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Review Article

Criteria for Locating Temporary Shelters for Refugees of Conflicts: A Systematic Review

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Abstract

Background: We aimed to identify the indicators and criteria to locate temporary shelters for conflict refugees.

Methods: This systematic review evaluated the full-text of the related articles in international electronic databases, such as Web of Science, Scopus, PubMed, Cochran, and Google Scholar from the beginning and without time limit to 1 June 2019. In addition, this search was based on a strategy developed by the researchers. The studies were selected regardless of their methods and two data extraction forms were used to extract the most relevant and important information.

Results: Among 10124 cases of primary documents, 38 articles were selected, and 25 articles were analyzed in full-text. Totally, 45 indicators were identified and classified into two main categories of physical and non-physical indicators with six subcategories of land ownership, host government, access to infrastructures, site safety, land characteristics, and economic, social, and cultural considerations.

Conclusion: The selection of temporary shelters for the conflict refugees requires the identification of all the specific influential factors not properly addressed. The final indicators obtained in our review could be incorporated into the development of the models required in this regard.

Keywords: Conflict; Locating; Refugees; Temporary shelters

Introduction

Violence resulting from conflicts, increasing trend of natural disasters, and climate change has led to higher population displacement and forced migration in different regions in recent decades. By the

end of 2015, the number of refugees in the world had reached 65.3 million (1), and more than 40.3 million were displaced due to the internal conflicts within their countries in 2016 (2). Such examples are the displacements of Rohingya refugees from Bangladesh and Syria to Turkey, as well as Iraqi Kurds and Afghans migrating to Iran, and the displacement of the Iranian domestic population during the Iran-Iraq war (1).

Forced displacement is not a short-term or temporary phenomenon, and it is possible that the temporary shelters of displaced populations become their permanent housing (3) and their longevity may prolong so long that the average displacement period would last 20 years for refugees and more than 10 years for 90% of the Internally Displaced Persons (IDPs)(4). The policy of several countries (including Iran) regarding the reception of foreign refugees and internally displaced populations is to comply with the international requirements and obligations of the reception of refugees in accordance with the humanitarian principles and laws (5). The resettlement of refugees plays a pivotal role in preserving and saving human lives (3). Therefore, the adaptation of refugees to the new locations and their flexibility in adapting to various aspects of temporary accommodation are of paramount importance (3). Considering the fundamental role of temporary shelters in humanitarian relief operations, determining their appropriate locations for victims requires appropriate information on the related indicators. It should be carefully evaluated.

Several studies have been done on the criteria of post-earthquake temporary shelters (6-10), as well as the attempts to determine the criteria and features of the emergency and temporary shelters selected for those affected by earthquakes. However, few studies have investigated the temporary shelters for the refugees of conflicts.

In a study, the criteria to select an appropriate site for a refugee camp were evaluated using a Geographical Information System (GIS) in order to identify the new potential sites to accommodate refugees based on the social, geographical, infrastructural, and risk-related criteria, as well as the criteria with the capability of the geographical layers for the accommodation of refugees (11).

Another study focused on the location of shelters in conflict zones aiming at maximizing meeting the needs of the displaced and the criteria of vulnerability (12). The location of suitable shelters in unspecified conditions was selected with the aim of combining heterogeneous criteria, including the topographic conditions, accessibility, resource availability, construction costs, pollution effects, forest proximity, human concerns, and the host government (13).

Most of the studies regarding temporary shelters have identified a limited number of indicators for the process of shelter site selection and used conventional evaluation criteria principally to determine the location of the temporary shelters, and less attention has been paid to other relevant criteria. Since the temporary shelters provided to the displaced may become their permanent housing in the future (3), it is imperative to consider the economic, social, and cultural criteria affecting the selection of the sites for temporary shelters (3, 14). Moreover, limited studies have been focused on the influential factors in the decision-making process of the temporary site selection for those affected by conflicts, and no comprehensive classification has been suggested for the criteria of selecting temporary shelters for refugees.

Given the differences between the areas affected by conflict in terms of social and cultural conditions, special attention must be paid to various infrastructures (including health infrastructures) and adoption of a combined approach for the selection of appropriate sites for shelters.

We aimed at identifying the criteria for the temporary shelters of conflict refugees comprehensively and determining the criteria for these shelters.

Methods

This systematic review has been conducted to determine the criteria for the selection of temporary shelters for the refugees of conflict. The meta-analysis method has not been employed in this review to do the process of data analysis, 7 items

were considered out of the 9 available items based on the available guidelines (15), for the systematic reviews that lack data amenable to meta-analysis method. These items are as follows:

Item 1: Grouping Studies for Synthesis

Literature search was performed in databases including PubMed, Scopus, Web of Science, Cochran, and Google Scholar in June 2019. All relevant articles, books, documents, reports, guidelines, and dissertations from the beginning and without time limit to 1 June 2019 were extracted. To formulate a comprehensive search strategy, the synonyms of the search strategy keywords were employed based on the PubMed Mesh system and expert opinions. To extract comprehensive indicators, due to the commonalities in the indicators of temporary shelter between man-made and natural disasters, based on expert's opinion in addition to the word "conflict", it was decided to include the word disaster and its synonyms in writing search strategy. The search strategy in SCOPUS as the study main database is as follows:

TITLE-ABS-KEY(camp* OR shelter* OR *settlement* OR hous* OR "temporary shelter*" OR temporary hous*" OR temporary camp*" OR "site map*" OR "site-map*" OR "camp map*" OR "site select*" OR "site-select*" OR locat* OR "camp design*" OR "emergency camp*" OR "emergency shelter*") AND TITLE-ABS-KEY(refugee* OR (asylum* AND seeker*) OR "asylum seeker*" OR immigrant* OR emigrant* OR alien* OR "internally displaced population" OR IDP* OR "displaced population" OR displacement* OR "population movement") AND TITLE-ABS-KEY(conflict* OR war* OR combat* OR violence* OR disaster* OR emergency* OR crisis OR catastrophe*)

Item 2: Standardized Metric and Transformation Method Used

No specific metrics or indicators have been considered in this review, and all the studies referring to the criteria for the temporary accommodation of refugees resulting from natural or manmade conflicts and hazards have been considered based on the following inclusion and exclusion criteria:

Inclusion Criteria

We selected the studies published in the scientific journals, as well as reports, guidelines, standards, books, and dissertations related to the research question of the criteria for the process of the refugee shelter selection.

Exclusion Criteria

Documents and published materials unrelated to the research question and non-English articles were excluded. In addition, the articles only focused on shelter site design or engineering and those with no accessible full text were excluded.

Item 3: Describe the Synthesis Methods

Considering the application of the thematic analysis method in the analysis of the systematic studies (16), the thematic method was used in this study for the 25 found studies and documents to synthesize data based on the following steps:

Initially, the abstracts and titles of the extracted documents and articles were evaluated to select the related articles. The full texts of the selected articles were reviewed, and disagreements between the two researchers were resolved through the consensus of the research team.

The extracted data were recorded in two separate forms; the first form included the general features of the articles (e.g., type of the assessed risk, first author, location of study, objectives of study, and type of article) and the second form contained the criteria for the selection of temporary shelters for refugees of conflict. Afterwards, descriptive and thematic analysis were performed on the selected articles and texts. The reference lists of the selected articles were also reviewed by manual search to find articles that are more relevant. The preliminary studies for this systematic review were of different types of methods, After reviewing the QuADS tool, which is a suitable assessment tool for systematic review whose preliminary studies are heterogeneous, the research team decided to use a tool to assess risk of bias by categorize the scores and those scored 23 out of 39 were classified into the high-quality score category.

Item 4: Criteria Used to Prioritize Results for Summary and Synthesis

Our criterion to prioritize the studies used in the results was the degree of thematic relevance of the study to the subject of the study, i.e., the criteria for the accommodation of conflict refugees. Studies that considered more criteria and examined them more broadly were prioritized.

Item 5: Investigation of the Heterogeneity in the Reported Effects

While the aim of this study was identification and extraction of the criteria and indicators for locating temporary shelters for the conflict refugees, a qualitative method was used to avoid heterogeneity in the results. Therefore, two independent researchers (A.H. and R.R.) evaluated the articles based on the inclusion and exclusion criteria. If these two researches agreed to include an article as the final finding, it was included. Nevertheless, the article was sent to the third person for the final decision. These process lead to homogeneity in the findings.

Item 6: Certainty of Evidence

The validity and quality of the found documents used in this study were examined in order to investigate the reliability of the evidences and findings of the present study; because quantitative data and analyses were not considered in this study. The consistency of the findings was also examined in all of the found documents.

Item 7: Data Presentation Methods

Criteria extracted from studies reviewed in this study have been presented in Table 1. In this review, there has been an attempt to include the exact type of criteria mentioned in the source study.

Table 1: Criteria extracted from studies reviewed in the systematic review of criteria for the location of temporary shelter of refugees displaced by conflicts

Category	*Sub- category*	*Criterion*	*Ideal Indicators*
Physical	Location safety	Distance from faults	Appropriate distance from faults
		Not be exposed to floods	Appropriate distance from the riverbed, Not being in a flood-prone area
		Landslides	The site must not be prone to landslides
		Distance from the beaches	Suitable distance from the beach
		Not being exposed to volcanoes	Not exposed to volcanic activity
		Distance from mined areas	Distance from minefields
		Distance from war zones	Distance from the borders of the conflict areas
		Distance from the place of vectors of the diseases	Distance from insect breeding grounds such as swamps or ponds
		Distance from dangerous explosive sources and the radioactive hazardous areas	Distance from the explosive, flammable and radioactive hazardous source
		Windswept area (wind direction)	Do not build shelters in the windswept areas, especially tent shelters
		Distance from high-voltage power lines	At least 100 m away from the high-voltage power lines
		Not being exposed to the tsunami	Appropriate distance from the Seaside
	Land characteristics	The danger of the rock fall	Not exposed to the rock fall
		land Area	45 m^2 per person in outdoors, 3.5 m^2 per person indoors
		Height	Relatively flat, large space, higher position than the surrounding

		Drainage	Adequate drainage to prevent flooding, absorption and conduction of surface water
		Slope	Standard slope
		Vegetation of the shelter	Observe the principles of protection of trees and plants, stabilize the soil and make minimal changes
		The seasons of the year	Compatibility with the seasons
		Climatic conditions of the region	Adapted to climatic conditions
		Access to water resources	Access to good and healthy water resources
		Access to health care centers	Appropriate distance to health centers
	Access to infrastructure	Access to the local transportation routes	Access to the local roads and transportation routes and their proximity to the transportation centers
		Access to the educational centers	Access to the educational centers and facilities
		Proximity to security centers	Proximity of the security centers to maintain the security of the site,
		Access to the airport	Close to airports
		Access to ports	Close to the ports
		Access to the rail network	Close to the railroad network
		Telecommunication facilities at the site	Efficient access to the fixed or portable communication and telecommunication network
		Existence of early warning system	Implementing an early warning system
		The electronic facilities	Distance from the high-voltage transmission lines
Non-physical	The host government	The views of the authorities in the host community	Determining the shelter location based on the decision and direct views of local authorities and the government
		Local community acceptance	The capacity of the local community to accept refugees and to accept governments' requests for humanitarian assistance
		Existence of the religious commonalities	Existence of the religious commonalities in accepting refugees
		Existence of the security concerns	Lack of security concerns
		Existence of historical commonalities or other solidarities with the host society	Attention to the religious-historical commonalities or other solidarities
	Economic, social and cultural considerations	Proximity to the local population	Close to local residents, not being isolated, providing business opportunities
		Paying attention to the cost	Able to use the shelter when not needed anymore
		Proximity to the local markets	Accessing the local markets
		Access to food resources	Access to the transportation facilities for humanitarian services and food resources
		Distance from tourist centers and tourist attractions	Distance from the tourist areas
		Distance from the historical centers	Distance from the historical centers
	Land ownership	Governmental	Considering land use rights or natural resources belonging to host communities or neighbours
		Private	Consider the rights of private sector owners and obtain their consent
		Public	Location of camp and shelter in public places for access

Ethics Approval

The study protocol was approved by the Ethics Committee of Tehran University of Medical Sciences (ethics code: IR.TUMS.SPH.REC.1398.076).

Results

In the initial literature search, 18816 articles were retrieved, 17814 articles were identified in the scientific databases, and 102 articles were identified through a regular individual search in Google Scholar and other sources. At the next stage, 8692 duplicates and repetitive articles were eliminated. Finally, 10124 articles were selected for the screening process. After screening, 10086 articles were eliminated based on the review of the titles and the abstracts. Finally, 38 articles were selected for the current review based on the assessment of the full text, 25 of which qualified for data extraction.

The remaining articles (n=25) were thematically analyzed and categorized based on the criteria and indicators. The PRISMA flow chart was used to prevent diffusion bias, and no studies were found following the manual search process of the reference lists of the final articles. Figure 1 depicts the selection and screening processes of the articles.

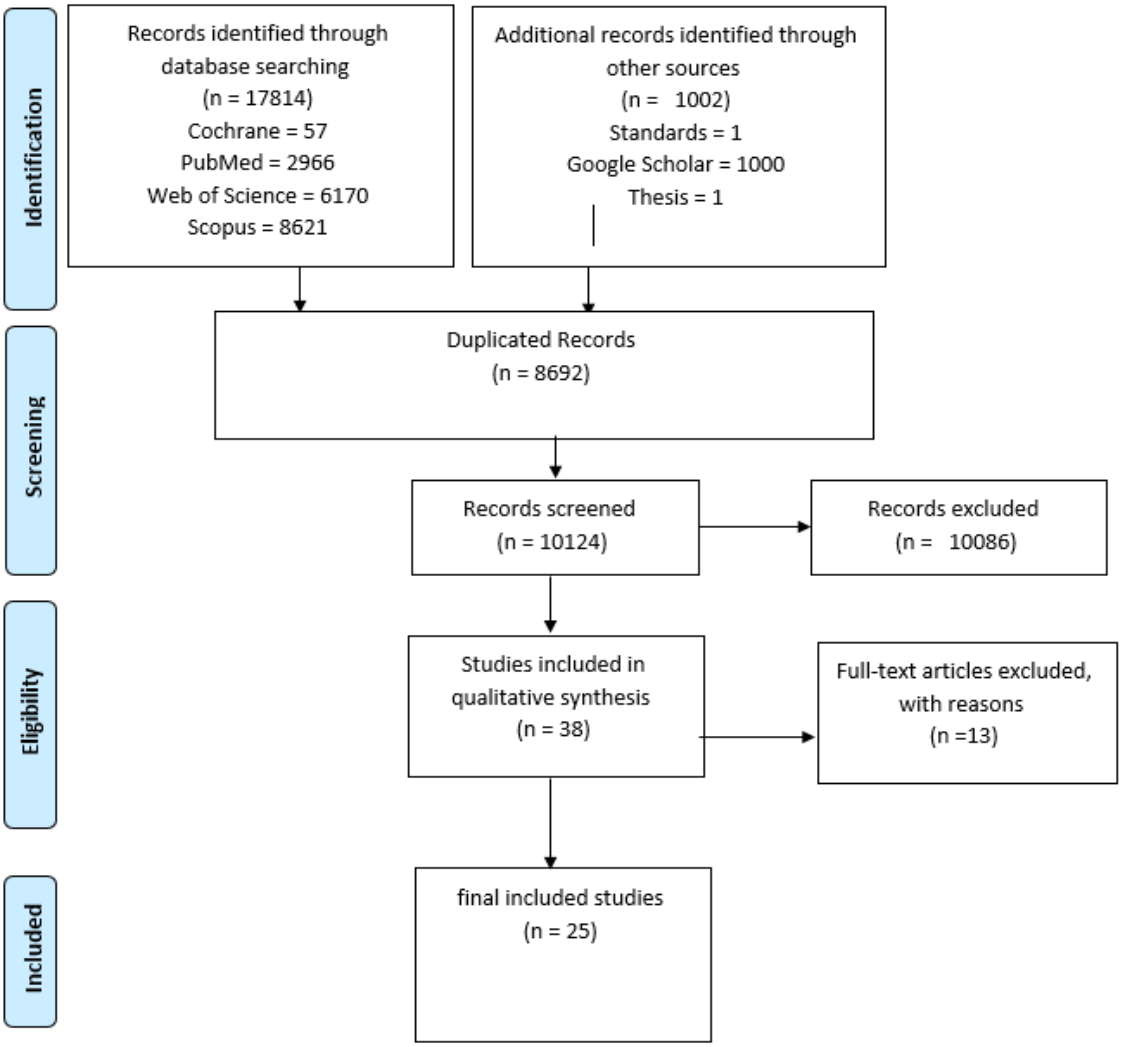

Fig. 1: Flow Chart Diagram of the Screening Process of the Included Studies on Criteria Affecting Temporary Shelter Locating for Refugees of Conflicts

Descriptive Results

Among 25 reviewed articles and document, 12% (n=3) were from the United States, 12% (n=3) were from Europe, 72% (n=18) were from Asia, and 4% (n=1) of documents was standard for "Humanitarian Charter and Minimum Standards" (Sphere Project). In Asia, about 22% of the articles (n=4) were from Iran, none of which were about conflicts. No systematic reviews were identified on conflicts. On the other hand, only one article (4.2%) was a systematic review of the criteria of temporary shelters in earthquakes (7).

Most of the reviewed articles and documents did not focus on the hazards of conflicts, and only 8.3% (n=2) were about locating shelters in conflicts, while 12.5% (n=3) were about storm and flood. In addition, only 4.2% of the articles (n=1) investigated refugee and IDPs. Eight articles (33.3%) focused on the displacement of the refugees of earthquakes, while 37.5% of the articles (n=9) were about determining shelters for disasters, unspecified conditions, and urban emergencies. Finally, only one article (4.2%) studied accommodation. According to the results of quality assessment, out of 25 documents, 20 (80%) studies were classified as the "high quality" score ones.

Thematic Results

In the current review, 45 criteria from the reviewed articles and documents were identified through the data extraction process and were finally divided into six subcategories of land ownership, the host government, access to infrastructures, site safety, land characteristics, and sociocultural economic factors. Furthermore, the main categories were classified into of physical and non-physical ones.

None of the reviewed articles comprehensively studied all the aspects of the criteria for the resettlement of the refugees of conflict, including the physical and non-physical influential factors in these shelters. These studies only evaluated the criteria sporadically, while the referencing and classification of the related criteria were detailed for shelters of conflicts refugees includes the following criteria: geographical, infrastructure, risk-related, and social criteria (11). Other important criteria mentioned in this regard include the following: criteria for location/area, disaster risk reduction, access to relief/rescue centers, environmental/social aspects (7), infrastructure criteria, accessibility, sustainability for refugees (17), disaster risk criteria, location characteristics and infrastructure for disaster-affected refugees (18), location criteria, safety, urban infrastructure, physical/cultural adequacy, environmental considerations, public access, and economic aspects (19). Notably, some of these studies had selected temporary shelters using GIS for refugees based on different criteria (11, 20, 21). The criteria and indicators of the shelters were also extracted from other articles and documents (Table 2).

Limitations of the Synthesis

The main limitation of the synthesis was related to the classification of the found variables. Regarding the opinions of the research team, it was decided to manage it through classifying the variables based on their similarities and differences.

Table 2: Criteria extracted from the reviewed articles

Reference	*Criteria*
Ajibade O (22)	Water, Drainage, Slope, Suitable Land,
Jamil H (12)	Population, School
Trivedi A (9)	Size, Fault, Flood, Landslide, Health Services, Markets, Food Storage, Cost, Ownership, Roads,
Sphere Project (24)	Ownership, Religious-Historical Commonalities, Security, Water, Health Services, School, Recreation and Religious Centers, Environmental Impacts, Flood, Land Slide, Fault, Security, Local Markets, Volcanic Activity, Storm, Risk of Disease or Contamination or Disease Carriers, War Zones, Comment Local Authorities, Vegetation, Transportation Roads, Seasonal Restrictions, Drainage, Slope,
Chen Z (8)	Historical Centers, Gas Stations, Power Transmission Lines, Rivers, Budget,
Chu JY (24)	Highways, Train Stations, Water, Electricity, Fault, Size, Landslides, Floods, Tsunamis, Flammable and Explosive Substances and Radioactivity, Medical Centers
Chu JY (25)	Size, Roads, Fault, Flood, Landslide, Drainage, Flammable Material, Explosive and Radioactive Materials, Power Transmission Lines
Isahak A (26)	Rivers, Beaches, Cultural, Local Communities Participation,
Chu J(18)	Size, Hazardous Sources, Flammable Material, Warehouses, Power Transmission Lines, Hazardous Chemicals, Size, Road, Geological Disasters, Water, Electricity, Garbage Systems,
Soltani A(6)	Size, Damaged Areas, Infrastructure, Drainage, Slope, Height, Early Warning System, Water, Medical Centers, Rescue Centers, Communication Services, Cost, Ownership, Environmental Considerations, Vegetation, Traditions and Customs, Road, Wind, Population,
Xu W(28)	Population, Fault, Slope, Size,
Nappi MML(19)	Transportation Facilities, Airport, School, Health Services, Size, Road, Safety, Fire System, Sewage System, Garbage System, Water, Environmental Considerations, Vegetation, Costs,
Pan A(28)	Road, Costs,
Li ACY(29)	Wind, Safety, Roads,
Boostani A(17)	Relief Clinics, Telecommunication Networks, Road, Railway, Airport, Energy Resources, Economic and Social Factors, Environmental Aspects, Political Stability, Size, Populations, Vegetation, Floods, Wetlands, Markets, Slope, Fault, Landslide, Water, Electricity, Fuel Sources, High Voltage Power Stations, Gas Transmission Lines, Refineries, Flammable Materials, Explosives and Radioactive Materials,
Mas B(21)	Slope, River, Vegetation, Water, Energy Supply,
Song S(13)	Topographic, Costs, Human Concerns, Host Government, Recreational and Cultural Facilities, Consideration Environmental, Power Plants, Telecommunication Network, Water, Health Facilities,
Soltani A (7)	Size, Faults, Slope, Medical Centers, Relief Centers, Water, Security, Environmental Aspects, Social Conditions, Vegetation, Infrastructure, Drainage, Height, Safety, Early Warning Systems, Recreational Areas, Costs, Ownership, Previous Land Use, Culture and Tradition,
Junian J (20)	Roads, Fire Service, Area Size, Health Centers, Faults,
Çetinkaya C (11)	Size, Water, Forest, Windy Areas, Height, Slope, Flood, Landslide, Fault, War Zones, Drainage, Roads, Railways, Ports, Airport, Ownership, Local People, Tourist Attractions,
Bashawri A (30)	Climatic Conditions, Cultural Conflicts and Differences, Cost, Subsequent Uses, Safety, Security, Water, Health Centers, Local Markets, Costs, Waste,
Trivedi A (31)	Infrastructure, Topography, Slope, Food Warehouses, Health Services, Ownership, Security, Safety, Climatic Hazards, Cost, Ground Hardness, Telecommunication Facilities, Local Markets, Main Road, Landslide, Flood, Early Warning System, Airport, Local Road, Fuel and Wood, Electricity, Water, Sewage System, Drainage, School, Welfare Facilities,
Ertugay k(32)	Security, Health Services, Fire Stations, Costs, Transportation Routes.
Wei l(33)	Park, Green Space, Square and Stadium, Subsequent Use, Security, Safety, Flammable, Explosive, Chemical and Radioactive Materials, Faults, Landslides, Roads.
Liu Q(10)	Faults, Early Warning System, Roads, Experience and Knowledge of Experts, Health Centers, Sports, Slope, Floods, Tsunamis, Faults, Rock Falls, Landslides, Size, Culture, Infrastructure, Riverbed.

Discussion

The present study aimed at determining the criteria for locating temporary shelters for conflict refugees through a systematic review. The resettlement of refugees plays a key role in preserving and saving human lives and should be planned and established in safe places based on the humanitarian charters of refugee camps (12). Our findings indicated close correlations between the identified criteria, categorized into the physical and non-physical characteristics of shelter sites based on the classification derived from the studies examining the similarities among the identified criteria.

Few studies have used GIS to address the geographical hazards, infrastructures, and social criteria of refugee shelters (11). The accommodation of refugees involves other criteria, not be specified by the GIS alone since geographical studies mainly assess the criteria applied to the necessary layers that are applicable to the GIS; which may not be valid for all the criteria and may also limit other criteria. According to the information, presented in Table 2, the criteria were divided into two more comprehensive and general categories of physical criteria and non-physical ones. In addition, most of the studies on temporary shelters have examined the housing of earthquake refugees (6-8, 10, 17, 18, 27, 32).

Although the criteria for locating earthquake IDPs are similar to the criteria for those displaced by the conflicts, these two groups of forcibly IDPs are distinguished from those affected by earthquakes. The earthquake-displaced people often live close to their home where the earthquake occurred (7), while conflict refugees are reluctant to settle in the places where the conflict occurred. Therefore, one of the criteria for selecting the temporary shelters of the refugees displaced by conflict is the distance from war zones and incidents (11), as well as for the shelters of the IDPs affected by earthquakes. According to the minimum humanitarian standards, refugee shelters should be in a safe place far from actual and potential risks (23). Furthermore, the distance from the disease carriers is very vital because ignoring this criterion may have many consequences such as pain, suffering and death of refugees. To avoid damaging the shelter, distancing from windy areas, especially for tent shelters, should be given special attention. The main influential factors in temporary shelters in most articles and documents were the vastness of the site allocated to shelter construction and topographic conditions (7, 18, 19, 23, 25). Accordingly, these criteria have been categorized as local land, with one of the features recognized as the criterion of the vastness of the land (23), be proportional to the number of the displaced populations based on the humanitarian charters (i.e., 45 m^2 per person in open spaces, four m^2 per person indoors). Geographical location and seasons are also among the criteria needing to be considered for the process of locating shelters. Decision-making regarding shelter locating should be different in mountainous areas with a chance of snow and blizzard from non-mountainous areas.

The located area for shelter construction should also have proper drainage and slope (12). It is important to consider land with acceptable permeability and a slope of approximately five degrees to guide suitable surface water, the proper height of the area so that it is on a large surface above the surrounding land, and not situated in the torrent- or flood-prone areas. Based on most of the reviewed articles, access to infrastructures is among the foremost criteria for the resettlement of refugees (19, 30, 33). By implementing these criteria, long-term accommodation of refugees is possible, and may even prevent them from returning to their homes shortly after a disaster or conflict due to the lack of conditions of war and conflict. Therefore, the same urban facilities and infrastructures prepared for the local populations must also be accessible to the refugees.

Access to the health centers (19, 12) and relief centers should be regarded as an important criterion. Moreover, transportation routes are among the important criteria considered in order to provide humanitarian assistance from other countries and international organizations.

The political determination and commitment of the local communities and governments to accept the displaced and refugees play a pivotal role in the

proper reception and accommodation of refugees and displaced people. In case they are not interested in accepting refugees, secondary disasters and the subsequent events may occur following the forced migration (13, 19, 12).

Commonalities between the displaced and host communities in terms of religious values and ethnicity could be an effective criterion in accepting the new housing and accommodation on behalf of refugees. These subscriptions may even encourage the resettlement of IDPs in the private homes of members of urban and rural communities. Security concerns are another important criterion for the accommodation of refugees (13, 12).

Land ownership is another important factor in this regard, which may become problematic if not managed appropriately. Despite the need for sufficient space for the settlement of refugees, more attention should be paid to the space required per person, as well as land rights and ownership (7, 11, 12, 31). Land ownership of the sites needed for refugee accommodation must be clear, and land ownership rights must be specified and recognized officially. Notably, private properties may cause more problems in the resettlement of refugees and should not be prioritized as landowner/owners may not be willing to cooperate in this regard. Public and government-owned lands that are in alignment with national and community policies are considered a more viable option for accepting refugees as they are associated with the least resistance.

In the accommodation of the displaced, special attention must be paid to the costs when the located areas are no longer used for this purpose after a disaster or conflict (33). There is the possibility of a prolonged stay as refugees in a temporary shelter. In order to reduce the cost of building a refugee shelter, it is necessary to define and consider several uses for abandoned camps.

Another criterion for resettlement is the proximity and access to the local population such as villages or towns. The importance of this issue is that these places provide opportunities for socio-economic activities and prevent the exclusion or isolation of refugees (11).

Another criterion in this regard is maintaining the necessary distance from historical monuments (8, 11). Camps should be far from historical sites and buildings, monuments, cultural heritage, and national sites in order to protect the culture, traditions, and historical monuments of the host government and communities.

Although most of the key words of the MeSH Database were available in our compiled search strategy, one of the main limitations of conducting the present systematic review is the lack of using the MeSH Database.

The other limitation of this study was that only English articles and documents were reviewed, and the articles published in other languages were not assessed. Moreover, we did not have access to the full text of some documents, which might have affected the comprehensive definition of the criteria.

Conclusion

Although previous studies have identified some of the influential factors in the efficient construction of refugee shelters, no comprehensive models are available within this context. Therefore, the results of this systematic review study could be applicable to design and development of the comprehensive model based on the affecting factors.

The combination of the factors recognized in the present study categorized as the physical and non-physical ones with the qualitative studies based on stakeholders' opinion could be practical in designing appropriate models for the resettlement of the refugees of conflict.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflicts of interest

None declared.

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