

Study on evacuation of disabled persons in times of disasters

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Key words: Earthquake, Physical disabilities, Evacuation environment

Abstract

Introduction: Among such countermeasures, rehabilitation specialists should focus on those for disabled persons. In the Great East Japan Earthquake, physically disabled persons, who are vulnerable to disasters, had trouble moving, and many of them gave up evacuation. There are various types of disabilities, including physical, psychiatric, developmental, visual, and hearing. Earthquake-related deaths were observed especially among physically disabled people because they could not evacuate to shelters, or even if they could, they became weak because of difficulty in moving to other places, going to the toilet, or receiving aid supplies at evacuation centers. Accordingly, we conducted interviews in order to clarify the issues concerning the situation of the disabled, and consider concrete measures to address such issues.

Methods: Interviews were conducted with target respondents — people who had operated evacuation centers in the area where earthquake occurred — concerning the situation at the occurrence of disasters and actions for the disabled.

Discussion: 1)Moving of people in wheelchairs, 2)Needs for helpers, 3)Barrier-free accessibility at evacuation centers or temporary housing, 4)Acceptance of the disabled at evacuation centers, As described above, the issues on evacuation of the disabled were observed through interviews. Further consideration is important following this information.

Introduction

Disasters are classified into various categories, including earthquakes, tsunamis, river flood damage, large-scale fires, and hurricanes.

In recent times, countermeasures against such disasters have been studied in various fields, and accordingly, geology, earthquake engineering, architectural engineering, disaster medical care, and the like had developed¹⁻²⁾.

Among such countermeasures, rehabilitation specialists should focus on those for disabled persons. In the Great East Japan Earthquake, physically disabled persons (hereinafter “the disabled”), who are vulnerable to disasters, had trouble moving, and many of them gave up evacuation. There are various types of disabilities, including physical, psychiatric, developmental, visual, and hearing. Earthquake-related deaths were observed especially among physically disabled people because they could

not evacuate to shelters, or even if they could, they became weak because of difficulty in moving to other places, going to the toilet, or receiving aid supplies at evacuation centers³⁾.

As rehabilitation specialists, we can promptly judge and respond to the situation of physically disabled, disaster-vulnerable people. We should, therefore, work on our tasks with a focus on providing support to the disabled in times of disasters⁴⁻⁷⁾.

Accordingly, we conducted interviews in order to clarify the issues concerning the situation of the disabled (especially physically disabled children and adults, hereinafter “the disabled”), and consider concrete measures to address such issues.

We conducted interviews mainly with people who had operated evacuation centers in the areas where the earthquake occurred, such as Miyagi and Fukushima prefectures. Having obtained some knowledge through the interviews, we report on it in the following sections.

Methods

Interviews were conducted with target respondents — people who had operated evacuation centers in the area where earthquake occurred — concerning the situation at the occurrence of disasters and actions for the disabled.(Approval number for the research: 2016-205)

Results

1) Fukushima Prefecture

We visited and conducted an interview with a respondent who was well aware of the disabled individuals' situation during evacuation due to the earthquake, nuclear power plant disaster, or tsunami.

Respondent: Mr. A engaged in dealing with the evacuation of the disabled at an evacuation center in Fukushima Prefecture.

Summary of interview results(Tab.1).

- The space of the evacuation center was too small and not enough.
- The disabled cannot judge whether to move because of difficulty in judging the situation.
- They could not move to the evacuation center as it was far from their home.
- They could not move around at home where many things were strewn around.
- Many of them felt uneasy at home and could not move to the evacuation center.
- The evacuation centers were not barrier-free; they could not go to the toilet or line up for aid meals.
- Information about welfare evacuation centers is not generally known.
- It seemed that the severely disabled were given priority at welfare evacuation centers. The mildly disabled felt desolated at evacuation centers.
- Non-disabled people seemed to have a stiff attitude toward the disabled because they were not used to treating the disabled.
- The disabled were unwelcome because of the small space of the evacuation centers.
- The disabled could not evacuate though they

recognized disasters.

- Family members supported the disabled if they had a family.
- Electric wheelchairs were too heavy to move and were hard for them to operate.
- Students of primary and secondary school were actively involved in assistance of the disabled.
- The mildly disabled had to assist other disabled individuals.
- The elderly who could move had to assist persons requiring support.
- Western toilets were not delivered because the order information did not reach the suppliers.
- Local government staff did not come to many of the evacuation centers.

2) Miyagi Prefecture

We visited and conducted interviews with an individual employed at a welfare evacuation center who knew well the situation of the disabled evacuated due to the earthquake or tsunami in Miyagi Prefecture (Fig.1, Fig.2).

Respondent: Mr. D engaged in the operation of a welfare evacuation center in Miyagi Prefecture
Summary of interview results.

- A rehabilitation facility for the disabled was used as a welfare evacuation center since it was an emergency.
- The disabled who had been residing in the facility at the time of the earthquake had no new injuries.
- The facility was opened as an evacuation center where rescuers got off from the helicopter of the Japan Self-Defense Forces.
- As it was a barrier-free facility for the disabled with a food service facility and private rooms, local residents naturally gathered there to seek for safety. A disabled person was included among the evacuated people. The private room was offered to the disabled and the family members so that the family members may provide assistance.
- The disabled people who had no place to go after being taken to a hospital and having received treatment were accepted at the welfare evacuation center.
- As the area had been hit by a tsunami 60 years ago,

local residents maintained vigilance against the tsunami. However, lifelines including electricity, gas, water, and telephone were cut. Groundwater in neighboring wells was utilized, which was also used to flush toilets.

- After the earthquake and tsunami, evacuated people moved from evacuation centers to temporary housing. Imported temporary housing facilities, however, were not barrier-free; staff and volunteers had to make them barrier-free.

Discussion

We conducted interviews with people engaged in the operation of each evacuation center and welfare evacuation center, and those who are familiar with the situation of evacuation centers in the Tohoku region who experienced the Great East Japan Earthquake.

As a result, the situation of evacuated disabled people, the circumstance of the welfare evacuation center, and the issues in daily life of the disabled at evacuation centers were revealed.

We clarified the common point for each item of each affected area with different situations and circumstances of damages (Tab.2), and studied them from a standpoint of rehabilitation science.

Table1. Summary of interview results

	The disabled individuals	Barrier-Free	Others
Fukushima Prefecture	<ul style="list-style-type: none"> •The disabled cannot judge whether to move because of difficulty in judging the situation. •They could not move to the evacuation center as it was far from their home. •They could not move around at home where many things were strewn around. •It seemed that the severely disabled were given priority at welfare evacuation centers. The mildly disabled felt desolated at evacuation centers. 	<ul style="list-style-type: none"> •The space of the evacuation center was too small and not enough. •The evacuation centers were not barrier-free; they could not go to the toilet or line up for aid meals. •Non-disabled people seemed to have a stiff attitude toward the disabled because they were not used to treating the disabled. 	<ul style="list-style-type: none"> •The disabled could not evacuate though they recognized disasters. •Family members supported the disabled if they had a family. •Electric wheelchairs were too heavy to move and were hard for them to operate. •The mildly disabled had to assist other disabled individuals.
Miyagi Prefecture	<ul style="list-style-type: none"> •The disabled who had been residing in the facility at the time of the earthquake had no new injuries. •The disabled people who had no place to go after being taken to a hospital and having received treatment were accepted at the welfare evacuation center. 	<ul style="list-style-type: none"> •After the earthquake and tsunami, evacuated people moved from evacuation centers to temporary housing. Imported temporary housing facilities, however, were not barrier-free; staff and volunteers had to make them barrier-free. 	<ul style="list-style-type: none"> •A rehabilitation facility for the disabled was used as a welfare evacuation center since it was an emergency. •The facility was opened as an evacuation center where rescuers got off from the helicopter of the Japan Self-Defense Forces.



Fig.1 Present Ishinomaki City.



Fig.2 New road in Ishinomaki City.

1) Moving of people in wheelchairs

The major common point of the results of interviews with people engaged in the operation of evacuation centers who experienced the Great East Japan Earthquake was that people in wheelchairs had difficulty in moving to evacuation centers, in moving around at the centers due to the presence of steps, and in going to toilets. There were cases in which the disabled had to remain in wheelchairs because of insufficient space for lying down. The space for the disabled at evacuation centers should be considered.

2) Needs for helpers

As for people in wheelchairs, young people who were able to operate their wheelchairs could move to evacuation centers by themselves.

At the evacuation center, however, on many occasions, assistance was required, such as moving to other places or transferring to the toilet, and hence, people aware of how to help them were needed. At the evacuation centers for the Great East Japan Earthquake, as there was no staff who could assist

people in wheelchairs, some disabled or elderly people had to remain in wheelchairs for more than 24 hours. The physical burden on people requiring assistance was huge in this situation.

Concerning human support, it is desired to develop human resources who can assist with transferring and helping to move to other places, and further to promote the utilization of physical therapists or occupational therapists of rehabilitation units who are medical specialists other than doctors, nurses, and pharmacists.

3) Barrier-free accessibility at evacuation centers or temporary housing

It was especially difficult for the disabled to go to the toilet and move to receive aid supplies. In addition, it was difficult to provide barrier-free conditions after they moved from evacuation centers to temporary housing. At evacuation centers, there are few wheelchair-accessible toilets, and it is difficult to use normal (i.e., wheelchair inaccessible) toilet properly even if welfare equipment are used. Therefore, it is

Table2. The common points

	The common points
Moving of people in wheelchairs	<ul style="list-style-type: none"> •Wheelchairs had difficulty in moving to evacuation centers. •At the centers due to the presence of steps. •The space for the disabled at evacuation centers
Needs for helpers	<ul style="list-style-type: none"> •Assistance was required. •Promote the utilization of physical therapists or occupational therapists.
Barrier-free accessibility	<ul style="list-style-type: none"> •It was difficult to provide barrier-free conditions after they moved from evacuation centers to temporary housing.
Acceptance of the disabled at evacuation centers	<ul style="list-style-type: none"> •Evacuated non-disabled people were also not relaxed and did not know how to support the disabled.

important to utilize human resources to assist with going to the toilet, or to take action regarding Japanese-style toilets. Japanese-style toilets can be used by being converted to Western-style ones through using welfare equipment.

However, as it is not generally known, it is therefore important to make the use of welfare equipment known, and to utilize the services of experts in welfare equipment, such as occupational therapists.

4) Acceptance of the disabled at evacuation centers.

One issue observed when the disabled come to evacuation centers for safety was that evacuated non-disabled people tended to avoid them because the latter do not understand the former's disabilities. Evacuated non-disabled people were also not relaxed and did not know how to support the disabled. Accordingly, many of them stayed away from the disabled. Further, harassment towards the disabled who shouted or the mentally disabled showing disturbing behavior had been observed. Considering the impact on people around the disabled at evacuation centers, it is important to increase private rooms and to provide information on disabilities to non-disabled people.

As described above, the issues on evacuation of the disabled were observed through interviews. Further consideration is important following this information.

Acknowledgment

We would like to express our gratitude and appreciation to people engaged in the operation of evacuation centers in Fukushima, Miyagi prefectures who cooperated with the interviews, as well as toward everyone involved

*JR - West Relief Foundation. (16R009)

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(Accepted: May 16, 2017)