Factors Associated With Relief Overdemanding in The Disaster Response Phase: A Qualitative Content Analysis

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Abstract

Demand for relief increases after disasters. Some research suggests that the number of relief supplies required to satisfy the relief demanding after disasters is significantly higher than preliminary estimates, especially in low and lower-middle-income countries. So, this study was aimed to explore the reasons for relief overdemanding in the disaster response phase. In this qualitative content analysis study the managers of the National Disaster Management Organization (NDMO), the Iranian Medical Emergency and Accident Management Center, Tehran Disaster Mitigation and Management Organization (TDMMO) and the Iranian Red Crescent Society (IRCS) were purposively sampled and invited to interview. The unstructured face-to-face interviews were recorded, transcribed, and analyzed using "constant comparison" and "microanalysis" methods. 21 agreed to participate and were interviewed. The interviews uncovered affected people-level factors such as the react to fear and anxiety and the unsatisfied demand due to improper distribution of facilities and crisis managers-level issues (e.g. facing people's dissatisfaction, incorrect or insufficient information and considering disaster as the opportunity to raise resources) as well as officials-level determinants (e.g. advertising and excitement, the partisanship of officials and low confidence on accident managers). Several factors influencing the relief overdemanding exist in disaster management in Iran. Strengthening local management when responding to disasters and conducting efficient disaster need assessment can reduce relief overdemanding and vastly prevent wasting surplus resources in the affected area.

1. Introduction

Disasters can happen all over the world. They are unpredictable and now part of people's lives (Zhang and Huang 2018). Evidence shows that the number of disasters is increasing dramatically and is about to increase five times in the next 50 years (Mahdavi et al. 2015). In the last twenty years, more than 1.3 million people have lost their lives and 4.4 billion people were injured, rendered homeless, displaced, or in need of emergency assistance. During this period, disaster-hit countries reported direct economic losses of $2.9 trillion US which climate-related disasters accounted for 77% of the total. The last twenty years have seen a dramatic rise of 151% in direct economic losses from climate-related disasters (CRED and UNISDR 2018).

When a disaster happens, immediate emergency responses are needed to save lives and relieve and control the damages. Hence various resources and equipment are utilized in the relief logistics process to effectively manage the crisis and provide the necessary relief commodities to the affected people (Lu et al. 2016). These resources include organizing and sending the health care workforce to provide relief, health care, and necessities of life for the injured, including tents, blankets, clothing, living and food supplies, and financial resources such as loans and grants to start and complete the reconstruction (Melis and Jean 2021).

Relief logistics (also known as logistics of relief materials) is the most efficient intervention operation and yet one of the most challenging issues in emergency response to disasters (Liu et al. 2018). The problem
here is that relief logistics operate in environments with uncertain and dynamic features (both in the supply side and demand side), and the precise relief demands are particularly complicated to determine due to the uncertainties (Zhan and Liu 2016). Furthermore, disaster relief demand is specifically hard to quantify because the magnitude, location, and timing of disasters can be highly unpredictable (Ozdamar 2017). Nevertheless, research suggests the amount of relief supplies required to satisfy the demands of disaster victims especially in low and lower-middle-income countries is significantly higher than preliminary estimates (Falasca and Zobel 2011, Khankeh et al. 2011, Afshar and Haghani 2012). Therefore, the governments have to spend most of the financial resources provided to disaster response management to meet the demand for relief to the affected people, and disaster relief logistics has emerged as a theme of their concern since the available funds are restricted and should be used optimally (Gossler et al. 2019).

According to recent studies, humanitarian and rescue organizations spend billions of dollars each year to help victims of disasters (Bastos et al. 2014, Chang et al. 2011, Gossler et al. 2019). In 2017, an amount of $27.3 billion US was allocated to the international humanitarian response [7]. In this context, it is notable that relief logistics account for a considerable proportion (up to 80 percent) of disaster relief costs and tasks (Hein et al. 2020). For example, after the Tohoku crisis in 2011, which caused $360 billion in financial loss, the Japanese government spend more on economic and public support for affected people than on reconstruction of the public infrastructure (Authors 2017). Remarkably meeting the needs of the affected people through logistics processes is the most costly part of disaster response operations, which, if conducted properly, can save resources and improve the quality of care and ultimately reduce economic and social problems (Schulz 2009). Furthermore, relief over-demanding in the disaster response often leads to massive emissions and accumulation and waste of surplus resources in the affected area. The lesson learned from Bam earthquake management confirmed that the attendance of more than enough staff of rescue organizations and volunteers in the affected area was a great challenge of disaster management so that providing daily necessities for these people was a big concern for local managers (Khankeh et al. 2011). However, appropriate delivery of relief resources to disaster victims is critical to the emergency response to disasters. Although some other works address the relief uncertainty and several problems related to relief logistics have been discussed (Sheu and Pan 2015, Lin et al. 2020), unfortunately, literature in relief demanding is very limited, and factors associated with the relief over-demanding are not studied yet. Therefore, this study was conducted to investigate the reasons for relief over-demanding after the occurrence of disasters.

2. Methods

2.1. Study design and population

A qualitative content analysis study was conducted. The participants were selected using the purposive sampling method to obtain information-rich items (Table 1). The study population included all managers with firsthand experience in resource allocation and post-disaster need assessment who were willing to participate in the study. Since preparedness and response to disasters in Iran is mainly led by four
organizations, included the National Disaster Management Organization (NDMO), the Iranian Medical Emergency and Accident Management Center, Tehran Disaster Mitigation and Management Organization (TDMMO), and the Iranian Red Crescent Society (IRCS), we selected the participants from managers of mentioned organizations. The inclusion criteria included having at least five years of work experience in resource allocation and post-disaster need assessment. The exclusion criteria were the inability to interview during the study period. The participants were recruited until theoretical data saturation was achieved. Finally, twenty-one agreed to participate in the study.

Table 1 Characteristics of study participants

| Variables               | Frequency, n (%) | Mean ± SD |
|-------------------------|------------------|-----------|
| Age (year)              | –                | 42 ± 7.32 |
| Gender                  |                  |           |
| Male                    | 21 (100)         | –         |
| Female                  | 0 (0)            | –         |
| Education level         |                  |           |
| Bachelor’s degree       | 5 (23.8)         |           |
| Master’s degree         | 7 (33.4)         |           |
| M.D or Ph.D             | 9 (42.8)         |           |
| Work experience (year)  | –                | 15.85 ± 4.02 |

SD standard deviation, M.D Doctor of Medicine, Ph.D philosophiae doctor

2.2. Data collection

Unstructured face-to-face interviews were used to collect the participants’ experiences. All interviews were recorded with the consent of the participants by a digital tape recorder. The initial interviews were about their experiences with resource allocation and need assessment. Then, some questions were added to fill in the gaps in the initial interviews. Probe questions were used during the interview to clarify the topic and guide it to the research topic.

2.3. Data analysis

After assigning a code to each interview, the text of the interview was typed in Microsoft office word 2013 software, read, and coded several times. For data analysis, MAXQDA10 software, "continuous comparison" and "microanalysis" methods were used. Finally, the primary codes, subcategories, and main categories were formed, which are shown in Table 2.

2.4. Ethical consideration
This study was approved by the research ethics committee of Iran University of medical sciences, Tehran, Iran (Approval ID: IR.IUMS.REC 1394.9221567204). To observe ethical principles, the participants who were willing to participate in the study were informed about the study objectives and the approval obtained from the ethics committee as well as recoding their voice with a digital audio recorder.

3. Results

Participants had an average of 15.85 years of crisis management experience. The average age of the participants was 42 years. The average interview time for participants was about 51 minutes. The main extracted theme of the study was "excessive demand due to feeling of dependency, chaos, and uncertainty." The interviews uncovered affected people-level factors and crisis managers-level issues as well as officials-level determinants. (Table 2)

3.1. Feeling of dependency in affected people

The subcategory of "feeling of dependency in affected people" comprised four concepts, i.e., "believe in the responsibility of the government to meet all needs of the affected people," "unsatisfied demand due to improper distribution of facilities," "unsupported promises by managers and officials" and "react to fear and anxiety. Feeling of dependency in affected people was a major cause of relief over-demanding in disaster response. The feeling of dependency was due to many factors such as losing loved ones, job, capital, and other things after a disaster, fear and anxiety, or some management factors such as unsupported promises by some officials.

P13 "Usually, after disasters, fear and anxiety increase in the community following of dissemination of erroneous, alarming and exaggerated information, which results in increased dependence and the need for help in affected people."

P5 "In the Sarpol-e-Zahab earthquake, every relief organization tried to meet the needs of the victims without coordination with other organizations, even without conducting a proper and accurate needs assessment, which led to the unfair distribution of facilities and the dissatisfaction of the affected people."

3.2. Intentional overstatement of local crisis managers

The category of "Intentional overstatement of local crisis managers" was comprised of five concepts, i.e., "considering disaster as the opportunity to raise resources," "show off and organizational interest," "lack of information due to inaccurate rapid assessment," "reducing the work of local teams" and "facing people's dissatisfaction. According to the participants, some incompetent managers take disasters as an opportunity to get funding from the central government. They know that the government support from local managers increases after disasters and emergencies, so they attempt to receive as much financial support as they can by bringing officials to the region."
In the management of the Kermanshah earthquake, one of our problems was that the assessments depended on the assessors' desires; the same thing happened in the Arbaeen march because they are looking for opportunities to provide resources for their institution. Even in the reconstruction phase, the expressed damages are on the buildings that were not related to the earthquake.

Sometimes government agencies themselves overstate their needs because they see the crisis as an opportunity to raise resources, for example, we did not have any casualties in hurricane Gono (in Iran), and it was just flooding, but some local managers overstated the needs due to their organizational interest.

### 3.3. Interference of other officials

The category of “interference of other officials” was comprised of six concepts, i.e., "overdemand of other propaganda officials and publicity in the media," "low confidence on accident managers," "partisanship of officials," "advertising and excitement," "incorrect or insufficient information" and "party interest."

Sometimes the needs are expressed too much by some VIPs. For example, the representative of the region aims to present himself and to show compassion toward people. In the Khorasan earthquake, the representative slammed the government on the radio, saying, why are there so few facilities in the area? To show that he boldly supports the affected people, because the election was just around the corner.

One of the problems is that provincial officials do not know how to deal with the crisis and interfere in the crisis management process.

**Table 2** Factors associated with the relief overdemanding
| Category                                      | Sub-categories                                      | Concepts                                                                 |
|----------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------|
| Excessive demand due to feeling of dependency, chaos and uncertainty | Feeling of dependency in affected people          | Believe in the responsibility of the government to meet all needs of the affected people |
|                                              |                                                     | Unsatisfied demand due to improper distribution of facilities            |
|                                              |                                                     | Unsupported promises by managers and officials                            |
|                                              | Intentional overstatement of local crisis managers  | React to fear and anxiety                                                |
|                                              |                                                     | Considering disaster as the opportunity to raise resources               |
|                                              |                                                     | Show off and organizational interest                                     |
|                                              |                                                     | Lack of information due to inaccurate rapid assessment                   |
|                                              |                                                     | Reducing the work of local teams                                        |
|                                              | Interference of other officials                     | Facing people's dissatisfaction                                          |
|                                              |                                                     | Overdemand of other propaganda officials and publicity in the media      |
|                                              |                                                     | Low confidence on accident managers                                     |
|                                              |                                                     | Partisanship of officials                                                |
|                                              |                                                     | Advertising and excitement                                              |
|                                              |                                                     | Incorrect or insufficient information                                    |
|                                              |                                                     | Party interest                                                           |

### 4. Discussion

The present study found “excessive demand due to feeling of dependency, chaos, and uncertainty” as the main theme. In this study, factors such as feeling of dependency in affected people, intentional overstatement of local crisis managers, and interference of other officials were identified.

### 4.1. Affected people-level factors

The affected people are the main source of information for assessing the needs and distribution of equipment and facilities (Bathaei et al. 2019). Therefore if they express their needs more than what they are probable, the demand for relief will increase significantly. Some affected people-level factors associated with relief overdemanding were identified in this study. According to the participants, reactions to fear, anxiety, and stress were the main causes of relief overdemanding in affected people. Also,
unsatisfied demand due to improper distribution of facilities was another reason for the relief overdemanding. Stein et al. (2004) found that health care seeking by people who are not really at risk or affected, but seek health care due to fear and anxiety, has been noted during terrorist attacks, e.g., following the Tokyo anthrax attacks in, 2001 thousands of people who were not at risk for exposure obtained prescriptions for the antibiotics (Stein et al. 2004). Makwana (2019) reported that the stress after disasters could disturb both interpersonal interactions and a sense of community (Makwana 2019). Similarly, North and Pfefferbaum (2013) found that the affected people have difficulty meeting the needs of life, at least in the short term, and may exaggerate their reconstruction needs (North and Pfefferbaum 2013).

The participants’ experience showed that in developing countries, including Iran, disaster-affected people expect their needs to be fully met by the central government, which cause them to become psychologically dependent on government assistance and act passively in the response and reconstruction process, resulting in a tendency to overstate the actual needs. In addition, some crisis managers, due to restricted experience, prefer not to involve the affected people in the response phase and the reconstruction process, which ultimately reduces their satisfaction in meeting their needs. Karunasena (2010) in his study on post-disaster housing reconstruction showed that beneficiary satisfaction is higher on the owner-driven approach compared to the donor-driven approach (Karunasena 2010). Maya (2013) showed that need assessment after a disaster should start with the involvement and participation of the affected community, and the people should not be looked at only as recipients of services and assistance. He retrieves that a participatory approach should be adopted so the affected people needs can be understood and the necessary measures can be taken to meet their needs (Maya 2013).

The results showed that in the absence of an appropriate program for the distribution of facilities, the emotions and feelings of rescuers and other people have led to excessive distribution and waste of resources. Thus some affected people are deprived of receiving the resources. According to Lyles (2005), to avoid chaos in the distribution of resources, there is a need for full and comprehensive coordination between government and non-governmental organizations because lack of this coordination leads to an arbitrary distribution of resources (Lyles 2005). Sheu found two problems as the main challenges of distribution of facilities in times of disaster, including delays in the provision and distribution of resources and facilities among victims and the lack of accurate and timely information on the amount and type of requirements in the affected population (Sheu 2007). Finally, in the competition to receive any assistance, many disaster victims tend to overstate their needs in comparison to what they believe them really to be (Henstra 2010).

4.2. Crisis managers-level issues

Considering disaster as the opportunity by some local crisis managers to raise resources also led to an increase in relief demanding. According to the participants, during disasters in which the central government is paying more attention to allocating resources, these managers have the opportunity to compensate for pre-crisis shortcomings and prefer not to provide accurate statistics of needs to be able
to receive more facilities and equipment. Therefore they may intentionally overstate the resources required for disaster response. Bonanno et al. (2010) found that disaster managers often believe that the greater the crisis seems, the more support and resource will be accessible, provides the opportunity for reconstruction (Bonanno et al. 2010). Henstra (2010) also showed that the overstatement of a disaster impact is often followed by an overstate of the needs required (Henstra 2010).

According to the participants, the overstatement of needs by local crisis managers may inadvertently occur following the lack of information in the early stages after the disasters. Typically, the type and extent of disaster damages and subsequent needs are assessed by a rapid, detailed, and continuous assessment. (Bathaei et al. 2019, Wilson et al. 2016, Bradt and Drummond 2002, Korteweg et al. 2010). But after disasters almost access to ordinary sources of information is difficult due to evacuation and/or dysfunction of many public buildings, damage to communications equipment, and congested telecommunications traffic in the disaster region (Morton and Levy 2011). In addition obtaining information from the ground survey is time-consuming and costly, and consequently, most assessments are based on estimates, which are often overestimated (Morton and Levy 2011, Vecere et al. 2017).

Similarly, Colombo and Checchi (2018) found that delay in the initial assessment, ambiguity in information about the severity and extent of the damage, and the possibility of a secondary accident can lead to the overstatement of needs (Colombo and Checchi 2018).

4.3. Officials-level determinants

Some officials in other organizations may provoke the relief overdemanding. Publicity in the media was the main cause of relief overdemanding by other local officials. Also, the party interest of officials was another reason for the relief overdemanding. Ahmed (2013) in Pakistan found that there are not only inefficiency and political interference in departments concerned with the DRM, but also rampant corruption, lack of coordination and linkage among the network of disaster management institutions, as well as criminal negligence (Ahmed 2013). Yamamura (2013) also reported that disasters can generate an incentive to engage in corruption, which is generally defined as the use of public office for private gain (Yamamura 2014). Moreover, there have been instances where the occurrence of disasters provided politicians with an incentive to misallocate disaster expenditure to increase the probability of their re-election (Garrett and Sobel 2003).

The results showed that among the factors affecting the relief overdemanding was the weakness of crisis managers in providing and disseminating timely and appropriate information. According to the participants, the lack of information about the disaster impacts and damages often causes excitement of national and local authorities and their distrust of crisis managers and leads to unfavorable reactions in them, which can be exacerbated by the bad situation of the people affected by the accident. Incorrect or insufficient information about the disaster situation also led to an increase in relief demanding by the officials. Similarly, Colombo and Pavignani (2017) found that in disaster situation the most communities depends on the mass media for data, and officials when interviewed offer guesses that are then reported in a way which usually indicates the uncommon and mass casualty incident (Colombo and Pavignani 2017).
5. Conclusion

Several factors influencing the relief overdemanding including affected people-level factors and crisis managers-level issues as well as officials-level determinants were identified in this study. Although the relief overdemanding can only be somewhat logical in the super-acute phase of the disasters, it can exacerbate the challenges of crisis management in the following phases.

Given the present research as one of the few studies conducted on relief overdemanding after disasters, similar studies are recommended that be conducted in this context using different methods.

Finally, strengthening local management when responding to disasters and conducting efficient disaster need assessment can reduce relief overdemanding and vastly prevent wasting surplus resources in the affected area. It can also save money and resources for disaster managers and increase the impact of disaster relief materials for affected people.

Declarations

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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