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Implementation of the Minimum Initial Service Package (MISP) as an Effort to Fulfill Reproductive and Sexual Health Services in Disaster Situations: Systematic Review

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ABSTRACT

Background: The Minimum Initial Service Package (MISP) was developed as a guideline for implementing reproductive health services in disaster situations. However, there have not been many studies that comprehensively assess the implementation of all components of the MISP in disaster situations. This study provides an overview and evaluates the implementation of the eight components of the MISP in various countries.
Methods: This research was a systematic review that gathered several studies using the PRISMA flow. Using relevant keywords, the researcher obtained studies from PubMed, Science Direct, and Scopus databases. Studies were collected from April to June 2024.
Results: The findings of this research highlight the importance of strengthening coordination, communication, training, advocacy, comprehensive implementation strategies, and targeted interventions to maximize the effectiveness of the MISP in disaster response efforts. Our research offers a robust empirical basis to reformulate MISP policies, directly contributing to greater investment in healthcare, with a particular focus on emergency response.
Conclusion: In conclusion, our study contributes to the understanding of reproductive sexual and health issues in disaster setting by evaluating the implementation of the Minimum Initial Service Package (MISP). This research provides insights into the implementation of MISP in various disaster context across different countries. Future studies should focus on evaluating the effectiveness of the MISP to further advance knowledge in the field of international health.

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INTRODUCTION

Located in the Pacific Ring of Fire, Indonesia often faces emergency disaster situations caused by both natural and non-natural factors (1). These disasters can impact various health issues (2,3). Disasters have been proven to impact serious sexual health issues, such as increased risk of pregnancy complications, sexual violence, and the spread of sexually transmitted infections (STIs) and HIV/AIDS (4,5). According to a report by the United Nations Population Fund (UNFPA), as many as 500 women and girls die every day due to pregnancy and childbirth complications in disaster conditions. During the eighth year of the humanitarian crisis, about 28% of girls in Iraq were married under

the age of 18. Additionally, in Colombia, 21 girls aged 10-14 years were raped every day during the armed conflict. Overall, more than 50% of maternal deaths and 45% of newborn deaths worldwide occur in disaster conditions (6). Despite disaster conditions, everyone still has the right to access adequate reproductive and sexual health services (4,7).

During disasters, access and availability of health services are often impacted. Inadequate health service capacity results in a health crisis. Since 2008, the Indonesian Ministry of Health has developed guidelines for program implementers and health service providers in implementing reproductive health services in health crises, namely the Minimum Initial Service Package (MISP). MISP is a priority reproductive health activity that must be carried out and is part of the health crisis management policy integrated through the Minister of Health Regulation No. 64 of 2013 on Health Crisis Management (8). MISP includes eight components: (1) Reproductive health MISP coordination; (2) Prevention and handling of sexual violence; (3) Prevention of HIV and STIs transmission; (4) Prevention of maternal and neonatal morbidity and mortality; (5) Prevention of unwanted pregnancies; (6) Adolescent reproductive health and youth involvement; (7) Minimum health services for toddlers; (8) Minimum health services for the elderly (8,9).

However, not many studies have comprehensively assessed the effectiveness of all MISP components in disaster situations. Previous studies have only described a maximum of 5 MISP components. Therefore, this study provides an overview and evaluates the effectiveness of the 8 MISP components implemented in various countries, including reproductive health services for adolescents, toddlers, and the elderly, presented in a systematic literature review.

METHOD

Research Type

This systematic review gathers 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

Research questions were formulated using the PICO (Population, Intervention, Comparison, Outcome) format.

P (Population)	:	Disaster-affected communities accessing reproductive health services in disaster situations
I (Intervention)	:	Reproductive health services
C (Comparison)	:	Not accessing reproductive health services during disaster situations
O (Outcome)	:	Implementing reproductive and sexual health services in disaster situations.

Search Strategy

Studies were identified through a comprehensive search of PubMed, ScienceDirect, and Scopus databases using advanced search techniques and Boolean operators (AND/OR). Keywords and search terms were aligned with Medical Subject Headings (MeSH) to ensure inclusivity of relevant studies. The search strategy and keyword combinations are detailed in Figure 1. Data collection occurred from April to June 2024, and the rationale for selecting these databases is their recognized relevance to public health and disaster research.

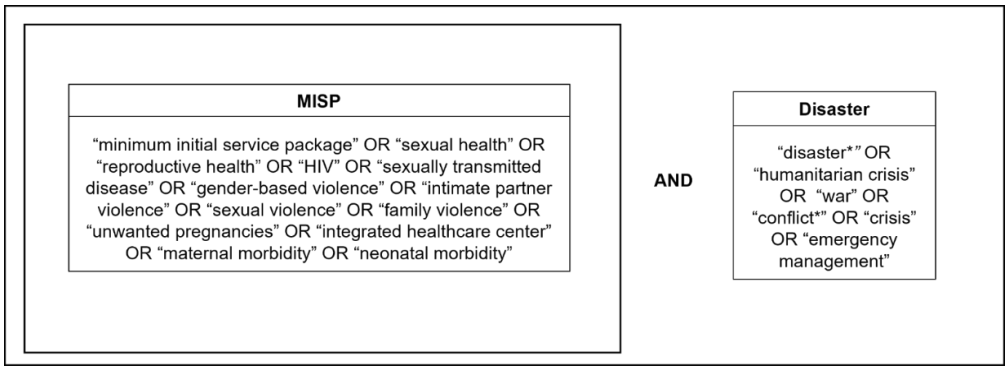

Figure 1. Keyword

Study Selection

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

Inclusion and Exclusion Criteria

The inclusion criteria for this study are: (1) studies conducted on disaster-affected populations receiving MISP reproductive and sexual health services and humanitarian interventions; (2) articles published in the last five years (2019-2024); (3) articles in English and full-text; (4) qualitative or mixed-methods studies; (5) publications in the form of original research.

The exclusion criteria for this study are: (1) studies that do not measure MISP components or reproductive and sexual health in disaster situations; (2) articles published before 2019; (3) articles other than English, not open access, and only providing abstracts; (4) publications in the form of review, book chapter, or encyclopaedia.

Data Extraction

Data extraction was performed systematically to ensure accuracy and reliability. Two independent researchers conducted the process to minimize bias, with disagreements resolved through discussion. Extracted data included authors and publication year, research location study design population characteristics, key findings or results. This approach facilitates consistency and ensures the comprehensive collection of relevant data across studies.

Quality Assessment

Article quality assessment used several tools from the Joanna Briggs Institute (JBI) and Mixed-Methods Appraisal Tools (MMAT). The quality and risk of bias for each assessed article were categorized as high bias (answers "yes" < 30%), moderate bias (answers "yes" between 31% and 70%), and low bias (answers "yes" > 70%).

RESULTS

The study selection process followed PRISMA guidelines, as shown in Figure 2. The search results of articles through databases using relevant keywords and publication years found 5,419 articles. At the final stage, 15 articles were obtained for analysis.

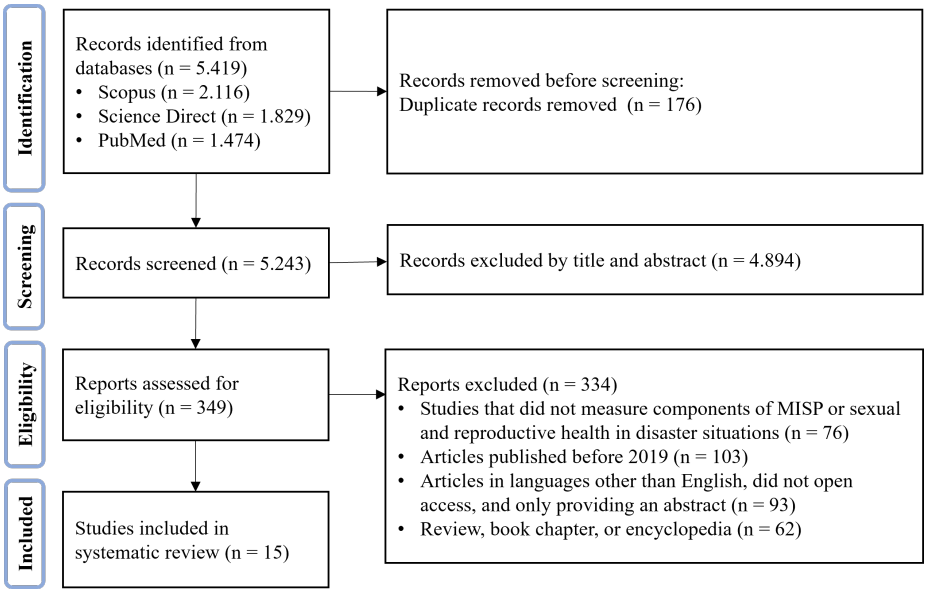

Figure 2. PRISMA Flow Diagram

Overall, the studies that were obtained were conducted in several developing countries. Of the 15 studies, 3 were quantitative with cross-sectional designs, 4 were mixed-methods, and eight were qualitative. The study characteristics are classified in Table 1.

Based on the quality assessment of articles using various tools such as the JBI Critical Appraisal Tools for cross-sectional and qualitative studies and MMAT for mixed-methods studies, it was found that the 15 articles had low bias. This is evidenced by the "yes" answers above 70% for all articles.

Table 1. Characteristic Study

Author, Year	Country	Objective	Methods, Design	MISP Components	Findings
Shariati, 2023	United States	This study examined the increase in frequency and geographic dispersion of domestic violence during the stay-at-home period of the COVID-19 pandemic.	A multi-method approach using quantitative and geospatial analysis	Gender-Based Violence: Domestic violence	There was a notable increase in DV incidents during the initial phase of the quarantine. Increased time at home could lead to higher stress levels and more opportunities for conflicts. The geographic distribution of DV incidents shifted, with some neighborhoods experiencing higher rates than others. Areas with higher economic strain saw more significant increases in DV incidents. This indicates that financial stress, exacerbated by the pandemic, played a crucial role in the rise of DV cases. Interventions in socio-economically vulnerable areas could help mitigate the increase in DV. Policies providing economic relief and mental health support could be particularly effective.
Hadush, 2023	Ethiopia	This study aimed to determine the prevalence of intimate partner violence and identify its contributing factors among married refugee women in Pinyudo refugee camp, Gambella, Ethiopia, in 2021.	Cross-sectional study	Gender-Based Violence: Intimate partner violence, Coordination	Almost half (48.3%) of the participating refugee women experienced intimate partner violence (IPV) in the year preceding the study. The study underscores the importance of economic empowerment and behavioral interventions to improve refugee women's attitudes toward IPV. The findings suggest that enabling refugee women to generate income and providing continuous empowerment and education are crucial steps in reducing the prevalence of IPV in this population. There is an urgent need for targeted interventions by the government, humanitarian organizations, and other stakeholders to address the high levels of IPV among South Sudanese refugee women in Ethiopia.

Svallfors, 2024	Colombia	This study explores the impacts of armed conflict on women's sexual and reproductive health in Colombia, building on a reproductive justice perspective.	Qualitative study using original expert interviews	Gender-based violence, unwanted pregnancy prevention	The analysis reveals that war affects women's sexual and reproductive health in three ways: through violent politicization, collateral damage, and intersectional dimensions. First, multiple armed actors have used women's health as an instrument in politically motivated strategies to increase their power, assigning political meaning to sexuality and reproduction within the context of war. Second, women's health has also suffered from secondary damage of conflict resulting from a decay in healthcare service provision and an unmet need for healthcare services among those affected by sexual and reproductive violence. Third, marginalized women have been particularly affected by a discriminatory nexus of poverty, ethnicity, and geographic inequality.
Svallfors, 2024	Nigeria	This study aimed to investigate the association between conflict, insecurity, and attitudes toward women's and girls' reproductive autonomy in Nigeria.	Cross-sectional study	Sexual and reproductive health: Unwanted pregnancy prevention	Exposure to armed conflict and perceived neighborhood insecurity were associated with more supportive attitudes toward access to safe abortion among both men and women. Among women, conflict exposure was associated with higher support for contraception and the perception that early marriage can provide girls with security. Conflict-affected men were more likely to support a delay in girls' childbearing.
Murphy, 2023	Fiji	This study aimed to explore the experiences of 21 Fijian youth in fulfilling their SRHR when living through multiple natural hazards.	A participatory qualitative study	Sexual and reproductive health on young people	In disaster contexts, immediate priorities such as water, food, and financial insecurity increased risks of transactional early marriage and transactional sex to access these resources. Daily SRHR risks related to the normalization of sexual and gender-based violence and taboos limited youth agencies and influenced their perceptions of disasters and SRHR risks. Findings offer important insights into factors that limited youth SRHR agency before, during, and after disasters.
Cannon, 2023	United States	This study aimed to examine the prevalence of PTSD, perceived stress, and	Qualitative study	Gender-Based Violence: Intimate partner violence	The results showed that those in the probable PTSD group had lower resilience and higher perceived stress compared to those without PTSD. The study highlights the

		individual resilience among IPV survivors in rural Louisiana during the COVID-19 pandemic.			importance of providing targeted services to reduce PTSD among IPV survivors, especially during disasters, to improve their mental health outcomes and resilience.
Jaramillo, 2020	Colombia and Venezuela	This study aimed to explain the level of implementation of the second goal of the MISP, assess the availability of services for migrants who have experienced some type of sexual violence, and understand the perceptions of migrants regarding sexual and gender-based violence.	Qualitative study	Gender-Based violence	The findings reveal that migrant women face significant SGBV risks during their journey and within humanitarian settings. Barriers such as legal status, language barriers, discrimination, and misinformation hinder their access to healthcare services. The study calls for improved healthcare responses, early access to prevention services, and efforts to reduce stigma and misinformation to support SGBV survivors better.
Bhadra, 2022	India	This study explores and understands the impact of disasters and conflicts on the circle of sexuality and the typical issues around the same among the survivors in the context of different types of disasters.	Qualitative study	Sexual and reproductive health: High-risk sexual behaviors	The study highlights that these situations often lead to multiple coercive sexual relationships and high-risk sexual behaviors, which can result in exploitation and abuse. It emphasizes better integrating sexual rights into disaster management policies and practices to ensure adequate interventions and support for affected populations.
Nasar, 2022	Bangladesh	To develop a gender-based vulnerability index (GBVI) to assess the level of vulnerability among at-risk groups in the Rohingya refugee and host communities in Cox's Bazar.	The quantitative and qualitative study	Gender-Based Violence among girls and women	The research findings indicate that women and girls face higher levels of vulnerability compared to men. Several factors contributing to this vulnerability include gender-based violence, limited access to healthcare services, and socio-economic inequality. The study underscores the importance of a holistic approach to providing economic empowerment, education, and improved healthcare services to reduce gender-based vulnerability in the region.
Logie, 2023	Uganda	This study aims to address knowledge gaps regarding lived experiences of sexual violence stigma among refugee adolescents	Qualitative study	Gender-Based Violence among adolescents and youth	Adolescents and youth refugees experience a process of internalizing stigma related to sexual violence, which can negatively affect their identity and mental health. The stigma is not only related to sexual violence but

		and youth in the Bidi-Bidi refugee settlement in Uganda.			also linked to refugee status, creating a complex and layered stigma experience. Stigma towards sexual violence contributes to mental health issues such as anxiety, depression, and high psychological stress among refugee adolescents and youth. It is crucial to develop interventions that consider the cultural, social, and political contexts in refugee settlements to reduce stigma and enhance psychosocial support for survivors of sexual violence.
Dambre, 2022	Worldwide	This study aims to investigate the association between exposure to disasters triggered by natural hazards and higher sexual risk-taking behavior as measured by one of its consequences, increased human immunodeficiency virus (HIV) incidence, at the country level worldwide.	Cross-sectional ecological study with logistic-regression analysis	Human Immunodeficiency Virus (HIV) prevention	There is a relationship between disasters triggered by natural hazards and risky sexual behavior, as well as the role of health systems in managing their global impact. This research highlights the complexity of interactions between these factors and the importance of coordinated health system responses in addressing public health impacts caused by natural disasters.
Sajow, 2020	Indonesia	This study aimed to investigate pregnant women's experiences and community leaders' perspectives on the accessibility and provision of MRH services during the emergency response phase.	Qualitative case study	Maternal and reproductive health services	The 2013 eruption of Mount Sinabung significantly impacted maternal and reproductive health (MRH) services and the health of mothers and children in Indonesia. This research highlights the importance of preparedness, rapid response, and a robust MRH service system to minimize the impact of natural disasters on maternal and child health.
Rostomian, 2023	Armenia	This study aims to describe the health and health-seeking behaviors of the maternal and infant population that coincided with periods of armed conflict in Armenia and Nagorno-Karabakh.	The quantitative and qualitative study	Maternal health	Conflict disrupts healthcare services, including evacuating healthcare facilities and medical personnel. This leads to a decrease in access for pregnant women and babies to prenatal care, safe delivery, and postnatal care. The presence of the COVID-19 pandemic during the conflict further exacerbated the maternal and infant health situation in Armenia. This was caused by the increased burden on the healthcare system and pregnant women's concerns about contracting COVID-19.

Tran, 2020	Democratic Republic of Congo, Bangladesh, and Yemen	This article describes the toolkit design, piloting, and final product.	Qualitative study	Humanitarian response, sexual violence prevention, HIV and STI prevention, maternal and neonatal health, unwanted pregnancy prevention, SRH integrated into primary healthcare	Results suggest that the toolkit enabled facilitators to foster a systematic, participatory, interactive, and inclusive planning process among participants over a two-day workshop. The approach was reportedly practical and time-efficient in producing a joint work plan. The main planning priorities cutting across settings included improving comprehensive SRH services in general, healthcare workforce strengthening, such as midwifery capacity development, increasing community mobilization and engagement, focusing on adolescent SRH, and enhancing maternal and newborn health services in terms of quality, coverage, and referral pathways.
Hande, 2023	Japan	This study aims to examine the role of age in the self-reported quality of life of residents of Okuma.	The quantitative and qualitative study	Elderly healthcare	This study suggests that the quality of life of elderly residents in Okuma may be more affected than that of non-elderly adults following the nuclear disaster. Elderly residents reported poorer physical health compared to non-elderly adults. Elderly residents also had higher levels of anxiety related to the potential health effects of radiation on future generations.

Strengthening coordination and communication is essential for effective MISP implementation. Studies highlighted challenges, such as insufficient training for reproductive health coordinators and limited communication between national and district-level stakeholders. Solutions include capacity-building workshops and enhanced advocacy efforts to improve stakeholder engagement.

Studies revealed a high prevalence of gender-based violence (GBV) in disaster settings, significantly impacting vulnerable groups, including women and adolescents. Key interventions include the provision of women's need kits, capacity building for service providers, and targeted community programs to address stigma and improve access to prevention services.

HIV and STI prevention efforts during disasters often involve providing condoms, counseling, and community education. Innovative approaches, such as utilizing social media for awareness campaigns, have shown promise in increasing knowledge and reducing stigma.

Health crises frequently disrupt maternal and neonatal care, leading to increased morbidity and mortality risks. Studies underscored the importance of accessible antenatal care, skilled birth attendants, and robust health system preparedness to mitigate these impacts.

Adolescents face unique challenges in disaster settings, including limited access to accurate reproductive health information and services. Findings emphasized the need for comprehensive education programs and accessible resources to empower adolescents and reduce risks related to early marriage and transactional sex.

Malnutrition and disrupted feeding practices among toddlers are common in disaster contexts. Strengthening inter-sectoral collaboration and ensuring the availability of nutritional support are critical measures to address these issues.

The elderly population is particularly vulnerable in disasters, facing higher risks of chronic and mental health issues. Ensuring access to healthcare and creating supportive environments are essential for improving their quality of life.

DISCUSSION

Coordination of Reproductive Health MISP

Factors contributing to implementing MISP during the earthquake disaster in Nepal include disaster preparedness, leadership, and responsibility from stakeholders at the international, national, and district levels, resource mobilization, and solid national-level coordination. Reproductive health services, community outreach programs, and logistics management also play essential roles. However, training for reproductive health coordinators is inadequate. The low level of communication between stakeholders at the national and district levels, insufficient resources, lack of training, and awareness among affected refugees to utilize reproductive health facilities are also significant challenges (10). These challenges can be addressed through preparedness by conducting workshops implementing the WHO framework with six components: (1) financing; (2) health workforce; (3) information systems; (4) medical products and technology; (5) leadership/governance; and (6) service delivery (11).

The role of MISP coordinators in reproductive health is crucial to ensure the quality and accessibility of reproductive health services. Strengthening can be done through continuous coordination, socialization, and training, as well as strengthening networks with stakeholders with authority in affected areas through advocacy (12,13).

Prevention of Sexual Violence

A Staggering 19% of disaster victims fall within the 10-19 age group, placing them at heightened risk of sexual violence, child marriage, and human trafficking (8). The high incidence of gender-based violence in displacement cams has severely restricted the mobility of vulnerable populations, thereby hindering their access to essential services such as education and healthcare (14).

Gender inequality and gender-based violence remain highly prevalent in Colombia. Armed conflict exacerbates this situation, which, if not prevented, can lead to unwanted pregnancies, sexually transmitted infections (STIs), and other health complications (15,16). Persistent gender inequality and patriarchal beliefs increase the risk, particularly for young women (17,18). More than half of women aged 15 and older in Fiji have experienced gender-based violence and sexual violence, a figure significantly higher than the global average of 26% (19).

Additionally, women in Kathmandu refugee camps reported feeling unsafe when fetching water or using latrines, even within the refugee camps. However, healthcare providers noted that many cases go unreported due to the shame and stigma attached to sexual violence survivors (10).

Assessment and mapping of sexual violence prevention services, capacity building, and the provision of women's need kits are necessary for preventing sexual violence (20). These measures are crucial to ensure that available services are effective and targeted and to enhance the competence and resources available to service providers and communities by developing modules, conducting orientation, and training related to sexual violence prevention (21).

Prevention of HIV and STI Transmission

Prevention services for STIs at health service centers during health crises can be carried out by providing condoms for both men and women, counseling STI patients, which includes education about HIV infection prevention, and notifying the sexual partners of individuals at risk of the disease (5). Educational activities are necessary to increase community knowledge about the prevention of HIV and STI transmission in disaster situations. This knowledge enhancement will be more optimal with the support of facilities and logistics, good sanitation, and the provision of reproductive health service tents by healthcare workers and the government (22) (23–26).

The existence of social media can also serve as an intermediary for developing HIV and STI prevention interventions (27). Some effective methods used in utilizing social media for HIV/AIDS infection prevention efforts include the Network Monitoring System (NMS) and direct interventions, which have a significant impact, such as increasing sexual knowledge, awareness in HIV/AIDS prevention and transmission, minimizing stigma towards people living with HIV/AIDS, and obtaining a tracing target flow for educational purposes (28).

Several studies have confirmed an increase in HIV cases during disasters. For instance, the United States witnessed a surge in sexually transmitted infections (STIs) among adolescent following Hurricane Katrina (5). Additionally, the rise in rape and sexual assault cases in Gujarat, India has contributed to a higher risk of HIV/AIDS (28).

A comprehensive approach to reproductive health services can reduce the transmission of HIV and STIs. Providing case assessments for STIs and HIV, identifying the need for prevention and treatment services, designing guidelines and training to prevent and address HIV and STIs, and providing prevention and treatment kits for STIs and HIV are efforts that can be made to avoid HIV and STIs (29).

Prevention of Maternal and Neonatal Morbidity and Mortality

The paralysis of health facilities and the difficulty of accessing services prevent pregnant women from receiving complete Antenatal Care (ANC). This situation increases the risk of complications during and after delivery, so pregnant women and those giving birth who are earthquake victims in North Lombok Regency cannot minimize the problems that may arise during delivery or the emergence of new issues postpartum (30).

Statistical estimates suggest that 4% of the population affected by disaster are pregnant women at any given time, and 15-20% pregnant women experience complications during pregnancy and childbirth (8). UNFPA data from 2018 highlights the severity of this issue, reporting over 500 maternal deaths during emergencies (6).

Preventing maternal death is one of the most important goals of maternal and neonatal services (31,32). In its implementation, it is not only midwives or healthcare workers who are crucial in handling natural disasters and neonatal emergencies, but the Regional Disaster Management Agency (BPBD) is also essential (33,34). This is evident in disaster preparedness activities such as socialization, where BPBD is responsible for forming groups at each location to provide training. This indicates that the BPBD directly handles maternal and neonatal emergencies (35).

Prevention of Unwanted Pregnancies

Disasters can increase the need for contraceptives and abortions as efforts to prevent unwanted pregnancies and childbirth. This is because they believe disasters are not the right time to have children. Additionally, women's reproductive health is severely threatened by the increased risk of unwanted pregnancies and inadequate access to safe and legal abortions for children born during disasters (16).

The enhancement of contraceptive services, counseling, and comprehensive sexuality education positively correlates with the reduction of unwanted pregnancies. It is also associated with an overall improvement in the health and well-being of adolescents (16).

Adolescent Reproductive Health and Adolescent Engagement

Research conducted in Fiji indicates that Fijian adolescents experience injustice in their reproductive and sexual health rights, influenced by social factors including taboos, stigma, and societal expectations. Sexual violence has been normalized, as many adolescents grow up in environments where they frequently experience sexual, emotional, and verbal abuse (19). Limited knowledge about reproductive and sexual health results in adolescents being unaware of the risks in non-disaster situations, thereby increasing their vulnerability during disasters (17). Adolescents also report that limited and inconsistent access to reproductive and sexual health information drives them to seek information from unsafe sources, highlighting the need for accurate and easily accessible reproductive and sexual health information (36–38). Adolescents should have acces to basic information about reproductive and sexual health through comprehensive sexuality education (39).

Another challenge faced during disasters in Fiji is access to clean water. The lack of clean water forces adolescents to travel to rivers to manage menstrual health, aiming to minimize the risk of sexual and gender-based violence. Adolescents also report that resource constraints lead them to engage in transactional sex to meet basic needs (19).

A case study of Syrian refugees revealed that child and consanguineous marriage accounted for 56%, while adolescent marriages reached 49%. Additionally, 39% of Syrian refugees aged 15-19 were already mothers or pregnant (40).

Reproductive health is an early indicator of adolescent well-being. The right to reproductive and sexual health emphasizes that every adolescent should have the ability to realize these rights freely, without coercion, discrimination, violence, or stigma. Meeting basic needs often increases risks related to adolescent reproductive and sexual health, as adolescents may be compelled to engage in transactional early marriages or transactional sex to access resources. Adolescents' ability to meet contraceptive needs and delay pregnancy or early marriage depends on access to resources (financial), opportunities (education), and services (reproductive and sexual health services) (18).

Minimum Health Services for Toddlers

The data reveals that infants constitute 13% of the disaster-affected refugee population (8). Issues affecting infants and toddlers, such as malnutrition caused by lack of breastfeeding (ASI) and complementary feeding (MP-ASI) due to separation from their mothers, are prevalent. Additionally, worsening nutritional status within certain community groups, delays in food aid, lack of continuity, and limited availability of local food exacerbate these conditions. Addressing these issues requires strengthening inter-sectoral and inter-program cooperation to optimize toddler nutrition management during disasters (41).

A critical concern is also the absence of specific budgets for toddler nutrition needs during disasters. This impacts the adequacy of food provided to toddlers in terms of type, quantity, and quality, as well as the limited availability of specialized personnel to handle toddler nutrition. Insufficient knowledge in preparing complementary feeding (MP-ASI) or snacks for infants and children aged above six months, under two years (toddlers), and five years (young children) can increase the risk of illness and death within these groups (42).

Minimum Health Services for the Elderly

The global elderly population is experiencing significant growth. According to the World Population Prospects 2019, developing countries currently account for approximately 60% of the world's rapidly aging population. This proportion is projected to increase to 80% by 2050 (43). In disaster situations, the elderly are considered a highly vulnerable population, necessitating preparedness as a critical factor in mitigating their impacts. Low awareness of disaster preparedness and behavioral responses among the elderly in middle-income countries exacerbates their conditions (44).

Elderly individuals are a vulnerable group with higher risks of illness and death compared to younger populations, especially during and after disasters. Disasters can impact them with chronic, mental, and physical disturbances. Establishing access to healthcare services for the elderly is crucial to improving their health conditions and preventing chronic disease progression. One such service involves enhancing supportive environments, such as peer interactions, which can enhance the health quality of the elderly.

Limitations and Cautions

The review, while based on rigorous selection criteria, primarily relied on studies published within the last five years, potentially excluding older but foundational research. Moreover, the analyzed studies were disproportionately conducted in specific regions, limiting the representation of global disaster contexts and the variability in implementing the Minimum Initial Service Package (MISP). Additionally, certain components, such as elderly healthcare and toddler nutrition during disasters, were underrepresented, restricting the ability to draw comprehensive conclusions for these areas.

Recommendations for Future Research

Future research should focus on exploring the long-term outcomes of Minimum Initial Service Package (MISP) interventions to assess their sustainability and effectiveness over time. Studies in underrepresented regions are essential to capture diverse disaster contexts and enhance the global applicability of findings on MISP implementation. Additionally, prioritizing research on lesser-studied components, such as elderly care and toddler nutrition, is crucial for developing targeted strategies for these vulnerable groups. Investigating how MISP implementation influences policy development and health outcomes in disaster settings can strengthen advocacy efforts. Furthermore, examining the role of technology, including mobile health applications and social media, could provide insights into improving the accessibility and delivery of MISP components.

CONCLUSION

This research provides a comprehensive overview of the implementation of the eight components of MISP implemented across various countries. Strengthening coordination, socialization, training, and advocacy are necessary to enhance the effectiveness of MISP. Assessment and mapping of services, capacity building, provision of women's needs kits, development of modules, orientation, and training related to sexual violence prevention are crucial to improving competencies and resources for service providers and communities. Furthermore, evaluation of STIs and HIV cases, meeting prevention and treatment needs, and guidelines for HIV and STI prevention training are also necessary to prevent the spread of HIV and STIs. Pregnant women and newborns require special care in health crises, so those responsible for maternal and neonatal components must ensure access to necessary health services.

Adolescent reproductive health is an early indicator of well-being. Thus, the rights to adolescent reproductive and sexual health must be upheld and respected. Meeting adolescents' basic needs is crucial to prevent risks to their reproductive and sexual health. Additionally, improving access to toddler nutrition and enhancing social interactions and supportive environments are needed to improve the quality of life for the elderly. Implementing all PPAM components in disaster situations has proven to enhance the quality of health services, particularly reproductive health.

AUTHOR'S CONTRIBUTION STATEMENT

Efa Nugroho, Alfiana Ainun Nisa, and Dwi Yunanto Hermawan contributed to the planning and design of the study, data collection, and drafting of the manuscript. Annisa Novanda and Rafidha Nur Alifah were responsible for data analysis, interpretation of results, and substantial revision to the manuscript. Efa Nugroho and Bambang Budi Raharjo contributed to the literature review, validation of the methodology, and final editing of the manuscript. All authors have read and approved the final version of the manuscript for submission.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest related to this study or its publication. All data and findings presented are independent and have no been influenced by sponsors or any other institutions.

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