**Nursing roles in disaster zones: Experiences and lessons from Turkey’s earthquake**

**Abstract**

**Background**

Disasters have a global impact on human health and well-being. Nursing plays a vital role in disaster preparedness and response by ensuring efficient early response coordination and delivering effective field treatment.

**Aim**: The study focuses on the challenges encountered by the official Israeli humanitarian delegation during their mission to the Turkey earthquake zone in February 2023. It investigates the difficulties faced in both the preparation and operational phases, as well as the conclusions drawn after the mission's completion.

**Methods**: Twenty-two nurses who were part of the humanitarian delegation were interviewed in three separate focus group meetings. These interviews were recorded, transcribed verbatim, and analyzed thematically using the 32 items outlined in the COREQ guidelines.

**Findings**

The study's findings were organized into chronological main themes around pre-departure preparation, working in the disaster zone, and post-mission conclusions. They were further divided into subthemes.

The sense of national mission was evident in the participants. Even though participants expressed generally positive feelings towards the mission, many interviewees noted the logistical issues, as well as difficulties in collaboration with local teams.

**Conclusion**

Nurses play a crucial role in disaster zones, including their integration into local healthcare systems. The insights provided by nurses can enhance the preparation of humanitarian delegations for disaster zone operations and contribute to post-mission lessons and their practical implementation.

**Implications for Nursing and Health Policy**

Nurse managers and healthcare policymakers can utilize the findings of this study to develop future training programs for nurses in disaster-related skills. Additionally, it can help in fostering collaboration among international healthcare teams.

Keywords: disaster, emergency nursing, humanitarian aid, collaboration, fieldwork, critical care nursing, multicultural team

**Introduction**

In the past decade, there has been a noticeable increase in the frequency of both natural and man-made disasters on a global scale. Responding promptly to these crises is of utmost importance in ensuring effective humanitarian aid and saving lives (Li et al., 2023). In February 2023, southeastern Turkey's Kahramanmaraş region experienced two powerful earthquakes, measuring 7.8 and 7.6 in magnitude, resulting in an estimated 57,000 fatalities. This made these events the deadliest in modern Turkish history (Hussain et al., 2023).

Nurses are indispensable for the smooth operation of hospitals, encompassing clinical and psychological aspects, and they play a pivotal role in the context of emergency field hospitals (Pourvakhshoori et al., 2017; Segev, 2022). Nurses assume responsibility for coordinating care and providing practical solutions to the myriad challenges that arise in disaster areas. They maintain safety standards and ensure continuous communication while upholding the highest ethical principles in caring for disaster victims (Richards et al., 2023; Moradi et al., 2020). Despite their critical role, gaps in nursing preparedness training persist, leading to an inadequacy in disaster preparedness competence (Labrague et al., 2018; Taskiran & Baykal, 2019), a lack of emphasis on disaster education and research (Al Harthi et al., 2020), and insufficient measures to mitigate long-term emotional distress among nurses (Johal & Mounsey, 2017; Mounsey et al., 2016; Segev, 2022).

Since the 1953 Greece earthquake, The Israel Defense Force Medical Corps (IDF-MC) has acquired considerable experience deploying humanitarian delegations and establishing field hospitals in disaster areas (Alpert et al., 2018). Between 2010 and 2016, IDF-MC operated six humanitarian hospitals worldwide (Glick et al., 2016). The IDF-MC delegation dispatched to Turkey on February 8th, 2023, just 24 hours after the disaster hit, included 58 physicians, 32 nurses, five paramedics, 15 laboratory technicians, imaging personnel, and 23 administrative staff. They promptly established operations in a nearby hospital building and initiated collaborative efforts with the local medical staff (The IDF Medicine Corps, 2023).

Successfully operating a foreign field hospital involves numerous factors, including efficient logistical planning, the use of appropriate equipment, adaptation to a foreign environment, and overcoming cultural and language barriers (Alpert et al., 2018). Collaborating with local and international teams is essential for enhancing the quality of medical care in emergency situations (Bar-On et al., 2013). While foreign medical delegations often establish independent field hospitals without utilizing local medical equipment and infrastructure (Naor & Bernardes, 2016), the IDF-MC delegation in Turkey integrated into an existing medical facility.

This study aims to describe and analyze the challenges encountered by members of the IDF-MC nursing delegation in this unique situation, as well as their insights following the mission.

**Study Aim**

This study sought to describe and analyze the challenges that nurses encountered as part of a humanitarian aid delegation to Turkey following the 2023 earthquakes. The study also aimed to derive valuable lessons from these experiences that can be applied in similar situations.

**Methods**

Research Design

This qualitative study employed focus groups, as this approach is well-suited for delving into intricate phenomena (Hamilton & Finley, 2019). It has been well-established that focus groups are effective in eliciting detailed descriptions of experiences by promoting interactive group discussions (Sim & Waterfield, 2019). Throughout the study, the authors adhered to the COREQ 32 reporting checklist, as outlined by Tong et al. (Tong et al., 2007).

Participants and Settings

Initially, we compiled a list of all the nurses who had taken part in the humanitarian delegation and contacted them by phone. Out of the 32 nurses we reached out to, 22 agreed to participate in one of our three focus groups, with the number of participants in each group being 7, 4, and 11, respectively. We opted for the Zoom meeting format to accommodate participants from various locations within the country and ensure convenient participation. In order to maintain a free and open exchange of ideas, the second focus group exclusively included nurses with high military ranks, mitigating the potential influence of hierarchical figures. A total of 10 men and 12 women, all with backgrounds in critical care or midwifery, participated in these discussions (see Table 1).

Data Collection

Between March 2023 and May 2023, three separate focus groups convened via Zoom, with each session lasting approximately 60 to 90 minutes. Prior to these meetings, we had prepared an interview guide. This guide included a series of questions, such as: "Could you describe the nursing preparations that were made before departing from Israel?"; "What was your specific role within the delegation team?"; "What sorts of challenges did you encounter?"; and "How did you go about addressing these challenges?". To minimize potential biases, we engaged two authors who were not affiliated with the delegation but possessed extensive experience in qualitative interviewing. One of them commenced each session by introducing the research team and clarifying the study's objectives, while the other guided the course of the conversation. All interactions during the focus group meetings were documented through audio and video recording and later transcribed verbatim.

Data Analysis

The transcriptions underwent a professional translation process, initially from Hebrew to English, and then back-translated from English to Hebrew. Following this, the research team engaged in a comprehensive reading and re-reading of all the transcribed material. Thematic analysis was conducted to identify, analyze, and report recurring patterns within these transcriptions (Vaismoradi et al., 2016). This analysis proceeded through seven distinct phases: (1) text preparation and organization; (2) data transcription; (3) familiarization with collected data; (4) generating memos of the data; (5) data coding; (6) converting codes into categories and categories into themes; (7) preparing a transparent analytic process (Lester et al., 2020).

Ethical Considerations

Prior to their participation, all involved individuals were provided with written documentation outlining the objectives of the study. They were required to sign a consent form indicating their willingness to participate and their agreement to have their responses recorded. Robust anonymization procedures were implemented, affording participants the option to respond to questions at their discretion. The study's content was exclusively accessible to the primary researchers. Ethical approval for the study was granted by both the IDF-Medicine Corps review board (No. 0902-2023) and the Tel-Aviv University Ethics Committee (No. 0006518-2).

Rigor and Integrity

The researchers measured the study data’s rigor and integrity applying four criteria: credibility, transferability, dependability, and confirmability, reflecting Krefting’s guidelines (1991). The primary investigators, both possessing substantial expertise in qualitative methodology, independently analyzed the data before converging to compare and deliberate on their respective findings. Ultimately, participants were afforded the opportunity to review the findings and validate their precision.

**Findings**

The research findings shed light on the integration process between local and foreign teams as they navigated through a multitude of barriers, including political tensions between Israel and Turkey, language disparities, and cultural and social differences. Interviewees conveyed their initial sense of detachment or "otherness," which gradually transformed into a growing sense of camaraderie as they engaged in interactions and caregiving experiences over time. We organized the study's main findings in sets of themes on a chronological axis (Table 2):

1. Pre- departure preparation.
2. Working in the disaster zone.
3. Post-mission conclusions.

**Theme 1: Pre-departure preparation**

The nurses were selected from a pool of potential volunteer candidates based on professional affiliation, supervisors’ recommendations, and participation in dedicated mission training. Participants characterized the first phase as one of preparation and organization. The most prominent positive subthemes were a sense of national mission, and the flattening of the hierarchy between delegation members. Some negative subthemes were also identified: logistical issues and insufficient utilization of the long pre-departure time.

Subtheme 1: A sense of national mission

Once the interviewees agreed to be part of the delegation, they engaged in an initial discussion with the organizers of the mission. During this conversation, they received information about the destination, as well as details about the schedule. Any uncertainties or concerns they might have had were overshadowed by a strong sense of commitment to the mission and a feeling of camaraderie in this national endeavor.

“I immediately jumped at the opportunity; …Curiosity and pride overcame all fears”" (Participant #12).

“I chose to join really from a sense of mission. I think...if you believe in the mission,...you just go. No matter what...immediately, first of all, I said yes…It was both an honor and a great privilege for me to participate...” (Participant #20).

Participant #3 agreed, noting that her family situation was not a factor at that moment:

“I didn’t think twice – the last time [I participated in such a delegation] I left a 5-month-old baby; and I didn’t think this time either. When they asked me, I immediately said yes. First, this comes from a sense of mission; second...it seems clear to me that you are called to the flag”.

It was not just first-timers who conveyed such enthusiasm and a sense of mission:

“This is not my first delegation;...But as soon as there is a task – everything lights up. The strength, the heart, and the energies will all be on the alert... For me there is such a *rush* that you want...to be there already” (Participant #10).

Subtheme 2: Logistical issues

Interviewees noted several logistical issues that arose during the preparation phase; including the lengthy time between the phone invitation to join the mission, the team’s assembly and the actual departure.

Participant #15, like others, described feeling that they had lost time:

“We received the alert Monday morning and the final okay around 9–10 pm... We arrived at 8 am...but [departure] was postponed and postponed and postponed and the 24-hour wait left an impression of disorganization”.

Participant #16 added:

“There were many hours of waiting...From the moment we assembled, it took 36 hours until we landed in Turkey”.

Emergencies inevitably breed uncertainty, making it difficult to anticipate many things, including the quantity and scope of equipment required:

“[We lacked] wound-dressing equipment. The equipment that was packed was based on...needs [such as treating] pressure sores or contaminated wounds, which you don’t see in the field” (Participant #9).

Participant #12 reinforced this:

“In terms of pediatric equipment, there were...many things we had no way to deal with and were simply spur-of-the-moment improvisations. It’s worth maybe adding more...pediatric care providers who will take care of children”.

Subtheme 3: Insufficient utilization of pre-departure time

, and for better briefing and preparation:

Subtheme 4: Flattening the hierarchy

One interesting observation all the interviewees made was that the delegation members’ professional hierarchy faded into the background. During this initial phase, everyone collaborated to accomplish what was required, irrespective of rank:

“Before we set up the emergency room...I didn’t function as an emergency room nurse. I loaded boxes and cleaned containers, assembled air conditioners, built tents. [I was] the person in charge of water and electricity, everyone works with everyone” (Participant #13).

“There’s no such thing as ‘Professor’, [or] ‘Lt. Col.’ (Participant #9).

“By the time we arrived at the disaster zone...everyone was equal” (Participant #14).

Two interviewees emphasized that this collaborative work profoundly affected the tone of the entire mission:

“Everyone is equal and does everything right from the beginning. It creates an atmosphere that the whole group is unified; it’s an important process” (Participant #2).

“A mission of destiny...it led me to work with people...better...connect to them, the work really flowed better and I felt that everyone was pitching in and helping wherever possible...” (Participant #5).

**Theme 2: Work in the disaster zone**

**Participants identified the challenges of working in the disaster zone, both environmental -- inclement weather -- and intercultural -- language barriers, different standards of care, and difficulties in collaborating with local teams.**

Subtheme 1: Inclement weather

The weather conditions made it extraordinarily difficult to enter the disaster zone, as Participant #18 described:

“The day we departed; it was super rainy. All the equipment stood outside in the rain until it was put on the trucks...In Turkey, it was also...raining and cold...The tents weren’t ready to receive [us] and there wasn’t enough heating equipment.”

Participant #9 added:

“The bitter cold was my experience… the first night we slept in tents and I woke up with ice on my face…".

Subtheme 2: Language barrier

In addition to the physical challenges, there were intercultural challenges, such as the language barrier. The local people spoke only Turkish. However, several team members could speak Arabic well enough to communicate with staff and patients, particularly with the many Syrian refugees affected by the earthquake. Participant #22 observed:

“I think that we [nurses] naturally have better communication skills than other professions. Improvisation, body gestures, express everything with emotion... [We] noticed it was easier for us to communicate with the Syrian patients in Arabic.. We have taken care of Arabic-speaking patients [professionally] and have some medically oriented Arabic”.

To overcome the language barrier, Turkish Airlines (Turkey’s national airline) volunteered translation service, which was very helpful for the flow of care, as described by participant #18:

“Turkish Airlines [English-speaking] staff helped us incredibly. [Not] just with translation; they wanted to help beyond that...reassuring families, reassuring patients, lending a hand, providing water, buying us milk for coffee...It shouldn’t be taken for granted that [airline employees] return from a flight and come straight to a hospital to help translate and stay for hours...It really helped. I also think that we learned to communicate with each other”.

Subtheme 3: Different standards of care

A significant challenge for the delegation was operating within existing healthcare facilities. Many described tensions between local staff and delegation members over differing standards of care:

“We entered a place, with a certain institutional behavior, [and] way of working. For example, there were differences between us in handling sterile equipment and in how to take patient histories and do a physical exam” (Participant #15).

Initially, there was skepticism and disagreement between the Israeli and local teams’ medical approaches. With time, the Israeli nurses learned to integrate into the local team and collaborate fully:

“I think that after we received the first patient and they saw how we treated him, there was an increase in trust, and you could see it because when there were more difficult cases...they took a step back. The local doctor in charge cried and asked us not to go [back home] because she understood that we were doing good, while having a dialogue with them and good intentions” (Participant #22).

Subtheme 4: Difficulty of collaboration with local teams

The shared desire to provide quality care built closeness between different teams and their caregivers, and medical knowledge offered common ground, as described by Participant #4:

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However, cultural gaps and different treatment approaches still created division as was described by Participant#16:

“The Israeli team would follow a ‘grand rounds’ routine to examine patients. The Turkish team did not participate, [who] made a separate round after that and then somehow [the two teams] would try to have a discussion. In the first few days, there was no discussion at all”.

Israeli team members tried to speak in English during shift changes and medical data transfers to enhance collaboration with local teams. Participant #6 recalled:

“We decided to speak English as much as possible especially during patient admission [so] the local senior doctor would understand and write the appropriate orders”.

**Theme 3: Post-mission conclusions**

In contrast to difficulties encountered during the first two stages, the delegation’s departure from the Turkish hospital and the process of transferring information and tools to the local teams proceeded relatively smoothly. Several issues relevant to future delegations emerged from the focus groups, such as: an optimal ratio of nurses to doctors, medical records’ language compatibility, software, and post-mission emotional processing.

Subtheme 1: Nurse-doctor ratio

Participants felt that there had not been enough nurses compared to doctors:

“The numerical ratio between nurses and doctors in the workforce was not so balanced... There were more than enough doctors and too few nurses” (Participant #16).

“It was already clear before we left Israel that we had a small number of nurses. We knew...[it could] place a significant burden on nurses” (Participant #18).

Subtheme 2: Medical records software

The medical records software was new and unfamiliar to some delegation members:

“I had never seen our documentation system before, and I would have been happy to study it...before” (Participant #5).

The user interface was in Hebrew, which made it difficult for local staff to use. It also caused delegation members to document patient information in Hebrew, severely hampering collaboration. As described by Participant #1:

“The Israeli computerized system...is irrelevant because it’s in Hebrew and isn’t translated to Turkish. The [patient] documentation...was all in Hebrew, and [the Turkish team] would write notes and try to understand what we wrote".

Subtheme 3: Processing the experience post-mission

Participants shared that they had not received emotional preparation pre-departure. At the disaster zone, a military social worker and the emergency department’s head nurse conducted sessions for processing their experiences; but the sessions were ad-hoc and were targeted at specific issues as they came up.

The nurses acknowledged that military psychologists had checked up on them after returning to Israel. However, there was a prevalent feeling that despite post-mission personal conversations and honorary events, group closure for the experience they had undergone together was lacking. Participant #9 explained:

“There was no closure, and it was missing. Everyone can talk about it on their own, but no one gathered the group [to talk]...There was a very nice closing event initiated by the medical corps that held an appreciation evening, but there was no room for talking”.

**Discussion**

Three major themes emerged in this study, corresponding to three separate time periods: pre-departure, work in the disaster zone, and post-mission conclusions. *Pre-departure preparation* was the first theme participants identified. Nurses felt a sense of mission about participating in the humanitarian aid delegation, highlighted logistical issues, and appreciated the members’ teamwork. International studies examining nurses’ experience during the pre-deployment preparation phase have noted the positive emotions associated with a sense of mission (Christensen & Wagner, 2022; Moradi et al., 2020), along with logistical concerns (Al Harthi et al., 2020; Alpert et al., 2018; Richards et al., 2023). Flattening the hierarchy among delegation members contributed to the team’s sense of unity, but we found no mention of this in the literature.

The findings indicate that pre-departure time should focus on team members’ acquaintance and preparedness for the assignment. Many studies focus on general training and mission preparation (Niu et al., 2022; Ohana Sarna Cahan et al., 2023; Suresh et al., 2021), with only one effectively addressing how the pre-deployment phase can benefit team members through orientation, training and teamwork (Holmgren et al., 2019).

*Work in the disaster zone* was the second theme that emerged*.* Nurses’ complaints focused mostly on inclement weather, especially the first cold, rainy night at the disaster zone and sleeping in tents lacking suitable protection. Another challenge participants identified was interacting with the local population, particularly local medical teams. They found that cultural differences and conflicting perspectives presented formidable barriers, albeit with potential for collaboration. Differences in cultural and professional perspectives among international groups of nurses have long been recognized (Purnell, 1991). Although studies strongly recommended improving cultural knowledge, and thereby improving collaboration with local medical teams (Bar-On et al., 2013; Chin et al., 2022; Lind et al., 2012), we have found no studies of real-time collaboration between foreign and local teams at a single disaster site.

Consistent with the current study, the literature has identified extreme weather conditions as a staff challenge (Hamdanieh et al., 2023). In contrast to disaster zones where, due to massive infrastructure damage, foreign delegations may rarely find available local buildings or equipment (Naor & Bernardes, 2016), the current delegation entered an existing local health facility, which is unusual.

*Post-mission conclusions* was the third major theme that emerged. The nurses shared insights learned from serving at the disaster zone, including recommending increasing the nurse-doctor ratio. In contrast, a previous study indicated that more expert physicians were needed in field hospitals (Burnweit & Stylianos, 2011). Nurses also recommended internationalizing electronic medical record software. This corresponds with earlier studies on medical records and charting that indicates poor nursing disaster competency, suggesting a possible relationship with the environmental constraints affecting nursing competency (Yan et al., 2015; Yin et al., 2011). While several studies have revealed an insufficient level of preparedness among nurses for disaster response and management (Al Harthi et al., 2020; Taskiran & Baykal, 2019), this study offers new insights from nurses on overcoming these challenges by utilizing pre-deployment time more efficiently, improving delegation preparation, and encouraging team cohesiveness while reducing professional hierarchy concerns. The nurses also revealed the need to process the experience after returning. Although many studies have emphasized the importance of providing psychological support to teams providing disaster relief (Johal & Mounsey, 2017; Mounsey et al., 2016; Sadhaan et al., 2022; Segev, 2022; Xue et al., 2020; Zahos et al., 2022), and despite delegation members having been offered some degree of psychological support in the disaster zone and upon their return, the current study indicates that further improvement to building nurses’ resilience is recommended.

**Study limitations and future directions**

One limitation of the study may be its reliance on nurses’ perspectives. Including participants from other professions or logistical disciplines, and drawing on foreign and local perspectives, could provide a broader perspective on the topic. We recommend interviewing participants from a range of disciplines to shed light on multidisciplinary team work at local and international levels.

**Conclusion**

This study emphasizes the crucial role of nursing in emergency disaster relief, particularly as moderators between local and foreign teams as cohesive actors in within their multi-professional delegations. Due to their diverse experiences and skills, nurses may contribute to designing effective disaster preparedness measures. The study contributes to evidence-based knowledge on emergency response and adds a new perspective on cultural sensitivity and cultural competence during disaster, which can be applied to future disaster interventions.

**Implications for nursing and health policy**

The study’s insights can help nursing managers and educators improve disaster and emergency nursing competence and enhance care capabilities. Recommendations emerging from nurses’ experiences could improve future planning of disaster relief programs, from the pre-deployment phase to the mission’s conclusion. Healthcare stakeholders may benefit from the unique insights revealed here addressing weather conditions preparedness, speaking a universal language such as English to enhance multinational team collaboration, and planning international emergency-response collaboration training for local-foreign partnerships. In addition, psychological preparedness in the pre-departure phase, mental support in the disaster zone for foreign and local teams at the end of each work day, and debriefing group meetings post-mission are vital for preventing long-term reactions to unprocessed experiences.

We also strongly recommend debriefing sessions with the delegation and local team members through Zoom meetings, which can contribute to the closure of the mission experience, and build and strengthen diplomatic relationships.

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