



REPORT OF EARTHQUAKE DISASTER PREVENTION CHILDCARE IN NURSERY SCHOOL AND KINDERGARTEN

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Abstract

The disaster prevention education to protect human being society from various disaster by natural phenomena is important, and there are many examples than before in Japan. After the great earthquake disaster of 2011, that education of huge earthquake and tsunami quality and the quantity are seen to increase more and more in elementary and junior high schools recently. However, in kindergarten and nursery school which children of younger than six years gather, there are only a few examples of it, only an evacuation drill, and there is not much progress of it even now. Therefore we carried out the disaster prevention education separately from usually evacuation drills (because safety education is included in the everyday breeding, we call it disaster prevention childcare) in a kindergarten and the nursery school a lot, in Osaka and Wakayama area western part of Japan. The contents of our childcare were performed a picture story show, a song, a dance and a simulated experience corner about the disaster prevention. It is made along the educational policy of childcare of kindergarten and nursery school, and the growth process of mental, psychological and physical of infants. Particularly, even a young child aims for being able to protect the body by myself in the case of strong ground motion of an earthquake at once. By a series of childcare, all of the babies and children from 1 to 5 years old with their childminder or parent could carry out the simulated experience corner. The parents, childminder and teachers were able to experience or perform the childcare with children together. As for such activity, some children sometimes burst into tears and may not wrestle. In this paper, I will report one of the practice example of our childcare. In addition, I will report the result of the questionnaire survey to the parents and childminders. The evaluation of the disaster prevention childcare that could be experienced in parent and child from a questionnaire result was high, the need of the disaster prevention education from young age was shown. In addition, there were many requests to carrying it out repeatedly. And the understanding of the need and importance was provided, too. Through the accumulation of such practice examples in a kindergarten and nursery school by questionnaires and the opinions such as parents, it is thought that we can improve more effective disaster prevention childcare. In addition, we want to perform a summary, the improvement about the problems from these in future.

Keywords: earthquake disaster prevention, childcare, nursery school and kindergarten



1. Introduction & Background

Education to safety and relief in nursery school and kindergarten is important more than before, and we need to improve it quickly. In particular, it comes to be said the improvement of earthquake disaster prevention education after the Great East Japan Earthquake of 2011. This earthquake caused heavy damages by the tsunami, however strong ground motion is high in frequency and possibility attacked than a tsunami, and it is necessary to plan improvement of the consciousness to setting and the preparation at an opportunity to acquire "right knowledge" and "a method to protect the body" during a short time before the strong ground motion. In many cases, for vulnerable to disaster such as infants, as for the postponement time, it is extremely short, and there is virtually no psychological room.

There are a many variety of things of the disaster prevention education in the school and they are evolving. The approach in a nursery school or the kindergarten includes reports such as Abe and Meguro (2005), Takahashi (2008) and there is not more it than the example of the school. For example, the situation such as a state or the nursery school of the infants at the time of the former earthquake disaster can be known in Early Childhood Education Association of Japan (2011).

In this paper, it is reported with the practice activities of the many disaster prevention childcares and questionnaires after the activities at various kindergarten the author tried it for several years. Particularly, natural and social environments influence the consciousness of adult for the disaster, and it is reflected to a disaster prevention activity. Therefore, to grasp to the situations in the each kindergarten is an aim of this study. Based on a practice result of the disaster prevention childcare in such a kindergarten, I think that the beginning for new development through the discussion about the new directionality to the disaster prevention childcare for the infants who included a nursery school is enhanced in future.

2. Outline of the disaster prevention childcare

On the disaster prevention childcare, I considered not to treat it as the special event. In addition, it was taken that children came to be able to act based on experience by oneself into consideration. As correspondence of "if we were hit by strong ground motion," defense of the body such as dangerous inference, cognitive and evasion, defense. In consideration of the age of children, I made much of the relation with the everyday activity and a relationship in children to take in a lot of element of the play and sensing it bodily, various disasters prevention tools which an adult could experience together were produced, and I inflected (Yamada: 2013, Yamada and Choji: 2019). For the production, the concept in both views of a child and the childminders (or teachers) was set, and the method and the teaching materials were built. Not only "health" and "the environment" of the domain of childcare contents in the infants period through the body activity 'to dance', 'to sing the song', 'to hear a story' and 'to see the drama (with paper theater)' in these and to do simulated experience, but also "expression" "words" included a domain in an extensive mark to contents concerned with "human relations" more and did it with the contents which considered the undifferentiated development characteristic of the infant. In addition, it was kept in mind by practicing it with a university student to do it for an activity loaded with a meaning of consciousness, the skill improvement to a future childminder and elementary school teacher as the candidates soaked in consciousness and the incumbent childminder. Particularly, as consciousness-raising to spot childminders, I thought about planting the consciousness that there was if it was done that could be carried out by ourselves continuously with an important point. It is thought that the remedial education to adult including such a childminder can take part in recognizing the role of adult picking a bud of the various disasters occurrence in the kindergarten inside and outside.

In disaster prevention childcare, an example of the scenery in kindergarten of the equivalent to "understanding of experiencing" is shown in Fig. 1. We set the attraction of the course for children for some dangerous scene by earthquake ground motion as "unstable wall", "shaking table", "dangerous road", "tunnel of darkness" and "smoke tunnel" in Fig. 1. The source of power for the handmade shaking table is man



power. Fig. 2 compares with the waveform of the real ground motion and the one of the pseudo motion on this shaking table. Fig. 1 shows a scene that children work on in them. In addition, it shows the state of children seeing the paper drama that a university student plays, and Fig. 3 indicates that children saw it eagerly. This means that paper drama play a very big role as an impression to children. The 5 years old child class was performed the looked back of the by teachers. These looked back that it took the talking opportunity about the activities in kindergarten at the home. All children were able to perform the series of various activities while parents watched it.

After the disaster prevention childcare, the lecture to the parents and childminders (teachers) was incorporated optionally. The form that a parent participates in, as for the request, it is difficult for parents who work although there is it to participate. It is the present conditions to be able to carry out these practice only in a kindergarten, and this point is a future problem.



Fig. 1. Example photo of a scenery in kindergarten of disaster prevention childcare with teaching materials.

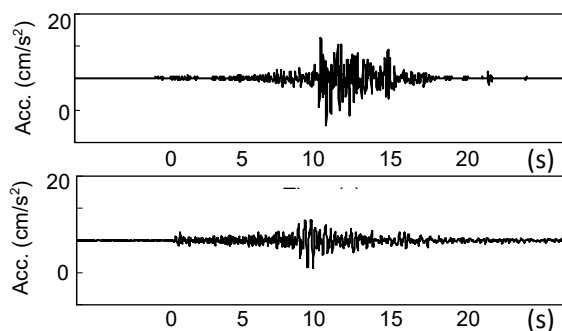


Fig. 2. Upper waveform shows the motion record on our shaking table, bottom waveform shows an example of real ground motion.



Fig. 3. Example photo of paper theater.



3. Questionnaire surveys after the disaster prevention childcare practice

The questionnaire survey to the parents and the childminders was carried out to grasp an effect of a state and the childcare of the growth of children by the practice of the disaster prevention childcare. The contents of the questionnaire are shown in Fig. 4. The questionnaire in unsigned form asked an effect of the disaster prevention childcare and children about the disaster prevention awareness at the kindergarten and their home. For an answer, a question to write down as the alternative questions of "yes" or "no" and the essay questions were set. A lot of parents who were cooperative with an investigation had list the lot and were able to get the information that was valuable as their frank opinions.

3.1 Questionnaire to parents

Among the totaled results of the questionnaire to the parents, the thing which expressed a result of alternative question from Q2 to Q5 are shown to Fig. 5. In addition, the n is the number of answer, and each n are not same because there was blanks for the questions. Q2 asked disaster prevention awareness in the conventional family, but I have some kind of talks about the disaster prevention at 76% of homes, and it is that high consciousness was reflected. Q3 asked the state at the home after disaster prevention childcare, there was an opportunity to speak about the event of the kindergarten at 78% of families. The answers said, "My child taught his father the pose to protect his body and the learned things, and the contents tried to do it in families.", "My child said 'I enjoyed the shaking table and through into the tunnel'". It is thought that I made a thinking opportunity within each families to the disaster prevention. On the other hand, the parent said "As I was not able to participate, my child taught me how to escape". From these, it is indicated that the things which learned in the kindergarten impressed to children and they talked with their parents at home.

By the question to ask the need of the practice of the disaster prevention childcare of Q4, approximately 80% makes an affirmative reply and knows that there is understanding about the importance of the disaster prevention childcare. But there was the opinion that the present conditions were enough for among them. I guess that this is more likely to point at the enforcement of the conventional normal evacuation drill. In addition, there was the description "fears might be superior to", and some said that negative influence of the disaster prevention childcare was uneasiness. It is guessed that this is an outcome of the vague uneasiness to the disaster of adult and is an uncommon opinion in the others. As for these, it is thought that natural and social environment affects psychologically that the occurrence of large-scale disaster caused by the earthquake is worried about this area in the near future.

Q5 is a question to ask the need of a family cooperating with a kindergarten in a disaster prevention instructional activity. It is the recognition that 95% of parents need, and this point indicates that there is extremely high understanding. By the way, about Q2 - Q4, a ratio of No is approximately at the same level as Yes. According to the answer, the respondent who answered No in Q2 tended to answer with No in Q3 and Q4. This result is thought that the opinions influenced that low disaster prevention awareness.

In any additional comments about the disaster prevention childcare of Q6, they said "I thought that it was an opportunity to have various experiences, and to remain in the memory of the child." "I thought that it was good to be able to experience that the body is protected." The high evaluation to an "experience" activity to incorporate in disaster prevention childcare is indicated. And "I thought that it was a good opportunity to talk with in a family for a long time", "I was able to have the same recognition by having been able to act in parent and child together, it was good at all.", it is guessed that it was the result for realizing of the importance of participating with family from these answers.

In the completely any additional comments of Q7, there were many mentions about the lecture to a parent, it was shown some other time that the education to an adult was necessary. They said, "If I were rolled up in a disaster, it is difficult for me to be calm. It is difficult for both an adult and a child. In this way, to get rid of a sense of fear is very good to learn with a fun. There was the comment that the scare to the disaster of an earthquake and the tsunami was had a glimpse of. Furthermore, "I thought that it is performed in conjunction with other fire drills sequentially." "I thought that I want such this activity again." There is these request comments and is the result that this disaster prevention childcare was accepted to the parents.



<p>Questionnaire to parents about the earthquake disaster prevention childcare</p> <p>Q1: show me age and the class of the child.</p> <p>Q2: Has it been talked about a thing in the case of an earthquake or the storm and flood damage in families so far?</p> <p>Q3: After having gone home, about earthquake disaster prevention childcare performed at a kindergarten, did you talk with your child?</p> <p>What kind did you talk with your kid? Please show me contents.</p> <p>Q4: Do you think that the disaster prevention childcare at the kindergarten should be done more?</p> <p>Q5: When disaster prevention childcare is performed, do you think that it is necessary an opportunity to cooperate with a family at a kindergarten?</p> <p>Q6: If you have some opinions about this earthquake disaster prevention childcare, please fill it out.</p> <p>Q7: Please fill in an impression and an aware point if you have.</p> <p>(as for ※ 2, 3, 4, 5 a question of Yes or No)</p>	<p>Questionnaire to teachers/childminders about the earthquake disaster prevention childcare</p> <p>Q1: show me age and the class of the child.</p> <p>Q2: Tell an impression about earthquake disaster prevention childcare carried out.</p> <p>Q3: Is there the thing left in the impression? In some cases, two are chosen among the following, and please teach the reason.</p> <p>Q4: Is the experience-like disaster prevention childcare thought to be necessary for children?</p> <p>Q5: May it be thought that it should do it this way to think that it was enough to have gone the earthquake disaster prevention classroom (childcare) in this parent and child?</p> <p>(as for ※ 2, 3, 4, 5 a question of Yes or No)</p>
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Fig. 4. Contents of questionnaire about the earthquake disaster prevention childcare.

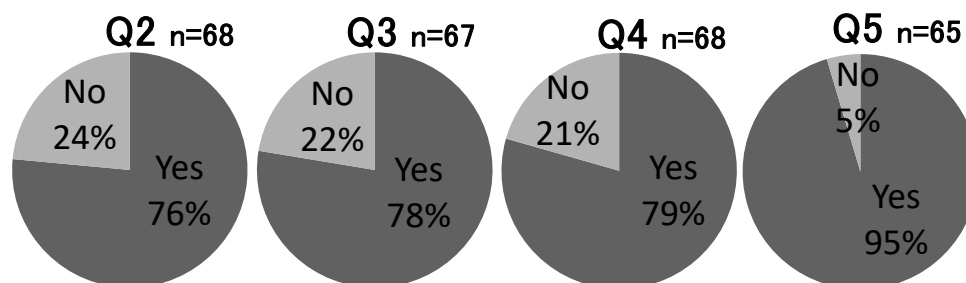


Fig. 5. Result of the questionnaires in a certain kindergarten.

3.2 Questionnaire to childminders

From the questionnaire result for childminders in Q2, there was the answer "It was good there was not only stories but also experienced chances for learning to protect of body by themselves in this childcare." It is thought that the intention of the author who aimed at the education based on the experience was handed down to a childminder. And also "We found that we can follow these idea for a disaster prevention drill in our kindergarten to use our things." From this comment, it is indicated that an approach of the voluntary disaster prevention in the kindergarten was promoted. Six of eight people answered "Shaking Table" to ask which tool was remained most impression in the Q3. It is the result that the importance of feeling it with a body was able to realize. These comments correspond to the one of Q2. Three of eight people nominate a puppet play for the thing which an impression remained. If a bit of contrivance is given to a drama got friendly with in a kindergarten, it is thought that a point to become the disaster prevention childcare utilized



the daily life might be recognized. About the need of the disaster prevention childcare of Q4, it was the opinion that 100% were positive. In Q5, there were many things to write down the importance of participating in parent and child. And the necessity of the opportunity to bring into contact between a kindergarten and homes seemed to be realized. In Q6, there was the comment "that it was good for both a child and the parent to have instructed it toward the third party this time". This point will be an implication in the-mediated value of the expert of disaster prevention and the preschool education that are not direct concerned person with a kindergarten and children. In addition, most of the children felt a fun after the disaster prevention childcare in their impressions. If we considered a development process of the verbalization ability of children, it is the best answer, and it may be said that contents and a method of the disaster prevention childcare were appropriate to continue disaster prevention childcare in future. At the previous evacuation drill, there were frightened and crying children that an action, however our childcare was rather appropriate. It is a reaction to be connected next

As a result, by such a questionnaire, the too negative comment is hard to be given. About the objective evaluation of the validity of the contents of the disaster prevention childcare and questionnaire contents, further examination is needed in future. Satisfaction for the disaster prevention education could be given the three persons of children, a childminder, the parent, and the disaster prevention childcare carried out from questionnaire results this time was able to be judged to have been able to bring a positive effect.

4. Conclusion

In this paper, the practice of the disaster prevention childcare in a certain kindergarten and the subsequent questionnaire findings were reported. From these results, contents and a method of this disaster prevention childcare were appropriate, and it was indicated to have become children, parents and childminders (teachers) each at a useful opportunity. In addition, from questionnaire results, this childcare indicated there were what we can do something to prepare for earthquake disasters. For improvement of disaster prevention childcare to infants, in consideration of the actual situation of the kindergarten, it was shown that the power of the expert about disaster prevention and infant education to a childminder, the staff and a parent was necessary. Not only these approaches become the help of the breeding of children, but also disaster prevention childcare, a flow of training and the education of the parent are made. Furthermore, the participation of the parent is promoted if the consideration to child care support is included, the atmospheres between kindergarten and parents cooperation are to form, it may be said a disaster prevention drill continue, and that it is effective for what is expanded.

On promoting the disaster prevention childcare study in the area having possibility of earthquake disaster in future, in consideration of the uneasiness of the protector, approach practice to protect children is accumulated, a more useful contents method wants to be explored for children.

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6. References

- [1] Abe, M. and K. Meguro (2005): A study for improving total disaster reduction ability of nursery and kindergarten - Proposal of new stile workshop for disaster reduction, *Seisan kenkyu, Monthly journal of the Institute of Industrial Science*, University of Tokyo, Vol. 57, No. 6, 538-542 (in Japanese).



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- [2] Takahashi, T. (2008): Spread of emergency education for earthquakes for young children cooperating with the community, *Japan Society of Research on Early Childhood and Education*, Vol. 44, No. 2, 163- 173 (in Japanese).
- [3] Early Childhood Education Association of Japan (2011): Early Childhood Education Association of Japan 64th meeting emergency symposium report, *Japan Society of Research on Early Childhood and Education*, 1-239 (in Japanese).
- [4] Yamada, N. (2013): Practical study of the earthquake disaster prevention childcare for infants with the simulated experience, *10th International Conference on Urban Earthquake Engineering*, 1991-1994.
- [5] Yamada, N. and K. Choji (2019): Report of disaster mitigation childcare in kindergarten, *Japan Geoscience Union Meeting 2019*, G1-P05 (in Japanese)