Title: Effectiveness of Household-Based Home Visit Interventions in Improving Disaster Preparedness: A Quasi-Experimental Study Among Afghan Refugee Families

Authors: Samira Aghaei[1], Zahra Abbasi Dolatabadi[2], Mahdi Nabi Foodani[1], Shima Haghani[3], Sara Torkani[4], Marjan Delkhosh[5,*]

1. *Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.*
2. *Department of Medical-Surgical Nursing, Nursing and Midwifery Care Research Center, School of Nursing and Midwifery Tehran University of Medical Sciences, Tehran, Iran.*
3. *Nursing and Midwifery Care Research Center (NCRC), Iran University of Medical Sciences, Tehran, Iran.*
4. *Health Education & Health Promotion department, faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran.*
5. *Department of Community Health & Geriatric Nursing, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.*

To appear in: ***Health in Emergencies & Disasters Quarterly***

Received date: 2025/08/16

Revised date: 2026/02/04

Accepted date: 2026/02/18

First Online Published: 2026/04/24

Please cite this article as:

Aghaei S, Abbasi Dolatabadi Z, Nabi Foodani M, Haghani S, Torkani S, Delkhosh M. Effectiveness of Household-Based Home Visit Interventions in Improving Disaster Preparedness: A Quasi-Experimental Study Among Afghan Refugee Families. Health in Emergencies & Disasters Quarterly. Forthcoming 2026. Doi: http://dx.doi.org/10.32598/hdq.2026.179.7

Abstract

Background and aim: Implementing strategies to prevent and mitigate disaster consequences across all segments of society, particularly among vulnerable groups such as refugees, is a critical priority. Home visitation is a commonly used approach for delivering health care services, including follow-up care for the elderly and pregnant women. However, few studies have examined its use in reducing disaster risks within refugee living environments despite their heightened vulnerability. This study evaluated the impact of a home visitation program on enhancing disaster preparedness among refugees.

Methods: This non-randomized interventional study was conducted in 2024 in southern Tehran, Iran. Community centers were selected through convenience sampling, and 56 eligible Afghan refugee households were recruited. Participants were assigned to either the intervention group (N = 28) or the control group (N = 28). The intervention included an educational workshop for women-headed households and researcher-led home visits. Disaster preparedness was assessed using a demographic survey and the Disaster Assessment and Readiness Tool (DART) at baseline and post-intervention.

Results: Although the home visit intervention significantly improved disaster preparedness among Afghan households (P = 0.001), overall preparedness remained within the "poor" category. The intervention group showed an increase in the mean DART score (2.35 out of 15), yet this improvement did not translate into an acceptable level of practical readiness.

Conclusions: The home visit program positively influenced preparedness outcomes among Afghan refugee families. These findings support integrating household-level interventions into disaster risk reduction strategies. Implementing such programs is recommended to improve preparedness in vulnerable populations and inform future health policies.

Keywords: Disaster risk reduction, Risk Reduction Behavior, home visit, refugee families, vulnerable people

Introduction

Refugees are globally recognized as one of the most vulnerable populations in disaster contexts. According to the United Nations High Commissioner for Refugees (UNHCR), by the end of 2024, over 42.7 million refugees had been forcibly displaced worldwide due to armed conflict, persecution, and human rights violations (1). Afghanistan remains the third-largest source of refugees, with approximately 5.8 million Afghan nationals displaced globally(2) . Iran has hosted Afghan refugees for more than four decades and currently ranks among the top five host countries, accommodating around 3.4 million Afghan refugees and asylum seekers (3). Notably, over 96% of Afghan refugees in Iran reside in urban and peri-urban areas, often in high-risk zones for natural and human-made disasters(4). Refugee households also face substantial barriers to accessing standard disaster preparedness resources, including language limitations, distrust of formal institutions, unstable living conditions, and competing daily survival priorities that reduce their ability to engage in preparedness activities. According to the INFORM Risk Index 2025, Iran continues to exhibit moderate to high levels of disaster risk due to its significant exposure to natural hazards, limited coping capacity, and urban vulnerability(5).

Tehran, the capital of Iran, continues to face recurring disasters and remains among the top 20 megacities globally at highest seismic risk(6-8). The high concentration of vulnerable refugee households in hazard-prone urban areas underscores the urgent need to strengthen disaster preparedness strategies at the community level(9-11). Household-based interventions, such as home visit programs, have shown potential in bridging service gaps and empowering families through tailored support(12, 13). These visits enable healthcare providers to directly assess living conditions, identify risks, build trust, and deliver personalized preparedness education.

Although previous studies have demonstrated the positive effects of home visits on maternal and child health(13, 14), their potential role in enhancing disaster preparedness remains understudied, especially within refugee populations in Iran. Despite the availability of general health education programs in Iran, these approaches often fail to address the specific disaster-related needs of refugee households. Standard educational strategies typically rely on formal literacy, stable access to resources, and familiarity with institutional systems conditions that many refugee families do not fully possess.

In response, the Iranian Ministry of Health developed the Disaster Assessment and Readiness Tool (DART), a standardized framework used to evaluate household readiness across structural, non-structural, and functional domains(15, 16). While the DART tool was developed by the Iranian Ministry of Health, its structure aligns with global disaster preparedness frameworks, including World Health Organization (WHO) guidelines on household-level risk reduction and community resilience. This alignment reinforces its relevance in evaluating preparedness among vulnerable populations and supports its use in research and policy development.

The design of the home visit intervention is informed by the Social Ecological Model, which emphasizes the interaction of individual, household, and community-level factors in shaping

preparedness behaviors. This approach aligns with community-based participatory principles by promoting trust-building, tailored education, and culturally responsive engagement within refugee households. Aligning with national priorities, and recognizing this gap, the current study aims to evaluate the effectiveness of a structured home visit program in improving disaster preparedness among Afghan refugee families in Tehran. Accordingly, this study tests the hypothesis that structured home visit interventions can significantly enhance disaster preparedness scores among Afghan refugee households, as measured by the DART tool.

Materials and Methods

This non-randomized two-arm interventional study was conducted from May to July in 2024 in southern Tehran, Iran. The study population comprised Afghan refugee households covered by Comprehensive Health Centers affiliated with Tehran's District Health Network, and registered in the national electronic health record system (SIB). Sampling was conducted in community centers that operate under the supervision of Comprehensive Health Centers.

Sampling was conducted in three stages, all based on convenience sampling. First, community centers affiliated with Comprehensive Health Centers were selected based on researcher accessibility. Within these centers, eligible Afghan refugee households were recruited using convenience sampling. To minimize selection bias inherent in non-random group allocation, households were recruited from geographically distinct community centers affiliated with separate Comprehensive Health Centers. Although geographic separation of recruitment sites was used to minimize cross-group contamination, no formal monitoring protocols were implemented to ensure that control group participants did not receive informal preparedness information from external sources. Assignment to intervention or control groups was based on center accessibility and logistical feasibility, not participant characteristics. Baseline demographic comparisons confirmed statistical homogeneity between groups, supporting internal validity.

Inclusion criteria were: (i) valid household contact information, (ii) refugee registration status, (iii) existing electronic health records in SIB, (iv) household classification as "not trained" or "in need of training" in disaster preparedness, and (v) willingness of the spouse (wife) to participate. Exclusion criteria included: (i) prior participation in similar training workshops, (ii) refusal to cooperate in home visit intervention, relocation, or return to Afghanistan.

Sample size was calculated for 95% confidence and 80% power, assuming a large Cohen's effect size (0.8). Minimum required was 26 households per group, rounded to 28 to account for potential attrition, which ultimately was 0%.

Data collection tools included a demographic questionnaire and the Disaster Assessment and Readiness Tool (DART) developed by the Iranian Ministry of Health. The DART tool assesses household preparedness across three dimensions: structural, non-structural, and functional readiness. It contains 15 binary items scored as 1 (Yes) or 0 (No). Cumulative scores classify preparedness into poor (0–5), moderate (6–10), or good (11–15)(15, 16). The DART tool was developed by the Iranian Ministry of Health and has been widely used in national preparedness programs. While its content validity has been confirmed by expert panels, internal consistency

(e.g., Cronbach's alpha) was not formally assessed in this study due to the binary nature and structural design of the tool. Although the DART tool consists of binary items and was originally developed as a standardized national instrument, alternative reliability indices such as the Kuder–Richardson Formula 20 (KR-20) could have been considered. However, due to the tool's fixed structure and its mandated use in national programs, additional reliability testing was not performed

Following the issuance of the ethical approval (Code: IR.TUMS.FNM.REC.1402.058), the process of sampling and data collection was initiated by the researcher. Participants were recruited from Afghan households with registered health records or who attended routine care at selected centers. Only families identified in SIB as "untrained" or "in need of training" were enrolled.

The intervention involved two components: (1) a one-day educational workshop held at a Comprehensive Health Center for women from selected families, and (2) scheduled individual home visits. The educational workshop was structured into two segments: a 1–1.5 hour theoretical session followed by a 45-minute hands-on practice session. The practical component included household risk mapping, mock evacuation planning, and interactive demonstrations using Ministry-provided videos and printed materials. Participants were divided into three small groups (10–15 women per group) to facilitate engagement and individualized instruction. This structure was designed to maximize participation, reinforce key preparedness concepts, and allow for culturally sensitive peer interaction. Home visits were conducted by trained researchers who provided tailored education and assessed household preparedness conditions. A standardized protocol was developed for home visit delivery, outlining key educational messages, household assessment steps, and safety considerations. All researchers received uniform training based on this protocol to ensure consistency in intervention delivery. During each visit, researchers completed a structured checklist documenting the content delivered, household responses, and observed conditions. Although adherence to the protocol was monitored through these checklists, no independent fidelity audit was conducted.

Content followed the Ministry of Health Medicine and Program Guidelines for household disaster preparedness, covering structural, non-structural, and functional domains such as: emergency warning systems, fire safety, survival kits, evacuation planning, drills and exercises, community participation, and communication strategies for vulnerable members.

Home visits were scheduled to ensure maximum household participation. Guided by the same three preparedness dimensions, visits reinforced workshop content through direct observation, tailored guidance, and motivational engagement.

Each household in the intervention group received two scheduled home visits over a 12-week period. Each visit lasted approximately 45–60 minutes and was conducted by trained public health researchers with at least a master's degree in nursing or disaster management. Researchers were certified in community-based disaster preparedness and had prior experience working with refugee populations. During visits, researchers assessed household conditions, reinforced workshop content, and provided tailored guidance using a standardized checklist aligned with the DART framework.

Twelve weeks post-intervention, both groups completed the DART tool for follow-up assessment. Control group data were also collected at baseline and 12 weeks, and an educational workshop tailored for women-headed households was conducted before participants received printed learning materials upon study completion.

Data were analyzed using SPSS v16. While mean and SD (or median and first–third quartile) described quantitative variables, the normality of the data was checked using the Shapiro-Wilk test and the P-P plot diagram, and the Levene test checked the homogeneity of the variance. Independent t-tests were used to compare means in two independent groups, and paired t-tests were used in two dependent groups. A comparison of qualitative variables in two groups was done using χ^2 or Fisher's exact test. The correlation of two quantitative variables was investigated using the Pearson or Spearman correlation coefficient. A significance level of $p < 0.05$ was considered statistically meaningful.

Result

Demographic characteristics of participants in both groups were statistically comparable and homogeneous. The mean age in the intervention group was 29.14 years (SD = 5.71), while the control group had a mean age of 29.61 years (SD = 7.81) ($p = 0.801$). In total, 64.3% of women in both groups were illiterate ($p = 0.638$), and more than half of their spouses 53.57% in the intervention group and 64.29% in the control group were also illiterate ($p = 0.599$).

Most female participants in both groups (85.71%) were housewives ($p = 0.999$). Regarding spousal employment, 64.29% in the intervention group and 67.86% in the control group had employed husbands ($p = 0.236$). All households in the intervention group and 85.71% in the control group were tenants ($p = 0.111$). Prior experience with disasters was reported in 50% of the intervention group and 39.29% of the control group ($p = 0.42$). Table 1 summarizes the demographic details.

Table 1. Demographic Characteristics of Participants

Variable	Category	Intervention Group (n = 28)	Control Group (n = 28)	Statistical Test	p-value
Women's Literacy	Illiterate	18 (64.3%)	18 (64.3%)	Fisher's Exact Test	0.638
	Below Diploma	9 (32.14%)	7 (25%)		
	Diploma or Higher	1 (3.57%)	3 (10.71%)		
Spouse's Literacy	Illiterate	15 (53.57%)	18 (64.29%)	Fisher's Exact Test	0.599
	Below Diploma	11 (39.29%)	7 (25%)		
	Diploma / Associate	2 (7.14%)	3 (10.71%)		
Women's Occupation	Employed	4 (14.29%)	4 (14.29%)	Fisher's Exact Test	0.999
	Housewife	24 (85.71%)	24 (85.71%)		
Spouse Employed	Unemployed	1 (3.57%)	4 (14.29%)	Fisher's Exact Test	0.236
	Seasonal Worker	9 (32.14%)	5 (17.86%)		
Housing Status	Owner	0 (0%)	4 (14.29%)	Fisher's Exact Test	0.111
	Tenant	28 (100%)	24 (85.71%)		
Disaster Exposure	Yes	14 (50%)	11 (39.29%)	Chi-square: $\chi^2 = 0.45$, df = 1,	0.42
	No	14 (50%)	17 (60.71%)		

At baseline, the mean preparedness score in both groups was zero. Post-intervention, the control group's score remained unchanged, while the intervention group's score increased to a mean of 2.35 (SD = 1.87; 95% CI: 1.63–3.07). According to the DART scoring system, scores from 0–5 indicate low preparedness, 6–10 moderate preparedness, and 11–15 good preparedness. Despite the improvement, overall household preparedness in both groups remained within the "low" category.

The Wilcoxon signed-rank test showed a statistically significant difference between pre- and post-intervention scores in the intervention group (p = 0.001), indicating that the home visit program was effective in improving disaster preparedness. Table 2 presents the score comparison.

Table 2. Mean Household Disaster Preparedness Scores

Group	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	Test	p-value	Effect Size (Cohen's d)
Intervention	0.00 (0.00)	2.35 (1.87)	Z=-4.21	0.001	1.26
Control	0.00 (0.00)	0.00 (0.00)	—	—	—

*Wilcoxon signed-rank test was used to compare pre- and post-intervention scores in the intervention group

According to the DART classification, all households in both groups were categorized as having "poor" preparedness (score range: 0–5), both before and after the intervention. Although the intervention group showed a statistically significant improvement (mean = 2.35, SD = 1.87; 95% CI: 1.63–3.07; Cohen's d = 1.25), 100% of households still remained within the "poor" category. This underscores the severity of baseline vulnerability and highlights the need for more intensive and sustained interventions.

Discussion

This study provides important empirical evidence on the effectiveness of home visit–based educational interventions for improving disaster preparedness among Afghan refugee families living in Tehran. Despite a statistically significant increase in preparedness scores (mean: 2.35), these households still fell within the "poor" category according to national classifications. Women in these Afghan migrant households had an average age of 29 years and were mostly illiterate, unemployed, and engaged in household duties. The gap between statistical improvement and practical preparedness points to structural barriers such as poverty, illiteracy, unsafe housing, and limited access to emergency resources. Although home visits provided personalized education, several entrenched barriers likely limited their ability to shift households from 'poor' to 'moderate' preparedness. These include chronic financial insecurity, inability to purchase basic safety equipment, overcrowded or unsafe rental housing where structural modifications are not permitted, limited decision-making autonomy among women, and competing daily survival priorities that overshadow disaster planning. Such deep-rooted structural constraints are not easily modifiable through short-term educational visits alone. The zero baseline scores observed in both groups may reflect a selection bias toward households classified as truly 'untrained' in the national registry, which was an intentional inclusion criterion.

Similar findings have been reported in studies involving migrant populations in other parts of the world. For example, a study by Zaman and colleagues in 2020 on Rohingya refugees residing in Cox's Bazar, Bangladesh, showed that younger individuals demonstrated greater disaster preparedness and responsiveness to local hazard warnings than other demographic groups. This migrant group also faced unemployment, and the women were mostly housewives. Based on their findings, researchers concluded that although preparedness regarding storing dry food items was satisfactory, additional training was needed to educate families on caring for vulnerable members such as elderly relatives (17) .

In studies conducted in Japan, disaster preparedness among refugees was reported as low. While some individuals were familiar with household and family preparedness and had acquired emergency equipment, they lacked sufficient information about the country's alert systems and safe shelter locations. More than 70% of refugees in Japan reported feeling incapable of dealing with emergencies, which negatively influenced their motivation to take preparedness actions and participate in workshops and training exercises. Researchers emphasized the importance of tailored education for these groups and noted that language barriers played a critical role. They recommended that disaster preparedness training be delivered in refugees' native languages and suggested using strategies like school-based education, community representative training, social interaction, and engagement of community health nurses for outreach and assessment .(۲۰-۱۸)

In another study from 2025 focusing on Korean refugees residing in the U.S., findings revealed extremely low levels of disaster preparedness across various domains, including care for vulnerable family members, emergency equipment availability, and household-level planning. Educational interventions led to a significant increase in preparedness activities, such as creating emergency communication plans, evacuation strategies, and identifying local resources. Participants became more interested in preparing emergency kits and recognizing essential items. Notably, the Korean organization involved continued delivering trainings after the research concluded, reflecting high sustainability of the intervention (۲۱). The intensity of the intervention may also have been insufficient to produce larger gains. Two home visits over a 12-week period may not be adequate to overcome long-standing socioeconomic and environmental barriers. Evidence from other settings suggests that repeated contacts, ongoing community engagement, and reinforcement through local organizations are often required to achieve meaningful and sustained improvements in preparedness.

A 2025 systematic review by Piao et al. identified key factors affecting migrant preparedness. The estimated levels ranged from 9% to 45%, indicating below-average readiness. Migrant preparedness mostly focused on securing emergency supplies like food, water, radios, flashlights, and batteries .(۲۲)

Another study by Greinke et al. in 2024 highlighted that refugees face unique needs in preparing for disasters, which require access to varied resources. Everyday survival priorities among migrant

families often overshadowed emergency readiness. Linguistic diversity and limited command of the official language posed serious challenges to accessing critical information. The study recommended offering educational materials in native languages and adopting creative communication methods. Although the intervention was delivered in Persian and incorporated culturally respectful communication, deeper cultural adaptation may have been necessary. Afghan refugee households often have distinct gender norms, religious practices, and family decision-making structures that influence preparedness behaviors. Tailoring educational materials to Afghan dialects, involving male household members, and integrating culturally familiar examples may enhance relevance and uptake in future programs. It called for multi-tiered engagement among governments, community organizations, and migrant communities to enhance emergency response efforts. Home visits, in-person training, and regular phone reminders were found to positively impact preparedness among elderly individuals. Elderly women and those born outside the study country had lower odds of gaining initial risk awareness and needed more targeted support. The study emphasized the necessity of clear communication policies, culturally and linguistically appropriate education, and inter-organizational collaboration. Home visit programs with targeted follow-ups could be effective in building social resilience, particularly among vulnerable groups (۲۳).The sustainability of the observed ۲,۳۵-point improvement remains uncertain, as no follow-up beyond ۱۲ weeks was conducted. Prior studies, including Greinke et al., highlight that ongoing reinforcement—such as periodic home visits, in-person refreshers, or phone reminders—may be necessary to maintain preparedness behaviors over time. Future interventions may benefit from integrating structured follow-up support to enhance long-term impact.

A study conducted in Australia demonstrated the significant impact of home visits on enhancing disaster preparedness among the elderly, a highly vulnerable population. Activities such as identifying emergency exit routes during fires, planning escape strategies, and activating smoke detector alarms in seniors' homes were some of the preparedness outcomes directly influenced by the program. Notably, those who spoke languages other than English at home (mostly refugees) were less likely to have functioning smoke alarms, pointing to information and communication gaps among this group. These findings clearly suggest that home visit programs as a direct and personalized intervention can play a vital role in improving disaster preparedness among marginalized, isolated, and linguistically diverse populations. Programs designed with cultural and linguistic considerations can enhance safety and help minimize disaster-related losses (۲۴, ۲۵).

Limitation

This study has several limitations that should be acknowledged. First, the preparedness assessment tool used in this study was derived from Iran's national standard and does not include internationally recognized cut-off points, which may limit comparability with global preparedness metrics. Although the DART tool consists of binary items and was originally developed as a standardized national instrument, alternative reliability indices such as the Kuder–Richardson

Formula 20 (KR-20) could have been considered. However, due to the tool's fixed structure and its mandated use in national programs, additional reliability testing was not performed.

Second, the study did not include follow-up assessments beyond 12 weeks, which limits the ability to evaluate the long-term sustainability of the intervention's effects. Future studies would benefit from extended follow-up periods to assess whether improvements in preparedness are maintained over time.

Third, although geographic separation of recruitment sites was used to minimize cross-group contamination, no formal monitoring protocols were implemented to ensure that control group participants did not receive informal preparedness information from external sources. Therefore, the possibility of contamination cannot be fully ruled out.

Fourth, while researchers were trained and qualified to deliver the intervention, no independent fidelity assessment was conducted. A standardized protocol and structured checklists were used to guide and document each home visit, but external auditing of adherence to the protocol was not performed. This may limit the precision with which intervention fidelity can be evaluated.

Finally, logistical and cultural challenges in gaining access to refugee households may have influenced participation and engagement. These contextual factors should be considered when interpreting the findings and designing future community-based preparedness interventions.

Conclusion

This study demonstrated that home visit–based education produced statistically significant improvements in disaster preparedness among Afghan migrant households; however, the absolute gains remained limited, indicating that enhanced and multi-component interventions may be necessary. Strengthening preparedness in such structurally vulnerable communities may require integrating peer-to-peer support networks, coordinating with housing and economic development programs to address underlying barriers, and incorporating culturally informed and gender-sensitive educational content. Longer-term follow-up, periodic reinforcement, and consideration of resource requirements and cost-effectiveness will be essential for scaling such programs. Future research should explore multi-level intervention models that combine family-level education with community engagement and supportive policy measures to achieve more sustainable preparedness outcomes.

References

1. United Nations High Commissioner for Refugees (UNHCR). Global Trends Report 2024. Geneva, Switzerland: UNHCR; 2024.
2. United Nations High Commissioner for Refugees (UNHCR). Refugee Data Finder – Key Indicators. Geneva, Switzerland: UNHCR; 2025.
3. United Nations High Commissioner for Refugees (UNHCR). Afghanistan Situation: Registered Afghan Refugees by Country. Geneva, Switzerland: UNHCR; 2025.
4. United Nations High Commissioner for Refugees (UNHCR). Iran at a Glance – October 2024. Geneva, Switzerland: UNHCR; 2024.
5. European Commission Joint Research Centre. INFORM Risk Index 2025 – 2nd Edition. Luxembourg: Publications Office of the European Union; 2025. Available from: https://drmkc.jrc.ec.europa.eu/inform-index
6. Kamranzad F, Memarian H, Zare M. Earthquake risk assessment for Tehran, Iran. ISPRS Int J Geo-Inf. 2020;9(7):1–19.
7. Solaymani Azad Sh. Active seismogenic faulting in the Tehran region, north of Iran: state-of-the-art and future seismic hazard assessment prospects. Tectonophysics. 2023;1–10.
8. Ehteshami Moinabadi M, Yassaghi A. Structural segmentation of a mountain front fault evolved as an oblique thrust system: the North Tehran Fault case study. J Mt Sci. 2025;22(7):2391–422.
9. Ghasemi Ardehaei A, Kord Zanganeh J. Analysis of migration flows to 22 areas of Tehran. Iran J Off Stat Stud. 2018;28(2):247–71.
10. Valibeigi M, Taghipour AA, Ahmadi Dehrashid P, Asvadi K. Disaster risk management and resilience assessment of small communities in Iran. Chin J Urban Environ Stud. 2024;12(2):1–25.
11. Sadidi J, Saeedi R, Torahi A, Firuzabadi PZ. Determining the optimal algorithm to locate the best place for earthquake refugee camps: a case study for Tehran, Iran. Positioning. 2014;5(4):97–106.
12. Mirabnejad M, Mohammadi H, Mirzabaghi M, Aghsami A, Jolai F, Yazdani MH. Home health care problem with synchronization of visits and consideration of sample transfer time: a case study in Tehran, Iran. Int J Environ Res Public Health. 2022;19(22):1–25.
13. Ehsani R, Sharafoddin M, Olyaeemanesh A, Delavari A, Vosoogh Moghaddam A, Alimohamadi Y, et al. Insights into health program implementation and evaluation in Iran: a brief review of national healthcare programs. Iran J Public Health. 2024;53(11):2572–81.
14. Peykari N, Hashemi H, Dinarvand R, Haji-Aghajani M, Malekzadeh R, Sadrolsadat A, et al. National action plan for non-communicable diseases prevention and control in Iran: a response to the emerging epidemic. J Diabetes Metab Disord. 2017;16(1):1–7.
15. Ardalan A, Yousefi H, Yamani T, Valafar S. Guideline of monitoring "Disaster Assessment of Readiness and Training for Households" plan. 2014.
16. Zarei H, Yarmohammadian MH, Yamani N, Atighechian G, Rezaei F. Challenges of Disaster Assessment of Readiness and Training Guideline (DART) in Iran's primary health care. Int J Prev Med. 2025;16(16):1–16.

17. Zaman S, Sammonds P, Ahmed B, Rahman T. Disaster risk reduction in conflict contexts: lessons learned from the lived experiences of Rohingya refugees in Cox's Bazar, Bangladesh. Int J Disaster Risk Reduct. 2020;50:1–17.
18. Nishiyama M, Glauberman G. Disaster preparedness among foreign residents in a rural area of Japan: a qualitative pilot study. Health Emerg Disaster Nurs. 2022;9(1):62–73.
19. Bhandari AK, Rahman M, Takahashi O. Enhancing earthquake preparedness knowledge and practice among Nepalese immigrants residing in Japan. Sci Rep. 2023;13(1):1–12.
20. Adu-Gyamfi B, Shaw R. Risk awareness and impediments to disaster preparedness of foreign residents in the Tokyo metropolitan area, Japan. Int J Environ Res Public Health. 2022;19(18):1–11.
21. Heagele T, Hyun J, Park SH, Samuels WE, Seo JY. A home disaster preparedness intervention study with Korean American residents in New York City. J Urban Health. 2025;1–12.
22. Piao M, Kondo A, Qian H. Factors related to immigrants' disaster preparedness: a scoping review. Health Emerg Disaster Nurs. 2025;12(1):44–53.
23. Greenky D, Hassan S, Nerhood K. Disaster preparedness in a resettled refugee community: qualitative findings. Disaster Med Public Health Prep. 2024;18:e2:1–13.
24. Tannous WK, Agho K, Williams Tetteh V. Association between home visit programs and emergency preparedness among elderly vulnerable people in New South Wales, Australia. Gerontol Geriatr Med. 2017;3:1–8.
25. Tannous WK, Agho K. Domestic fire emergency escape plans among the aged in NSW, Australia: the impact of a fire safety home visit program. BMC Public Health. 2019;19(1):1–10.