 2022 United Nations Population Fund (UNFPA) data report, 51.3% of married women in the world do not use contraception, and 11.3% of family planning needs are still unmet (1). These gaps become even more critical in disaster situations, as health systems are often unprepared to meet increased contraceptive needs. At the same time, socio-cultural factors can further exacerbate access for vulnerable groups.

Disasters or humanitarian crises impact not only physical infrastructure but also the availability of health services, logistics distribution systems, and socio-economic stability. In emergencies, the risk of pregnancy complications, gender-based violence, and the spread of sexually transmitted infections (STIs) and HIV/AIDS increases drastically (2). In addition, the need for contraceptive services also increases due to changes in social dynamics, limited resources, and psychosocial conditions that can increase the risk of unplanned pregnancy (3,4).

In many cases, emergency response priorities often focus on providing basic needs, such as food, clean water, and shelter, while reproductive health services are often neglected. As happened after the earthquake and tsunami that hit Palu, Central Sulawesi, Indonesia, many refugees wanted to access family planning services, but were unable to obtain contraceptives due to logistical limitations at health posts (5). A similar situation occurred when Hurricane Katrina hit the United States, where only 40% of women who had previously received family planning services were able to access them again after evacuation, while 31% had difficulty obtaining contraception, ultimately resulting in unplanned pregnancies for some of them (6). Limited access to contraceptive information and resources during disasters due to healthcare systems being unprepared to handle increased needs can worsen reproductive health outcomes for at-risk populations, including women and adolescents (7).

In this context, the health system's preparedness to provide contraceptive services during disasters is an important aspect that needs to be evaluated. The Health System Resilience Model emphasizes the capacity of the health system to respond, absorb, and adapt to crises, including ensuring the effective distribution of contraceptive services (8). Meanwhile, the Disaster Risk Reduction (DRR) framework offers strategies to integrate reproductive health services into disaster preparedness policies, such as through supply chain diversification, integration into emergency response, and provision of Minimum Initial Service Packages (MISP) for reproductive health (9).

Although various studies have highlighted the impact of disasters on reproductive health, studies that comprehensively examine barriers to contraceptive access from the perspective of health system preparedness and socio-cultural challenges are still limited. Therefore, this study uses a systematic review approach to assess barriers to contraceptive services in disaster scenarios. The results of this study are expected to provide policy recommendations aimed at improving health system preparedness in providing contraceptive services during disasters, as well as identifying and addressing socio-cultural barriers that may hinder access for vulnerable groups, such as women and adolescents.

METHOD

This systematic review collects several studies based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) by the Cochrane Collaboration Handbook for Systematic Reviews.

Research Questions

The PICO (Population, Intervention, Comparison, Outcome) format formulated the research question.

Table 1. Research Questions (PICO)

P: *Population*	The population in this research consists of communities affected by disasters.
I: *Intervention*	The community that receives access to contraceptive services in disaster situations.
C: *Comparison*	The community that does not receive access to contraceptive services in disaster situations.

O: *Outcome*	Description of factors inhibiting access to contraceptive services and efforts to increase access to contraceptive services in disaster-affected communities.

Search Strategy

Studies were obtained from databases including PubMed, Science Direct, and Scopus using advanced search with boolean operators AND/OR to increase the sensitivity and specificity of the results. Keywords were matched against Medical Subject Headings (MeSH) to identify all relevant terms (Figure 1). The basic keywords used were contraception AND disaster.

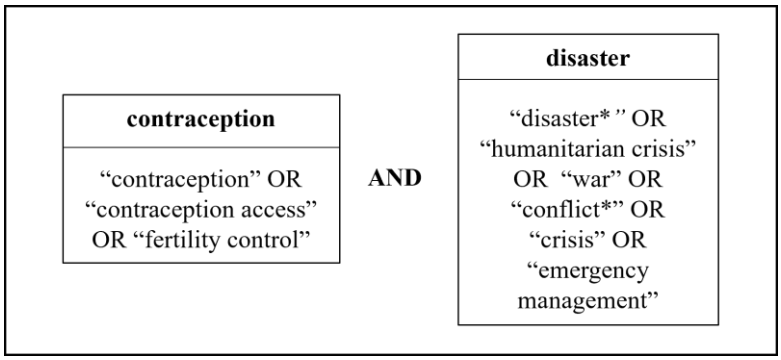

Figure 1. Keyword search

The search process was conducted in June - July 2024 by filtering publications based on relevance to this research.

Study Selection

The study selection and screening process used Mendeley Desktop software. Irrelevant studies and duplicated articles were excluded. Screened articles were then identified based on the inclusion and exclusion criteria.

Inclusion and Exclusion Criteria

Inclusion criteria for this study were: (1) studies conducted in areas that provide contraceptive services in disaster situations; (2) publications within the last five years (2019 - 2024); (3) articles with English and full-text; (4) qualitative or mixed methods studies; (5) publications in the form of original research. Exclusion criteria in this study were: (1) studies in areas that provide reproductive health services but no access to contraceptive services in disaster situations; (2) publications before 2019; (3) articles other than English, not open access, and only provide abstracts; (4) review articles, book chapters, or encyclopedias.

Data Extraction

The data extraction process should be done systematically and may involve more than one researcher to minimize bias. The data extracted in this study included author information, research location, research design, and results or findings from each study.

Quality Assessment

Article quality was assessed using ten questions based on the Joanna Briggs Institute (JBI) critical appraisal and Mixed-Methods Appraisal Tools (MMAT). The quality and risk of bias for each article assessed were categorized into high bias ("yes" answers < 30%), moderate bias ("yes" answers between 31% and 70%), and low bias ("yes" answers > 70%). To reduce the risk of bias, this study applies several prevention strategies, namely source triangulation by comparing the results of various studies to see consistent patterns and sensitivity analysis by evaluating how research results change when studies with high bias are removed from data synthesis, as well as the application of narrative synthesis methods.

RESULTS

The study selection process was conducted according to the PRISMA guidelines, as shown in Figure 2. From the results of searching articles through the database using relevant keywords and considering the year of publication, a total of 2,567 articles were found. At the final stage, 11 articles were selected for further analysis.

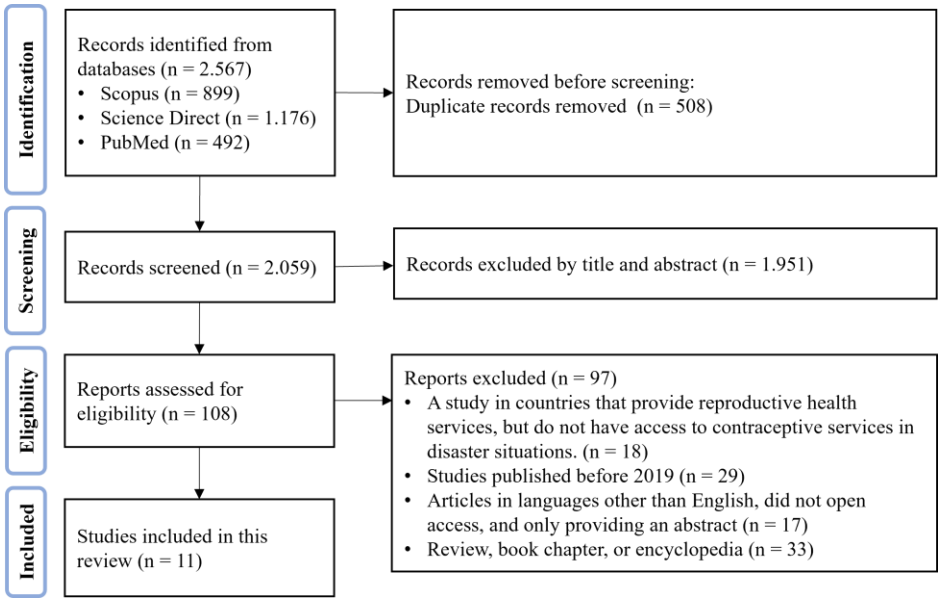

Figure 2. PRISMA flow

Of the 11 studies obtained, there were 2 mix-methods studies, 3 qualitative studies, and the remaining 6 were quantitative. Study characteristics are classified in Table 1. Based on the quality assessment of the articles using JBI Critical Appraisal Tools for qualitative studies and MMAT for mixed-methods studies, it was found that 10 articles had low bias, with "yes" answers obtained above 70% for all articles.

Table 1. Study Characteristics

No	Author(s)	Year	Study Focus	Key Findings	Moderating Factors	Geographic Context
1	Achola et al. (10) .	2024	Factors influencing contraceptive use among host and refugee populations in Uganda.	Low utilization of family planning, need for education and counseling for couples	Family planning services	Distrik Adjumani Uganda
2	Casey et al. (11)	2020	Contraceptive use among sexually active young women (15–24 years) in areas supported by collaborative programs.	Low use of modern contraception, preference for LARC, need for more diverse contraceptive methods.	Modern contraceptive methods and long-acting reversible contraceptive (LARC) techniques	Democratic Republic of the Congo
3	Hammond et al. (12)	2022	The impact of COVID-19 on sexual and reproductive health during	Disruption of contraceptive services, increasing fear of unwanted pregnancy.	Modern contraception (condoms, injections), long-acting reversible	United Kingdom

			lockdown in the UK.		contraception (LARC)	
4	Marquez-Lameda. (13)	2022	Venezuelan migrant and refugee women's access to reproductive health services.	Limited access to modern contraception, disparities in use.	Modern contraceptive methods	Peru
5	Mourtada Melnikas (14)	2023	The impact of the crisis on family planning services for Syrian refugees in Lebanon.	Service disruptions, decreased demand for contraception.	Family planning services and modern contraceptive methods	Libanon
6	Nara et al. (15)	2020	Emergency contraception access for Congolese refugees in Uganda.	Inconsistent availability, high costs, lack of knowledge.	Emergency contraceptive pills	Uganda
7	Rahman et al. (16)	2023	The influence of reproductive health factors on the desire to have children after a disaster.	The risk of unplanned pregnancy increases.	Modern contraception (IUD, pill)	Indonesia
8	Rezaei et al. (17)	2023	Comparison of contraceptive use before and during the COVID-19 pandemic in Iran.	Declining use of modern contraception, increasing unplanned pregnancies.	Modern contraceptive methods	Iran
9	Rivillas. (18)	2021	This study investigates gaps in the availability of contraceptive services for migrant and refugee populations in six cities that host 70% of Venezuelan migrants in Colombia, along with the difficulties faced in managing future crises.	Low and unequal access, a social dimension that causes inequality.	Modern contraceptive methods	Columbia
10	Sigdel et al. (19)	2023	Nepali women's challenges in accessing family planning services during the pandemic.	Individual and family barriers to contraceptive access.	Family planning services	Nepal

11	Tran et al. (20)	2021	Key factors in improving health systems in emergency contexts.	Improving coordination and capacity of health services, community mobilization.	Family planning services	Democratic Republic of Congo and Somalia

From these results, the number of studies based on the category of obstacles can be determined, which is presented in the form of a table.

Table 2. Number of Studies Based on Category of Obstacles

Category Barriers	Number of Studies	References Authors
Socio-cultural norms	3	Achola et al. (2024), Marquez-Lameda (2022), Rivillas (2021)
Economic challenges	3	Nara et al. (2020), Marquez-Lameda (2022), Rivillas (2021)
Disruption of health services	4	Hammond et al. (2022), Mourtada & Melnikas (2023), Sigdel et al. (2023), Rahman et al. (2023)
Limited access to modern contraceptive methods	5	Casey et al. (2020), Marquez-Lameda (2022), Rezaei et al. (2023), Rivillas (2021), Sigdel et al. (2023)
The impact of a crisis or pandemic on the use of contraception	3	Hammond et al. (2022), Rezaei et al. (2023), Rahman et al. (2023)

DISCUSSION

The disruption of access to contraceptive services has a considerable effect on the health and well-being of refugees and migrants. It can result in unplanned pregnancies, health risks for mothers and babies, and worsening social and economic conditions. Long-term impacts include increased abortion rates, poor reproductive health, and reduced quality of life and future opportunities (21). Access to contraceptive care for refugees and migrants is often hampered by a variety of factors, including:

Knowledge, Education, Attitudes, and Experience

Refugees with low education often face difficulties in accessing and using contraceptive services in disaster situations due to a lack of knowledge about available methods and how to obtain them (11,22). Refugees who have positive attitudes and sound knowledge will increase the likelihood of using contraceptive services in disaster situations (23). Negative experiences that refugees have may reduce the desire to use contraceptive services. Conversely, positive experiences can increase trust and encourage continued use of services (13,24).

Cultural Beliefs and Norms

Strong religious beliefs often prevent refugees from using contraceptive methods, even when they have access to such services (25). In addition, harmful cultural norms towards contraception, such as fear of side effects or the view that contraception is ineffective or uncomfortable, also hinder its use (10). Societal norms that view contraception as immoral or inconsistent with traditional values may make women feel ashamed or afraid to use contraceptive methods (14).

Socioeconomic Barriers

Social support from a husband or other family member can provide additional motivation and reduce barriers faced by women in accessing contraceptive services in disaster situations (13). Refugees who are not fluent in the local language may have difficulty understanding the information service providers provide or explaining their needs clearly (15). Employment status and financial ability to pay for health services or contraception are crucial factors

influencing decisions to seek these services. Job loss and reduced income due to disasters make it difficult for many women to afford family planning services (18).

Psychological Factors

Stress and trauma due to disasters can increase mental well-being problems such as worry and tension, whichin turn affect decisions related to pregnancy and family planning (16). Uncertainty and psychological instability make many individuals feel hesitant and confused in making decisions to access contraceptive services (12).

Resource and Accessibility Limitations

Limited resources and infrastructure, as well as administrative challenges, such as remote service locations, unavailable contraceptive methods, high costs, non-confidentiality of services, or poor provider attitudes, are barriers to accessing contraceptive services. In humanitarian crises, financial resources and medical personnel are often insufficient to meet the need for contraceptive services (20). In many refugee-inhabited settings, emergency contraceptive pills are often not consistently available, creating gaps in meeting reproductive health needs (15).

Lockdown Due to COVID-19 Pandemic

The COVID-19 pandemic, triggered by the SARS-CoV-2 virus, has emerged as a significant global health crisis, exacerbating the difficulties in accessing healthcare services. Many countries were compelled to implement lockdowns to curb the virus's spread. While these measures are crucial for safeguarding public health and alleviating strain on healthcare systems, lockdowns have notably hindered the public's access to essential health services (26).

One of the significant impacts of the lockdown was limited physical access to health facilities. Many clinics and health services experienced closures or limited operations due to the lockdown, making it difficult for women to access contraceptive services (27,28). Mobility restrictions and lockdown measures resulted in the closure of health facilities or limited operations, directly affecting access to services (17,29). The pandemic also changed the health priorities of many women, focusing more on protection against COVID-19 (12,19).

To overcome barriers to access to contraceptive services, a comprehensive approach is needed that aims to reduce stigma, improve access, and ensure that contraceptive services are effectively accessible to refugees and migrants. Various efforts that can be made to increase access to contraceptive services include:

Interventions for Increasing Knowledge

Increasing community knowledge through education and interventions that change attitudes and social norms can overcome stigma and increase acceptance of reproductive health services (10,30). Dissemination of information can be done through various media to be more effective. Education appropriate to local conditions will be easier to accept and understand, ensuring the success and sustainability of the program (20).

Contraceptive Availability and Health Worker Capacity Building

Efforts to increase the availability and accessibility of ECPs include reducing costs and increasing support from health facilities and aid organizations (31,32). With easily accessible and affordable ECPs, refugees can more easily obtain the services they need, and the risk of unintended pregnancy can be reduced (14). Training and support for health care providers can also provide better services tailored to the specific needs of refugee populations (18). This is done so that health workers can provide sensitive and responsive services to the needs and norms of the local community (20).

Coordination Between Government and NGOs

Collaboration between governments and non-governmental organizations (NGOs) can enhance both the accessibility and quality of healthcare services (20). Governments are crucial in offering policy support that adapts to evolving circumstances and needs, ensuring that all individuals, including refugees, receive equitable access to reproductive health services (15,18). NGOs can provide additional resources and technical expertise (33).

Healthcare Integration

Integration of health services, including contraceptive services and post-abortion care with maternal, neonatal, and child health services, can improve overall health outcomes in a humanitarian context (34). By integrating multiple health services, programs can be more efficient in their use of resources and provide more holistic services, ultimately improving population health and well-being (20)

Limitations and Cautions

This study used a systematic review method that has several limitations. First, the results depend on the quality and availability of the literature reviewed, which may not cover all cultural, social, and economic contexts of refugees and migrants. Variations in methodology, population, and region in the studies affect the results' generalizability and may lead to heterogeneity that affects the generalizability of the results. In addition, some of the studies reviewed may have reporting bias or data limitations that affect the accuracy of the findings.

Cautionary remarks include the importance of interpreting the results in the local context, given that each community has different cultural and social dynamics. Interventions should be designed with a culturally sensitive and human rights-based approach, and flexibility should be considered for implementation in dynamic crisis settings. It is important to continue exploring innovative strategies and ensuring that programs designed can address access barriers effectively and sustainably.

Recommendations for Future Research

Further research needs to focus on evaluating the effectiveness of integrated service models for refugees and the use of digital platforms to improve access to contraception in disaster-affected areas. Cross-sector partnerships and community-based studies are also needed to identify the most effective strategies in different social and cultural contexts. With more innovative and evidence-based approaches, access and quality of contraception services for crisis-affected populations can be sustainably improved.

CONCLUSION

Access to contraceptive services for refugees and migrants is often hampered by a variety of factors, including low knowledge, cultural norms and religious beliefs that discourage contraceptive use, social stigma, and socioeconomic barriers such as lack of family support, language differences, and economic instability. Disaster-related stress and trauma also influence decisions about contraception. The COVID-19 pandemic has exacerbated these conditions by restricting mobility and resulting in the closure of health facilities. To overcome these obstacles, a multi-sectoral approach is needed that includes community-based education, increasing the availability of emergency contraception, training health workers in providing culturally responsive services, and close coordination between government and NGOs. In addition, integrating reproductive health services with maternal and child health services can increase the effectiveness of the program.

As an innovative recommendation, the use of digital technology, such as mobile applications for reproductive health consultations and online contraceptive distribution, can be a more adaptive solution in emergency situations. Interventions that are sensitive to cultural contexts, such as the involvement of religious or community leaders in reproductive health campaigns, can also help reduce stigma and increase contraceptive acceptance.

AUTHOR'S CONTRIBUTION STATEMENT

Alfiana Ainun Nisa played a role in designing and developing the systematic research framework and managing the overall implementation of this research project. Efa Nugroho was responsible for collecting, selecting, and analyzing data from pertinent literature and compiling the preliminary version of the manuscript based on the research results. Ayu Istiada contributed significantly to the literature review and interpretation of the analysis results and provided constructive input during the manuscript's revision to improve the writing's quality. Annisa Novanda Maharani Utami played a role in validating the data obtained from various sources and conducting formal analysis to ensure the accuracy and consistency of the research results obtained through the literature review. Dwi Yunanto Hermawan contributed methodological expertise in implementing systematic reviews and conducted critical reviews of the manuscript to ensure that all methodological procedures had been followed correctly, thus ensuring the

accuracy and clarity of the research results. Meanwhile, Heny Widyaningrum supervised the entire research process, including data quality management, and provided a final review of the manuscript that had been prepared to ensure alignment with the research objectives and academic standards.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding this research or its publication. All data and results presented are independent and were not influenced by any sponsor or external organization.

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