

Leave No One behind: The Beppu Model of Capacity-Building of People with Disabilities for Times of Disasters

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ABSTRACT

Older and/or disabled people have been known to suffer more serious damages in disasters. After the Great East Japan Earthquake, Tatsuki (2014) pointed out that the root cause of the proportionately heavier damages is due to the siloed approaches taken by social service and disaster management organizations and to the lack of coordination between normalcy and disaster time responses. One solution is to involve social workers who make plans for everyday living needs during normalcy and to ask them to simultaneously prepare disaster care plans. This paper reports a Research, Development and Utilization project that interlinks normal time social services and disaster time local responses to persons with disabilities (PWD).

Introduction

Background

Older and/or disabled people have been known to suffer more serious damages in disasters. For example, in the Mabi town which severely damaged by 2018 Japan floods, 42 people out of 51 deaths were listed on the people need functional support to evacuation. This kind of problem is not new. In 2005, the Japanese Cabinet Office established a committee on “Communicating Disaster Information and Evacuation/Sheltering Assistance for the Elderly and Other Population during Heavy Meteorological and Other Disasters” to find the solution to this problem. The committee published the first edition of the “Evacuation/Sheltering Assistance Guideline for People with Special Needs in Times of Disaster” in March 2005. However, this guideline was not enough to solve the problem. Since that, the people with functional needs (PFND) mortality rates in 2011 the Great East Japan Earthquake was approximate twice the overall mortality rate. From the casualty analysis among people with disabilities (PWD) by the data from Mainichi Shimbun newspaper and Japan Broadcasting Corporation (NHK), Tatsuki (2013) found that there was the casualty gap between the total and PWD for each of the three prefecture municipalities, Iwate, Miyagi and Fukushima prefecture. The regression coefficient of the casualty gap for Miyagi Municipalities was 1.92. This means the PWD mortality rate was 1.92 times as many as that of the total mortality rate in Miyagi prefecture. By contrast, the regression coefficient for Iwate was 1.16, and Fukushima was 1.19. Tatsuki (2018) pointed to decades-long normalization practices as a cause for the casualty gap for Miyagi. In other words, the siloed approaches taken by everyday social service and crisis time disaster management organizations

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and to the lack of coordination between normal and disaster time responses were mentioned as the root cause of social vulnerability of PWD. One solution is to involve social workers who make plans for everyday living needs during normalcy and to ask them to prepare disaster care plans simultaneously.

Previous Research

The basic theory to think about social service is the social model of disability. Japan ratified the Convention on the Rights of Persons with Disabilities in 2014. Since the convention reflected the concept of the social model of disability, the social model became the primary interpretation of disabilities in the Japanese system. This theory takes responsibility for barriers to social systems, structures, designs, and values, and asks the society itself for their social and institutional solution (Oliver 1990).

“Nothing About Us Without Us” is the world banner and slogan for the Convention on the Rights of Persons with Disabilities, and also the philosophical construct of Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR). Based on that, SFDRR clearly stated the necessity for inclusive disaster reduction. In Japan, the “Disability Discrimination Act for People with Disabilities” was enacted to support this, and the prohibition against the provision of reasonable accommodation was clearly stated. PWD raised their voices, and society as a whole was required to make efforts to provide reasonable accommodation even in the time of disasters. To practice approaches to disability inclusive disaster risk reduction (DiDRR), the empowerment of PWD is necessary. The workshop and interview researches to PWD about their image of capacity for DiDRR revealed that their vision of DiDRR capacity was DRR literacy, which was essential DRR capacity for everyone. The DRR literacy has consisted of three factors such as 1) understanding of hazard and risk, 2) awareness of preparedness, and 3) confidence in the action. The most critical problem is Japanese society still exclude PWD from the opportunities to improve DRR literacy.

Purpose

This paper reports a Research, Development, and Utilization project that interlinks normal time social services and disaster time local responses to persons with disabilities (PWD). A three-year project was launched in Beppu City in 2016 that led to the standard operation procedure (SOP) for assessment, informal human resources matching, and disaster response simulation during disaster drills. At the end of the project, a quasi-experimental, propensity score matched impact evaluation demonstrated a significant increase of DRR literacy scores only among the experimental group PWDs. These results supported the utilization project in Hyogo prefecture, and this would be contributory to improve Japanese DiDRR.

Method

Target Area

Beppu city in Oita prefecture is one of the famous tourist resort for hot spring. The population is about 120,000 and about 8.8 million tourists visit every year. In the event of a massive Nankai Trough earthquake that is predicted to occur in the near future, it is assumed that a tsunami of about 5 meters will hit Beppu city. Historically there are many PWD who live as independently as possible within one's community since there were large sanatoriums for wounded soldiers. This situation enhanced the cooperative structure of PWD. The Welfare Forum, which is the association beyond types of disabilities, and this association worked hard to the enforcement of

the regulations “People with and/or without Disabilities can Live Safely and Secure.” This regulation is the key driver for Beppu city DiDRR since this regulation focused on two significant challenges, 1) the problem about parents’ death for children with disabilities, and 2) DiDRR.

From 2017 through 2018, six field studies (7th through 9th Nov. 2017, 17th Nov. 2017, 10th Dec. 2017, 15th Sep. 2018, and 25th Nov. 2018) were conducted to develop standard operational procedure (SOP) of planning a disaster care plan.

Experimental Design

Propensity score matching analysis used for outcome evaluation of quasi-experiment in this paper. This analysis evaluates the impact of specific intervention by creating two comparable sample groups (Rosenbaum and Rubin 1983). Since there were only nine PWD planed their disaster care plan and that was not enough cases to conduct evaluation analysis, the quasi-experimental outcome evaluation of participation in an inclusive disaster drill was conducted. In the used data, there were 23 PWD in experimental and 19 in control groups (table 1). In this study, participation in inclusive disaster drill was the intervention, so 'participated' group is the treatment group, and 'not-participated' group is the control group. The DRR literacy used as the evaluation scale. In this study, inverse probability weighting (IPW) used. IPW wrights by the inverse of the propensity score. This method permits more precise estimate a causal effect (Austin 2011).

Table 1. Data Summery

		Disaster Care Plan		Total
		without	with	
Drill	non-participation	22	1	23
	participation	16	8	24
Total		38	9	47

Results

Beppu Model’s SOP

There were six steps to plan a disaster care plan, 1) individual assessment (including confirmation and improvement of DRR literacy), 2) community assessment (exploring formal and informal resources), 3) disaster care plan coordination meeting, 4) planning draft of disaster care plan, 5) checking the draft of disaster care plan and agreement for sharing of personal information, and 6) verification and improvement of a disaster care plan in inclusive disaster drills. This model called Beppu model. During these field studies, the authors found and created useful tools and methods. These tools and methods were based on common theory and/or procedures, so helped the planning process more understandable to everyone and easy to developing SOP.

Results of Quasi-Experimental Outcome Evaluation of an Inclusive Disaster Drill

The results of the IPW analysis (table 2), the C statistic calculated by the model in this study was .778, which means that this model was good. About each factor, participation in the disaster drill showed statistically significant impact to improve awareness of preparedness and confidence in the action but did not showed statistically significant impact on the understanding of hazard and risk. This result was understandable because the disaster drill contained only the opportunity to check the preparedness and action.

Table 2. Results of IPW Analysis

	Coefficient	S.E.	Z-value	P value
Understanding Hazard	1.731	1.307	1.33	0.185
Preparedness	5.776	2.499	2.31	0.021
Action	7.253	1.849	3.92	0.000
Total	11.456	3.430	3.34	0.001

C=0.778

Results of Utilization Project

From this fiscal year, Hyogo prefecture started a model project, which is the utilization project of the Beppu model. 37 out of 41 local municipalities become enrolled in this project. For the training of care managers and social workers, the training program was developed and conducted. Also, the e-learning courses are under construction right now. Hyogo prefecture planned to pay additional incentives to care managers and social workers who coordinate disaster care plans.

Conclusion

The Beppu model was successfully standardized and utilized in Hyogo prefecture, but there were not enough cases to statistically evaluate the impact of individual planning. Authors will continue to correct the data by utilization project to find the evidence to enforce the Beppu model.

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