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ORIGINAL RESEARCH

How Ready Are Aceh and West Sumatra to Implement Reproductive Health Services During Disasters?

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ABSTRACT

Introduction: Indonesia's recurrent disasters can disrupt routine health services and threaten continuity of sexual and reproductive health (SRH) care. Pre-crisis readiness to activate the Minimum Initial Service Package (MISP), adapted in Indonesia as the *Paket Pelayanan Awal Minimum* (PPAM), is therefore important in disaster-prone provinces such as Aceh and West Sumatra. This study compared readiness-related capacities for MISP/PPAM implementation in Aceh and West Sumatra and identified shared and province-specific policy, coordination, data, resources, and service-related gaps.

Methods: A comparative province-level structured consensus assessment was conducted from October 2024 to January 2025. Sixteen purposively selected multisectoral stakeholders in each province (32 in total) participated in facilitated focus group discussions using an Indonesian adaptation of the 2020 MISP Readiness Assessment. The adapted instrument contained 73 items. Province-level responses, supporting evidence, focus group minutes, and action-planning outputs were consolidated into a domain-by-province matrix. Domain categories were retained as consensus-based categorical judgments and were not treated as interval-scale scores. A structured narrative synthesis was used to interpret the basis of each rating.

Results: Both provinces received an "Adequate" rating for the policy, coordination, data, and resource domain and favorable "Good" ratings across most service-related domains. In Aceh, adolescent reproductive health and minimum health services for children under five were rated "Adequate"; the remaining service-related domains were rated "Good." West Sumatra received "Good" ratings across all service-related domains. Important residual gaps included incomplete crisis-specific SRH governance, limited formal engagement of non-government actors, incomplete integration of PPAM/MISP indicators and sex-, age-, and disability-disaggregated data, access barriers for marginalized groups, and partially formalized referral pathways. Because many service-domain items assess routine service availability during stable periods, these favorable ratings represent readiness-related capacity rather than demonstrated emergency activation or service performance.

Conclusion: Aceh and West Sumatra show favorable readiness-related capacity across most assessed service domains, but crisis-specific governance, coordination, data, referral, and inclusion gaps remain. The findings support targeted preparedness strengthening without implying that the assessment demonstrated real-time MISP activation, timeliness, quality, or equity during an actual emergency.

Keywords: Disaster Situation; Humanitarian Setting; Minimum Initial Service Package; Public Health; Reproductive Health Services

INTRODUCTION

Indonesia's need to strengthen the continuity of sexual and reproductive health (SRH) during disasters is substantial. In 2024, the National Disaster Management Agency (BNPB) recorded 3,472 disasters, affecting and displacing 8,136,271 people and causing 540 deaths, underscoring how often routine systems (including health services) are disrupted (1,2). In these settings, SRH needs frequently rise while access to safe delivery, emergency obstetric/newborn care, and post-rape care is constrained by damaged infrastructure, disrupted supply chains, and weakened referral pathways; evidence from disaster-affected contexts shows that service disruption can be severe immediately after major events, with disproportionate impacts in the hardest hit areas (3,4). Evidence synthesis further shows that disasters and humanitarian shocks can compromise the continuity of broader SRH services, including contraception, maternal care, and crisis-responsive reproductive health programming, with particularly serious consequences for women, newborns, and crisis-affected populations (5,6).

Aceh and West Sumatra are disaster-prone settings where pre-crisis SRH readiness is particularly important. According to the 2024 Indonesian Disaster Risk Index (IRBI), Aceh was classified as high risk (144.29), whereas West Sumatra was classified as moderate risk (142.55). Both provinces face recurrent hazards, including earthquakes, floods, extreme weather, landslides, and volcanic impacts (1,2). The late-2025 floods and landslides occurred after the assessment. IHCP Situation Report No. 7, issued on 2 January 2026, cited BNPB figures for Aceh, North Sumatra and West Sumatra. As of 1 January, 380,360 people were displaced, 1,157 had died and 165 were missing. Of those displaced, 356,655 were in Aceh and 9,935 in West Sumatra. Across the affected population in all three provinces, the report identified 107,092 pregnant women, 108,413 breastfeeding mothers, 106,023 infants and 418,941 children under five (7). These figures illustrate the scale of maternal, newborn and SRH service needs during the emergency.

A central global standard for protecting SRH at crisis onset is the Minimum Initial Service Package (MISP), a prioritized set of life-saving actions to be implemented within 48 hours of an emergency (8). As consolidated by WHO's Health Cluster and the Inter-Agency Working Group (IAWG), MISP prioritizes leadership/coordination; prevention and response to sexual violence; reduction of HIV/STI morbidity and mortality; prevention of excess maternal and newborn morbidity and mortality; prevention of unintended pregnancies; and planning for comprehensive SRH integrated into primary health care as soon as feasible, including safe abortion care to the full extent of the law (9,10). Operationally, "readiness" means that systems are pre-positioned to rapidly activate these functions through enabling policies, coordination mechanisms, trained staff, data systems, referral/transport arrangements, and commodities/logistics.

In Indonesia, MISP has been adapted into Paket Pelayanan Awal Minimum (PPAM) since 2014, yet implementation has been described as not meeting expectations, linked to uneven stakeholder understanding and the need for broader strengthening and dissemination (11–13). Complementary national guidance, including an English operational guideline supported by UNFPA, has also been developed (14). Despite this, comparative, subnational, pre-crisis readiness benchmarking and identification of high-leverage gaps for rapid activation remain limited, even though recurring bottlenecks (coordination, integration into routine systems, training, and logistics) are widely documented and align with global preparedness priorities (15).

Accordingly, this study aimed to assess readiness-related capacities across PPAM/MISP domains in Aceh and West Sumatra, compare shared and province-specific patterns of strengths and gaps, and identify evidence-informed actions for strengthening rapid SRH service activation and continuity. The contribution of this study lies in its comparative and policy-oriented analysis rather than in the readiness assessment alone. First, it directly compares two disaster-prone provincial settings using a common assessment framework to distinguish shared from province-specific patterns. Second, it moves beyond categorical ratings by synthesizing the policy, coordination, data, resource, and service-related evidence underlying those ratings. Third, it translates the comparative findings into cross-cutting and province-specific preparedness actions while explicitly distinguishing routine service availability from demonstrated crisis-specific operational performance.

METHODS

Study design

This study used a comparative province-level structured consensus readiness assessment with a descriptive narrative synthesis. It followed the MISP Readiness Assessment (MRA) process set out in the 2020 field-testing guide (16) and was conducted in Aceh and West Sumatra between October 2024 and January 2025, with participant data collection undertaken from 8 to 31 December 2024. The primary unit of analysis was the province-level readiness profile. Stakeholders contributed institutional and technical knowledge to jointly complete and review the provincial assessment. Facilitated group discussions served as a structured consensus mechanism rather than independent individual questionnaires or stand-alone qualitative interviews.

During manuscript revision, we used the Standards for Reporting Qualitative Research (SRQR) by O'Brien et al (17). We applied the items relevant to stakeholder selection, facilitation, consensus and the synthesis of provincial records. Each workshop produced one jointly reviewed profile. Supplementary Checklist S2 explains how each SRQR item applies to this unit of analysis.

Study setting and comparative rationale

Aceh and West Sumatra were selected a priori, before review of the readiness results. Both provinces share recurrent exposure to multiple hazards, particularly earthquakes and hydrometeorological events, although their 2024 IRBI risk

classifications differ (Aceh: high; West Sumatra: moderate) (1). Their broadly comparable hazard profiles provide a useful basis for examining whether similar external risk contexts are accompanied by convergent or divergent preparedness arrangements in provincial governance and health services. The comparison is analytical rather than nationally representative; findings are intended to inform preparedness in these two provinces and comparable high-risk settings, not to estimate readiness across Indonesia.

Participants and recruitment

Participants were purposively recruited to ensure multisectoral representation of institutions with direct responsibility for disaster management, SRH service delivery, referral, protection, or humanitarian response. Sixteen stakeholders were invited in each province, and all 16 participated, giving a total of 32 participants. One representative was selected from each participating institution or organization on the basis of institutional mandate, technical responsibility, and ability to provide program-level information relevant to PPAM/MISP readiness. Representation included the Provincial Health Office, provincial disaster management agency (BPBD/BPBA), DP3AKB/related women and population agencies, professional organizations (including IDI, IBI, and IAKMI), civil-society and humanitarian organizations (including PKBI, PMI, Fatayat NU, MDMC, and KPA), and other community-based or disaster-response organizations relevant to the provincial context. The same stakeholder group participated in the facilitated assessment and validation discussions. No participant-level outcomes were analyzed.

Readiness assessment instrument

The International Planned Parenthood Federation produced the original MRA with the Inter-Agency Working Group on Reproductive Health in Crises and the United Nations Population Fund. The guide was designed for joint completion by stakeholders at the national or subnational level. Most items allow “Yes,” “No” or “Don’t know” responses. Selected capacity items use “Ideal,” “Minimum needed” or “Insufficient.” A comment field records supporting information.

The 2020 MRA field-testing guide cited above contains 58 numbered questions. For the provincial workshops, stakeholders completed a 73-item adaptation in Bahasa Indonesia. Section I retained 21 questions on policy, coordination, SRH data and resources. Section II contained 52 service questions, including 15 local additions.

The assessment report by the Indonesian Planned Parenthood Association (PKBI) and Universitas Negeri Semarang (UNNES) documents three additional five-item domains (p. 10, Table 1). Q53–Q57 address adolescent reproductive health, Q58–Q62 cover minimum health services for children under five, and Q63–Q67 cover minimum health services for older people. The six safe abortion care questions moved from Q53–Q58 in the original MRA to Q68–Q73 in the adaptation. Table 1 below summarizes the structure. Supplementary Table S1 gives the sources for the mapping. The project report gives the item ranges without reproducing the individual questions. The supplied Indonesian spreadsheet also retains village- and district-level administrative wording and a Q68 skip reference to Q54–Q58, despite the adapted safe-abortion section being numbered Q68–Q73. The available records do not establish whether these prompts or that skip instruction were applied during the provincial workshops.

Table 1. Structure of the Adapted MISP/PPAM Readiness Assessment

Section/domain	Item range	No. of items	Content
Section 0	General information	-	Participants, partners involved, and geographic scope.
Section I	Q1-Q21	21	Policies/plans (Q1-Q7); coordination (Q8-Q13); SRH data (Q14-Q17); resources (Q18-Q21).
Section II: PPAM general	Q22-Q30	9	General readiness-related service capacity.
PPAM/MISP Objective 2	Q31-Q36	6	Prevention of sexual violence and response to survivors.
PPAM/MISP Objective 3	Q37-Q42	6	HIV and other STI prevention and management.
PPAM/MISP Objective 4	Q43-Q47	5	Maternal and newborn morbidity and mortality.
PPAM/MISP Objective 5	Q48-Q52	5	Prevention of unintended pregnancies.
Adapted PPAM domain 6	Q53-Q57	5	Adolescent reproductive health services and engagement.
Adapted PPAM domain 7	Q58-Q62	5	Minimum health services for children under five.
Adapted PPAM domain 8	Q63-Q67	5	Minimum health services for older people.
Other priority activity	Q68-Q73	6	Safe abortion care within applicable law.

Data collection and consensus process

Part 1 of the 2020 MRA field-testing guide sets out six steps. Partners first identify the lead institutions and participants, assemble supporting documents and complete the questionnaire. They then analyze the responses and prioritize gaps, develop an action plan and agree on follow-up (16). In each provincial workshop, facilitators guided participants through the 73 items. Stakeholders contributed within their institutional mandates and reviewed the responses together to produce one assessment for the province.

Facilitation was provided by representatives of PKBI National, the Indonesian Ministry of Health, and the Universitas Negeri Semarang research team using a standardized facilitation plan based on the MRA guidance. Supporting materials included, where available, provincial disaster-management policies and plans, SRH/PPAM guidance, administrative or program data, service and referral documentation, and other institutional records relevant to the item under discussion. When differing views

emerged, facilitators sought clarification from the institution(s) with direct responsibility for the relevant policy or service and requested supporting documentation where available. Agreement was reached through facilitated discussion rather than voting. Areas of uncertainty, including “Don’t know” responses, were retained in the assessment notes as information gaps rather than converted into evidence of absence. FGD minutes and action-planning records were maintained as an audit trail.

Outcome classification and handling of uncertainty

The primary outcome was the province-level readiness profile across system and service-related domains. The MRA itself does not produce a validated continuous readiness score. Item-level evidence therefore remained categorical. “Don’t know” was retained as an information gap and was not statistically imputed. Likewise, no weighting scheme or arithmetic mean was applied to the ordinal response categories.

For the provincial outputs, domain-level judgments were summarized as “Good” or “Adequate” after facilitated review of the full item pattern, comments, supporting evidence, and contextual discussion. These labels were consensus-based summary judgments rather than categories generated from a fixed numerical cut-off. For interpretation in this article, “Good” indicates a favorable readiness-related profile with most expected capacities judged to be present, although residual gaps may remain; “Adequate” indicates that basic capacity exists but important gaps remain that could constrain crisis-specific implementation. No domain in the two provinces was classified below “Adequate.” Numeric recoding and mean scores were not used in the present analysis or presentation.

Data management and analysis

All province-level responses, comment fields, FGD minutes, supporting evidence, and action-planning notes were consolidated into a domain-by-province matrix. Descriptive cross-case comparison was used to identify shared and province-specific patterns. In addition, the research team conducted a structured narrative synthesis of the assessment outputs, organized a priori according to the MRA domains. This was not treated as a separate inductive qualitative study. The team reviewed the evidence underlying each domain rating, summarized constraints and enabling factors, and resolved differences in interpretation through discussion. The domain matrix, source notes, and FGD minutes provided an audit trail for the synthesis.

Because Section II of the MRA deliberately draws heavily on services available during stable periods to assess what could potentially be leveraged during emergencies, service-domain ratings were interpreted as readiness-related capacities rather than direct measures of actual emergency activation, timeliness, service quality, or equitable delivery. This interpretive boundary was applied throughout the Results, Discussion, and Conclusion.

Ethical approval

The overall assessment was conducted between 1 October 2024 and 31 January 2025. Program planning and preparatory activities took place from 1 October to 30 November 2024 and did not involve participant data collection. The study received ethical approval from the Health Research Ethics Committee of Universitas Negeri Semarang (No. 673/KEPK/FK/KLE/2024; 2 December 2024). Data collection, including the facilitated focus group discussions, was conducted from 8 to 31 December 2024, after ethical approval had been granted. Data analysis and dissemination were undertaken from 1 to 31 January 2025. All participants received information about the assessment and provided written informed consent before participation. Participation was voluntary. During the multisectoral focus group discussions, facilitators explained that findings would be reported at the institutional and provincial levels without attributing individual contributions to named participants. Sensitive information concerning gender-based violence, referral pathways, and other protected services was summarized at the system level. No survivor-identifying information or patient-level data were collected.

RESULTS

Analytic sample and data completeness

A total of 32 stakeholders participated: 16 in Aceh and 16 in West Sumatra. All invited participants attended the provincial assessment process, and the planned government, professional, civil-society, humanitarian, and community sectors were represented. Each province-level assessment addressed all 73 adapted MRA items. “Don’t know” was an allowable substantive response and was retained as an information gap rather than treated as a missing questionnaire item. The comparative analysis therefore used two complete province-level readiness profiles supported by the associated comments, FGD minutes, and documentary evidence.

Comparative readiness profile

Both provinces received an “Adequate” rating for the combined policy, coordination, data, and resource domain. In contrast, most service-related domains received a “Good” rating. In Aceh, the adapted adolescent reproductive health domain and minimum health services for children under five were rated “Adequate,” while all other service-related domains were rated “Good.” In West Sumatra, all service-related domains were rated “Good.” Figure 1 summarizes the categorical readiness profiles, while Table 2 presents the number of contributing items and the principal evidence used to interpret each domain.

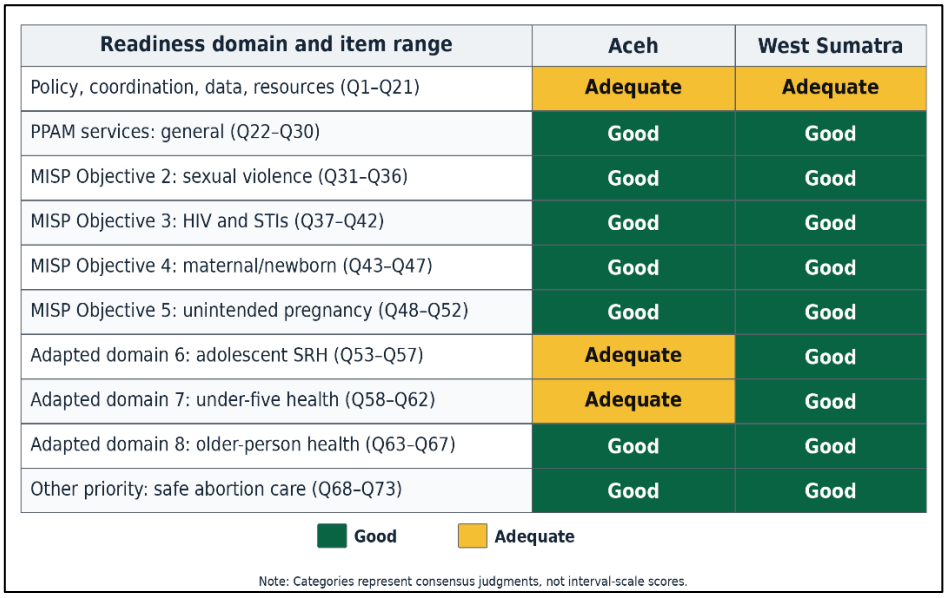

Figure 1. Comparative Categorical MISP/PPAM Readiness Profiles of Aceh and West Sumatra

Table 2. Comparative Readiness Profile and Principal Evidence by Domain

Domain (item range; n)	Aceh	West Sumatra
Policy, coordination, data and resources (Q1-Q21; n=21)	ADEQUATE. General disaster-management policy and provincial preparedness arrangements were present, but crisis-specific SRH governance remained incomplete. Gaps included the absence of a dedicated SRH-in-crises working mechanism, limited formal engagement of non-government actors, and incomplete integration of PPAM/MISP indicators and sex-, age-, and disability-disaggregated data.	ADEQUATE. Relevant policy and coordination arrangements existed, but the assessment identified a need for stronger formalization, dissemination, and consistent operationalization across settings.
PPAM services: general (Q22-Q30; n=9)	GOOD. Routine SRH service mechanisms, trained providers, communication channels, and digital/telemedicine options were available. Uncertainty remained around some PPAM commodities and access for marginalized groups, including people with disabilities and people requiring ARV.	GOOD. Routine service platforms and communication mechanisms were available; access barriers for marginalized groups were nevertheless noted.
Objective 2: sexual violence (Q31-Q36; n=6)	GOOD. GBV service actors and safe/private service spaces were available. Emergency referral and cross-sector coordination were identified as areas needing further strengthening.	GOOD. Multiple government, civil-society, health, and legal actors were involved, but referral pathways were partial and not consistently formalized or documented.
Objective 3: HIV and other STIs (Q37-Q42; n=6)	GOOD. HIV/STI services and ARV referral pathways existed across health facilities. Gaps included uneven availability of selected commodities and post-exposure prophylaxis in some facilities.	GOOD. HIV/STI prevention and treatment capacity was judged generally available, with facility-level variability requiring continued preparedness attention.
Objective 4: maternal and newborn health (Q43-Q47; n=5)	GOOD. Safe-delivery and obstetric/neonatal referral arrangements existed, although limitations in qualified personnel and PONED/PONEK-related capacity were noted.	GOOD. Existing maternal and newborn service platforms were judged capable of supporting preparedness, with the need to maintain referral, staffing, and logistics under crisis conditions.
Objective 5: unintended pregnancy (Q48-Q52; n=5)	GOOD. Short- and long-acting contraceptive methods were available through public and private providers; crisis continuity and uptake remained areas for strengthening.	GOOD. Contraceptive services and commodities were judged broadly available through routine service channels that could be leveraged during emergencies.
Adapted PPAM domain 6: adolescent reproductive health (Q53-Q57; n=5)	ADEQUATE. Adolescent-friendly services and referral channels existed, but contraceptive access for adolescents, youth engagement in coordination, and service mapping were incomplete.	GOOD. The province-level assessment judged adolescent SRH service capacity favorable overall, with no gap sufficient to reduce the domain category.
Adapted PPAM domain 7: health services for children under five (Q58-Q62; n=5)	ADEQUATE. Basic child-health services were available through Puskesmas, Posyandu, clinics, and referral transport, but referral procedures were not fully standardized and selected protection-related gaps remained.	GOOD. Basic under-five health services and supporting service channels were judged broadly available for preparedness purposes.
Adapted PPAM domain 8: health services for older people (Q63-Q67; n=5)	GOOD. Existing primary-care and community service channels for older people were judged broadly available to support crisis preparedness.	GOOD. Existing service channels for older people were judged broadly available, while continuity during emergencies remained dependent on local activation arrangements.
Other priority activity: safe abortion care within applicable law (Q68-Q73; n=6)	GOOD. Lawful services were reported as available at referral facilities, but access, qualified personnel, and emergency referral arrangements were limited.	GOOD. Services were reported as available within applicable law, while referral pathways and access during emergency conditions were not yet optimal.

Cross-province interpretation

The most consistent shared finding was not that service systems had been proven more operationally ready than policy systems, but that service-related domains received more favorable assessment labels than the policy domain. This difference requires cautious interpretation because the two sets of domains do not measure identical constructs. Many service questions intentionally assess routine services available during stable periods to determine what could be leveraged during a crisis, whereas the policy and coordination questions more directly assess preparedness architecture. The apparent policy-service contrast may therefore reflect both a genuine institutionalization gap and measurement asymmetry within the MRA framework. Aceh showed a distinctive concentration of residual gaps in crisis-specific governance, inclusive data, adolescent SRH, and services for children under five. The province also reported access barriers affecting marginalized groups and uncertainty around selected commodities. West Sumatra showed a more uniformly favorable service-domain profile, but its “Adequate” policy rating and partially formalized GBV and other sensitive-service referral pathways indicated that favorable routine capacity did not necessarily equate to fully specified emergency activation arrangements.

DISCUSSION

Interpretation of key findings

This comparative assessment identified favorable readiness-related capacity across most PPAM/MISP service domains in Aceh and West Sumatra, while the policy, coordination, data, and resource domain was rated only “Adequate” in both provinces. These findings should not be interpreted as showing that either province has demonstrated the ability to activate and deliver all MISP services effectively during an actual disaster. Rather, they indicate that substantial routine and preparedness-related capacities exist that could potentially be leveraged, alongside crisis-specific governance and referral gaps that warrant strengthening.

The policy-service pattern can be understood in two complementary ways. First, it may reflect an implementation and institutionalization gap: routine SRH programs, facilities, personnel, and commodities can exist without equally formalized emergency triggers, role assignments, contingency procedures, referral protocols, and coordination structures. Humanitarian SRH literature similarly emphasizes that service continuity depends on preparedness planning and integration with health-system strengthening, not service availability alone (18,19). Second, the pattern may partly arise from the architecture of the MRA itself. Service items frequently assess stable-period availability, while policy and coordination items more directly interrogate crisis-specific arrangements. The resulting domain labels should therefore be compared descriptively rather than interpreted as equivalent quantitative constructs.

The provincial profiles also differed in meaningful ways. Aceh’s lower ratings for adolescent reproductive health and minimum health services for children under five suggest that routine availability was less consistently matched by referral standardization, youth engagement, protection considerations, and crisis-specific planning in these age-specific domains. West Sumatra showed favorable ratings across all service-related domains, yet partially documented referral arrangements for GBV and other sensitive services illustrate how a “Good” domain category can coexist with operational vulnerabilities. These differences reinforce the value of examining the evidence beneath summary labels rather than treating the category itself as a complete measure of preparedness.

Comparison with previous studies

Experience after the Nepal earthquake showed that leadership, coordination, preparedness planning, and logistics were critical to consistent MISP implementation, while weaknesses in enabling functions contributed to delays and fragmentation (20). Evaluation among Syrian refugees in Jordan likewise documented uneven implementation across MISP components and highlighted the importance of coordination and referral systems (21). Systematic reviews have similarly identified workforce readiness, supplies, referral mechanisms, and integration into routine health systems as recurring determinants of SRH performance in humanitarian crises (22,23).

In Aceh, stakeholders identified gaps in youth involvement and service mapping. Evidence syntheses have examined barriers affecting adolescent SRH services, youth participation in disaster settings, and staffing and referral for newborn care in humanitarian settings (24–26). Desrosiers et al. further reviewed sexual and reproductive health interventions for young people in humanitarian and lower- and middle-income country settings (27). In West Sumatra, several agencies provided GBV services, yet referral arrangements were only partly documented. Raftery et al. similarly identified coordination across agencies as important to service provision in emergencies (28).

The limitations surrounding safe abortion referral readiness in both provinces should likewise be understood within legal, protocol, workforce, and referral-system constraints documented in humanitarian settings (29,30). The need to protect contraceptive continuity and integrate context-appropriate self-care and family-planning options into preparedness planning is also supported by recent humanitarian SRH literature (31,32). Finally, the incomplete integration of PPAM/MISP indicators and disaggregated data identified particularly in Aceh reflects a broader challenge for humanitarian SRH monitoring, where weak measurement can impair early targeting, equity analysis, and accountability (33).

Practical implications

The findings support several evidence-informed preparedness actions rather than a ranked hierarchy of priorities. First, provincial governments can strengthen crisis-specific SRH governance by clarifying PPAM/MISP roles, decision authority, coordination arrangements, and activation triggers within disaster and contingency plans. Second, referral pathways for GBV, maternal/newborn emergencies, and other sensitive services should be formally documented, tested, and

communicated across participating sectors. Third, routine and rapid-assessment information systems should institutionalize PPAM/MISP indicators and sex-, age-, and disability-disaggregated data. Fourth, preparedness planning should explicitly address access for marginalized groups and age-specific service gaps, including adolescents and children under five in Aceh. Fifth, preparedness exercises should test whether routine capacities can be mobilized rapidly under disrupted staffing, logistics, transport, and communication conditions.

The two provincial workshops identified gaps locally. The cross-province analysis did not rank those gaps using a common numerical score. Provinces can therefore sequence actions according to their hazards and available resources. The inter-agency field manual and WHO guidance define essential MISP services, the review by Broaddus-Shea et al. identifies indicators for monitoring SRH services, and the research agenda by Nam et al. illustrates how stakeholders can identify shared priorities (8,9,31,33,34).

Strengths and limitations

A strength of this study is the use of a common, structured MRA framework across two disaster-prone provinces combined with multisectoral consensus discussion and a transparent domain-by-province evidence matrix. The analysis also distinguishes category labels from their underlying evidence and explicitly separates readiness-related routine capacity from demonstrated operational performance.

Several limitations should be considered. First, readiness was inferred from a structured stakeholder assessment and facilitated consensus process; the findings therefore depend on the knowledge, institutional perspectives, and evidence available to participants and facilitators. Because facilitators included representatives of institutions involved in the assessment, participants may have been reluctant to challenge an institutional account during the group discussion. Second, the “Good” and “Adequate” domain labels are consensus-based summaries without validated numerical thresholds, which can compress meaningful within-domain variation. Third, many service-domain items assess services available during stable periods, whereas policy and coordination items more directly address crisis-specific preparedness; this measurement asymmetry limits direct comparison across domains. Fourth, the study did not observe actual disaster activation and therefore cannot establish timeliness, quality, effectiveness, continuity, or equity of PPAM/MISP delivery under emergency conditions. Fifth, documentary evidence was not equally detailed for every item, and “Don’t know” responses identify information gaps that may themselves reflect weak documentation or communication. Sixth, the analysis was limited to Aceh and West Sumatra; the findings should not be generalized as representative of Indonesia as a whole. Seventh, the supplied questionnaire contains local administrative wording and an outdated Q68 skip reference, limiting independent reconstruction of the exact questionnaire routing during provincial administration.

Recommendations for future research

Future research should examine whether favorable readiness profiles are associated with faster and more coordinated PPAM/MISP activation during actual emergencies. Longitudinal or event-based studies could test how governance, coordination, referral, staffing, logistics, and data systems perform under real disruption. Additional work at district, facility, and community levels would also help identify operational constraints that may be hidden in province-level consensus assessments. Methodological research is needed to develop and validate transparent readiness metrics that preserve the contextual strengths of the MRA while improving reproducibility and comparability across settings.

CONCLUSION

Aceh and West Sumatra received favorable MRA ratings across most service-related PPAM/MISP domains, while the policy, coordination, data, and resource domain remained “Adequate” in both provinces. Aceh also had “Adequate” ratings for adolescent reproductive health and minimum health services for children under five, whereas West Sumatra received “Good” ratings across all service-related domains. Across the two provinces, persistent gaps involved crisis-specific governance, formal coordination, inclusive data systems, access for marginalized groups, and documentation of referral pathways.

These findings indicate the presence of important readiness-related capacities but do not demonstrate actual emergency service activation or effectiveness. Because many service-domain items reflect stable-period service availability, the more favorable service ratings should not be interpreted as proof that service delivery is operationally more ready than policy architecture. Strengthening crisis-specific governance, referral arrangements, data systems, and inclusive preparedness planning may help convert existing routine capacity into more reliable PPAM/MISP activation when emergencies occur.

DECLARATIONS

Author contributions: Efa Nugroho and Dwi Yunanto Hermawan contributed to the planning and design of the study, data collection, and drafting of the manuscript. Alfiana Ainun Nisa was responsible for data analysis, interpretation of results, and substantial revision of the manuscript. Bambang Budi Raharjo contributed to the literature review, validation of the methodology, and final editing of the manuscript. Ayu Istiada contributed to the interpretation of findings, the critical review of the manuscript, and the refinement of the discussion and conclusion sections. All authors have read and approved the final version of the manuscript for submission.

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Data Availability: Aggregated domain-level findings are presented in Figure 1 and Table 2. Access to de-identified province-level MRA responses, the domain-by-province matrix, and non-confidential supporting evidence and documentation may be requested from the corresponding author, Efa Nugroho (efa.nugroho@mail.unnes.ac.id). Access is subject to authorization from the data-holding institutions and applicable ethical and confidentiality requirements. FGD minutes and other supporting records will be considered for release only where disclosure is permitted and appropriate redaction can protect confidentiality. Participant-identifying information and confidential stakeholder details will not be disclosed.

REFERENCES

1. Badan Nasional Penanggulangan Bencana. Indeks Risiko Bencana Indonesia Tahun 2024. Jakarta: BNPB; 2025.
2. Badan Nasional Penanggulangan Bencana. *Data Bencana Indonesia 2024*. Jakarta: Pusat Data Informasi dan Komunikasi Kebencanaan BNPB; 2025.
3. Fernandes Q, Augusto O, Chicumbe S, Anselmi L, Wagenaar BH, Marlene R, et al. Maternal and Child Health Care Service Disruptions and Recovery in Mozambique After Cyclone Idai: An Uncontrolled Interrupted Time Series Analysis. *Global Health: Science and Practice*. 2022;10(Supplement 1): e2100796. https://doi.org/10.9745/GHSP-D-21-00796.
4. Munyuzangabo M, Gaffey MF, Khalifa DS, Als D, Ataullahjan A, Kamali M, et al. Delivering maternal and neonatal health interventions in conflict settings: a systematic review. *BMJ Global Health*. 2021;5(Suppl 1): e003750. https://doi.org/10.1136/bmjgh-2020-003750.
5. Tazinya RMA, El-Mowafi IM, Hajjar JM, Yaya S. Sexual and reproductive health and rights in humanitarian settings: a matter of life and death. *Reproductive Health*. 2023;20(1): 42. https://doi.org/10.1186/s12978-023-01594-z.
6. Stephens JH, Lassa JA. Sexual and reproductive health during disasters: A scoping review of the evidence. *International Journal of Disaster Risk Reduction*. 2020;50: 101733. https://doi.org/10.1016/j.ijdrr.2020.101733.
7. Platform Koordinasi Kemanusiaan Indonesia (IHCP). Laporan Situasi Respons Bencana Sumatra No. 7. 2026 Jan 2. https://ihcp-indonesia.org/laporan-situasi-respons-bencana-sumatra-7/.
8. Inter-Agency Working Group on Reproductive Health in Crises. Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings. IAWG; 2018.
9. World Health Organization. *Minimum Initial Service Package (MISP) for sexual and reproductive health in emergencies: guidance and resources*. https://healthcluster.who.int/our-work/task-teams/sexual-and-reproductive-health-task-team
10. World Health Organization. *Strengthening health emergency prevention, preparedness, response and resilience*. https://cdn.who.int/media/docs/default-source/emergency-preparedness/who_hepr_wha2023-21051248b.pdf.
11. Alifah RN, Alfiana Ainun Nisa, Efa Nugroho, Sofwan Indarjo, Evi Widowati. Minimum Initial Service Package Readiness Assessment (MRA) for Reproductive Health in the Disaster Situation of Mount Merapi Eruption in Magelang Regency. *Jurnal Kesehatan Masyarakat*. 2025;21(1): 192–202. https://doi.org/10.15294/kemas.v21i1.29491.
12. Nugroho E, Nisa AA, Alifah RN, Raharjo BB, Utami ANM, Hermawan DY. Implementation of the Minimum Initial Service Package (MISP) as an Effort to Fulfill Reproductive and Sexual Health Services in Disaster Situations: Systematic Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*. 2025;8(1): 42–55. https://doi.org/10.56338/mppki.v8i1.6485.
13. Hermawan DY, Widyaningrum H, Lee SF, Indarjo S, Nugroho E, Raharjo BB, et al. Integration of Minimum Initial Service Package for Reproductive Health in the Sister Village Program. KEMAS. 2023;19(2):287–294. https://doi.org/10.15294/kemas.v19i2.43465.
14. Kementerian Kesehatan Republik Indonesia. *Operational guideline on Minimum Initial Service Package (MISP) for reproductive health in crisis situations*. 2017. https://indonesia.unfpa.org/sites/default/files/pub-pdf/FINAL%20MISP%20Guideline%20-%20English.pdf [Accessed 19th November 2026].
15. United Nations Office for Disaster Risk Reduction. Sendai Framework for Disaster Risk Reduction 2015–2030. Geneva: UNDRR; 2015.
16. International Planned Parenthood Federation, Inter-Agency Working Group on Reproductive Health in Crises, United Nations Population Fund. *MISP Readiness Assessment: Assessing Readiness to Provide the Minimum Initial Service Package (MISP) for Sexual and Reproductive Health in Emergencies*. 2020. https://botswana.unfpa.org/sites/default/files/vacancies/misp_readiness_assessment.pdf.
17. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245–1251. https://doi.org/10.1097/ACM.0000000000000388.
18. Tran NT, Greer A, Kini B, Abdi H, Rajeh K, Cortier H, et al. Integrating sexual and reproductive health into health system strengthening in humanitarian settings: a planning workshop toolkit to transition from minimum to comprehensive services in the Democratic Republic of Congo, Bangladesh, and Yemen. Confl Health. 2020;14:81. https://doi.org/10.1186/s13031-020-00326-5.
19. Norton A, Tappis H. Sexual and reproductive health implementation research in humanitarian contexts: a scoping review. *Reproductive Health*. 2024;21(1): 64. https://doi.org/10.1186/s12978-024-01793-2.
20. Myers A, Sami S, Onyango MA, Karki H, Anggraini R, Krause S. Facilitators and barriers in implementing the Minimum Initial Services Package (MISP) for reproductive health in Nepal post-earthquake. Confl Health. 2018;12:35. https://doi.org/10.1186/s13031-018-0170-0.

21. Krause S, Williams H, Onyango MA, Sami S, Doedens W, Giga N, et al. Reproductive health services for Syrian refugees in Zaatri Camp and Irbid City, Hashemite Kingdom of Jordan: an evaluation of the Minimum Initial Services Package. Confl Health. 2015;9(Suppl 1):S4. https://doi.org/10.1186/1752-1505-9-s1-s4.
22. Singh NS, Smith J, Aryasinghe S, Khosla R, Say L, Blanchet K. Evaluating the effectiveness of sexual and reproductive health services during humanitarian crises: a systematic review. PLoS One. 2018;13(7):e0199300. https://doi.org/10.1371/journal.pone.0199300.
23. Warren E, Post N, Hossain M, Blanchet K, Roberts B. Systematic review of the evidence on the effectiveness of sexual and reproductive health interventions in humanitarian crises. *BMJ Open*. 2015;5(12): e008226. https://doi.org/10.1136/bmjopen-2015-008226.
24. Jennings L, George AS, Jacobs T, Blanchet K, Singh NS. A forgotten group during humanitarian crises: a systematic review of sexual and reproductive health interventions for young people including adolescents in humanitarian settings. *Conflict and Health*. 2019;13(1): 57. https://doi.org/10.1186/s13031-019-0240-y.
25. Murphy N, Azzopardi P, Bohren MA. Safeguarding youth sexual and reproductive health and rights in the context of increasing climate-related disasters in the Pacific: A scoping review of policies and responses. *International Journal of Disaster Risk Reduction*. 2023;86: 103561. https://doi.org/10.1016/j.ijdrr.2023.103561.
26. Desrosiers A, Betancourt T, Kergoat Y, Servilli C, Say L, Kobeissi L. A systematic review of sexual and reproductive health interventions for young people in humanitarian and lower-and-middle-income country settings. BMC Public Health. 2020;20:666. https://doi.org/10.1186/s12889-020-08818-y.
27. Rodo M, Duclos D, DeJong J, Akik C, Singh NS. A systematic review of newborn health interventions in humanitarian settings. BMJ Glob Health. 2022;7(7):e009082. https://doi.org/10.1136/bmjgh-2022-009082.
28. Raftery P, Howard N, Palmer J, Hossain M. Gender-based violence (GBV) coordination in humanitarian and public health emergencies: a scoping review. *Conflict and Health*. 2022;16(1): 37. https://doi.org/10.1186/s13031-022-00471-z.
29. Jayaweera R, Odhoch L, Nabunje J, Oduor C, Zuniga C, Powell B, et al. Incidence and safety of abortion in two humanitarian settings in Uganda and Kenya: a respondent-driven sampling study. *eClinicalMedicine*. 2025;83: 103200. https://doi.org/10.1016/j.eclinm.2025.103200.
30. Dias Amaral B, Sakellariou D. Maternal health in crisis: a scoping review of barriers and facilitators to safe abortion care in humanitarian crises. Front Glob Womens Health. 2021;2:699121. https://doi.org/10.3389/fgwh.2021.699121.
31. Dawson A, Tappis H, Tran NT. Self-care interventions for sexual and reproductive health in humanitarian and fragile settings: a scoping review. BMC Health Serv Res. 2022;22:757. https://doi.org/10.1186/s12913-022-07916-4.
32. Rich S, Jacobi L, Talbi N, Wolfington A, McDonald K. No Matter When or Where: Addressing the Need for Continuous Family Planning Services During Shocks and Stressors. *Global Health: Science and Practice*. 2024;12(6): e2400124. https://doi.org/10.9745/GHSP-D-24-00124.
33. Broaddus-Shea ET, Kobeissi L, Ummer O, Say L. A systematic review of monitoring and evaluation indicators for sexual and reproductive health in humanitarian settings. *Conflict and Health*. 2019;13(1): 43. https://doi.org/10.1186/s13031-019-0221-1.
34. Nam SL, Abril A, McKay G, Casey SE, Bossard C, Moore AM, et al. Setting research priorities for sexual and reproductive health in humanitarian settings: a global, stakeholder-informed agenda. Confl Health. 2026;20:3. https://doi.org/10.1186/s13031-025-00734-5.

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