

Outdoor environment for children below 3 years in Japanese early childhood care centers: Focusing on practices and views related to risky experiences

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Abstract

This study attempted to explore outdoor environments in early childhood education and care centers and the views of practitioners regarding support provided to children below 3 years of age with respect to experiencing risky situations. A survey of 1,167 centers with their own outdoor environments in Japan was conducted. Questions about outdoor environments and practitioners' thoughts and practices revealed two points. First, the centers lack environments where the children are provided opportunities such as outdoor spaces; areas of different elevations, such as hills and slopes; and places where they can enjoy using their sense of touch to feel different materials such as water and plants. Second, practitioners valued a variety of experiences, such as minor risks, injuries, mistakes, and fear, for nurturing children's ability to avoid danger and to protect themselves from potential dangers, although they did not value and generally avoided negative emotions, sensations, and experiences. Further research can explore the relationship between such views about risk experiences and actual practices, a topic of discussion among early childhood care and education practitioners.

Keywords: children below 3 years, outdoor environment, risky experiences, Japanese practitioners

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Introduction

In early childhood care and education (ECEC), along with physical activity and outdoor environments, the importance of engaging in risky play during early childhood has been noted (Sando et al., 2021). However, risk experiences of children under the age of 3 years have not been studied adequately. This study aims to identify future trends and perspectives by focusing on the actual environment of children under 3 years in daycare centers in Japan; it also explores practitioners' practices and views with respect to apprising children regarding potential risks and dangers.

Physical activities and outdoor environments for children below 3 years

Currently, ensuring opportunities and environments for physical activity in early childhood is a global challenge, as obesity and reduced motor function have been observed worldwide in the early years; the COVID-19 pandemic has further increased sedentary time and screen time (Jáuregui et al., 2021; Vega-Perona et al., 2022). To the best of our knowledge, although many studies have explored early childhood children's physical activities and childcare practices (Fees et al., 2009; Toussaint et al., 2020), children younger than 3 years have not been adequately explored.

The under 3 years age group is a period of significant sensory and motor development. As Archer and Siraj (2015) say, "Infants need as much time as necessary to learn new movements, such as using large muscles for kicking, rolling, pushing up to crawling, pulling to a standing position and, eventually, walking" and "sedentary behaviors must be limited to aid infants' health and development" (pp. 31-32). As described later, the time spent outdoors is important in physical activities. Furthermore, as motor functions develop, the range of movement expands; therefore, safety needs to be considered because children lack understanding of experiences pertaining to risk and safety concerns (Lindon, 1999). Therefore, the outdoor environment used by the "under 3 years" age group requires various considerations and assistance; the aims and practices of childcare for this group and older children are likely to differ.

As of 2019, on an average, 36% of 0- to 2-year-old children in Organisation for Economic

Co-operation and Development (OECD) countries attend child care facilities, ranging from less than 1% to more than 60%, depending on the country (Organisation for Economic Co-operation and Development, 2021). They are admitted to various types of centers according to the country's care and education system. Thus, outdoor environments and physical activities also vary.

The crisis over the decline in physical activity has led researchers to examine the relationship between outdoor environments and children's experiences in childcare centers. Gubbels et al. (2018) assessed children's sedentary behaviors and physical activities using accelerometers and revealed various interactions between them and their childcare environment; for example, natural elements were negatively associated with the sedentary time of 3-year-olds, but not of 1- and 2-year-olds, and portable indoor play equipment was negatively associated with sedentary time in overactive children, but not in non-overactive children. They concluded that specific physical elements are especially beneficial for vulnerable children. According to Martin et al. (2022), time spent outdoor and indoor was associated with increased physical activities. Thus, the type of environment and the time spent outdoors is important in considering early childhood children's physical activities, although such effects vary according to age and characteristics.

Research till date has focused on environmental settings but has not adequately examined the interactions between children and practitioners (i.e., how practitioners assist children). With regard to physical activity, considering the relationship between practitioner and child, Archer and Siraj (2017) developed a rating scale called MOVERS that aimed to suggest how children can be supported; this scale focuses on not only their physical environment but also the words spoken and their interactions during physical activities, required for their development. However, the scale has been designed for children aged 2 years and older. In ITERS-3 (Harms et al., 2017), created for rating the environments of 0- to 2-year-old children, physical environment or outdoor environment is included as a necessary component for care and education, and opportunities provided for going out and their frequency are also a dimension for rating the environment. However, since ITERS-3 needs to cover various scenes in care and education for children under 3 years, who are in the process of building relationships with practitioners and are trained in managing routine activities such as taking meals and sleeping, the scale does not focus on their physical activities. Toddlers (about 2

years of age) have been discussed in existing studies, but not adequately. Studies focusing on the physical activities of children below 3 years are needed.

Risky experiences, sensations, and emotions

Physical activities in outdoor environments are important for children's physical as well as psychological development. Recently, more research has been conducted on risky play. Risky play is defined as "thrilling and challenging forms of play where there is risk of physical injury" (Obee et al., 2021, p. 100). Sandseter and Kennair (2011) reported that thrilling play experiences motivate children to challenge themselves continuously. The necessity of risky experiences for children has long been recognized (Smith, 1998), but the debate has been heightened by the categories created by Sandseter (2007), based on interviews with children and practitioners. It has been revealed that engagement in risky play was positively associated with children's well-being, involvement, and physical activity (Sando et al., 2021). Kleppe et al. (2017) added a new risk category after considering risky situations, as well as the applicability of the same categories to children under 3. It was named "impact" and defined as "type of play (that) had the common individual characteristics of crashing, either themselves or an object, into something" (p. 12). Particularly, physical activities of children under 3 years are characterized by novel experiences, which can easily lead to anxiety and fear, while being simultaneously unpredictable, potentially leading to serious injuries. Regarding risky play, Tangen et al. (2022) focused on children aged 17–25 months and revealed that children explore risks and use strategies to assess and manage risks. They also show that ECE staff need to give children opportunity to explore challenges and risks in varied natural environments based on their observations of children and staff's support. However, as noted, there is insufficient research on this age group. Therefore, the present study aims to determine how children under 3 years experience risk and danger in ECEC settings from the practitioners' perspective.

As reported, a child's emotional life is highly differentiated by 3 years (Lewis, 2016); a child under 3 years experiences significant emotional and sensory development. According to Piaget's theory, infants are at the stage of sensory-motor intelligence where they move to a coherent organization of sensory-motor actions vis-à-vis their immediate environment

(Flavell, 1963, p. 152). Children in this stage acquire information about objects' haptic and visual properties by looking, handling, mouthing, and fingering (Ruff, 1984). When a child experiences conditions that arouse fear, "attachment figures" or "support figures," who are willing to respond appropriately and are accessible, are important (Bowlby, 1973, pp. 23, 201). Therefore, attachment between practitioners and children in ECEC has also been considered important and studied (Raikes, 1993). In this stage, children experience negative emotions and sensations such as discomfort and anxiety, including when handling risky situations. Negative emotions and sensations are experienced along with pleasant emotions and sensations, which help children understand various types of emotions and sensations. Such risky situations can often be avoided from the viewpoint of safety management, as is shown by practitioners who do not have enough experience with children (Noda & Yamada, 2018). We need to explore how practitioners value and support children's negative experiences.

ECEC for Japanese children below 3 years

The Japanese ECEC system has mainly three types of centers for preschool children below 6 years: kindergarten, which provides education for a short time regardless of parents' situation; daycare center, which provides care and education for children who are "in need of care" because of their family situation (i.e., when their parents cannot care for them due to work, illness, childbirth, etc.); and integrated center, which serves both as daycare and kindergarten. Children below 3 years are eligible for institutional care only when they are "in need of care" because of their family situation and attend a daycare center or an integrated center. Daycare centers include those that enroll children over 3 years and those that only care for children up to 3 years of age. Children stay at centers for about 8 to 11 hours per day, according to their parents' situations. Today, about half of the population of Japanese 2-year-olds, or about 500,000 2-year-olds, attend some type of daycare center (Japanese Ministry of Health, Labour and Welfare, 2021). While standards for establishing ECEC centers vary by type, guidelines on care and education are common in all three types of facilities for children below 6 years. The guiding principles for care and education are "education through environment" and "growth through child-initiated play." Childcare practices for children

below 1 year aim at attaining the following goals: “children grow up healthy with easy mind,” “children share feelings and have close relationships with people,” and “children engage with familiar objects and develop sensitivity,” and there are five contents of education for children above 1 years: “health,” “relationship,” “environment,” “communication,” and “expression” (Japanese Ministry of Health, Labour and Welfare, 2017). However, these guidelines neither refer to the activities in which children engage nor the physical environment to be provided, and the practices followed vary among centers, according to the surrounding environment, the situation of children, and practitioner views.

Similar to other countries, lack of physical activity among children is a problem in Japan too. In 2012, the Japanese Ministry of Education, Culture, Sports, Science and Technology formulated the “Guidelines for Physical Activity in Early Childhood” to provide directions for physical activity in early childhood, aiming to help children engage in a variety of movements, develop physical strength and the necessary early childhood motor skills, and foster motivation for various activities, social skills, and creativity. These propose exercises for children above 3 years but do not specify exercises necessary for children below 3 years. Not much attention has been paid to the knowledge and experience of care and education for the physical activities of children under 3 years. Miyamoto et al. (2022) revealed that Japanese practitioners are conscious of the diverse growth patterns in children under 3 years and their physical movements, including 36 basic movements (Nakamura, 2011) and 7 coordination skills (Blume, 1978; Kano, 2016). However, how practitioners provide opportunities for children below 3 years to practice such movements and activities in their daily lives in ECECs, which include dangerous environments and risky situations, remains unclear. Ishida et al. (2020) reported that Japanese ECEC practitioners acquaint children below 3 years with small dangers and help them learn how to keep themselves safe by providing them the experience of dealing with various types of physical environments such as rough ground, slopes, and hills.

Safety management is actively discussed in ECEC centers, under adult management, to prevent serious accidents (Inokuma et al., 2019; Nishida & Yamanaka, 2019). Simultaneously, each guideline for the three types of ECEC centers emphasize the creation of a healthy and safe life by the children themselves (e.g., Japanese Ministry of Health, Labour and Welfare, 2017). Practitioners need to be cautious not to exercise overprotection

or become over-involved, so as to prevent hindering the development of the child's ability to avoid danger and the likelihood of getting injured (Japanese Ministry of Health, Labour and Welfare, 2018). Practitioners may deal differently with risky situations depending on their experience (Noda & Yamada, 2018). Parents and practitioners may also deal with such situations differently (Tamura & Suzuki, 2020). Such practices or rules for safety vary among ECEC centers and reflect the values of each center (Tsujitani et al., 2018). Therefore, it is important for practitioners to engage in discussions to share their views and practices pertaining to the risky experiences of children below 3 years in childcare centers.

Study aim

Promoting physical activities and play in outdoor environments and reducing sedentary time for children are important, but the number of studies focusing on children below 3 years is not adequate compared to those on children above 3 years. In studies on children's experiences of risk, notably, risky play is actively studied by early childhood researchers, including for children below 3 years (Kleppe et al., 2017). However, outdoor environments, particularly for children below 3 years, have not been adequately studied in relation to risky experiences. In Japan, there are no detailed guidelines for outdoor environments and risky play focusing on children below 3 years, despite the growing need for care in this regard for this age group. Beliefs about the risky experiences of children vary among centers. Safety management in childcare centers, while fostering children's abilities to protect their health and safety by themselves, also requires attention, so this topic should be further discussed among practitioners and centers. In such situations, it is important to investigate how practitioners support children below 3 years in experiencing risky situations in outdoor environments and to reveal the relationship between such practices and views on risky experiences.

The study aimed to answer the following research questions:

(RQ1) What kind of outdoor environments, especially ones including risks, are provided to children below 3 years by Japanese ECEC centers? (RQ2) How do practitioners deal with and value the risky experiences of children below 3 years in outdoor environments? To answer these questions, we conducted a survey of centers providing childcare to children

below 3 years and aimed to reveal the actual conditions of outdoor environments and the practices and views of practitioners with regard to experiencing risky situations.

Method

Survey outline

We conducted a questionnaire survey. For RQ1, we asked about the elements provided in outdoor environments for children under 3 years in each center. For RQ2, we sought information about the emotions and sensations that the practitioners wanted the children to experience in their daily lives (2-A), how to deal with risky situations (2-B), and the practices adopted to support risky experiences (2-C). We thus explored the variations in practitioners' thoughts and practices. The questionnaire was distributed to a total of 3,500 daycare centers and daycare-type integrated centers in Japan, out of which 1,234 (35.3%) centers responded. We did not separate the two types in our analysis, because both these centers accept children below 3 years. One copy was sent to each center and both single and multiple respondents were allowed. Of these, 1,167 centers had their own outdoor environment. The average number of children per center was 93.0 (Max. = 405, Min. = 4, SD = 50.5), and that of children below 3 was 37.8 (Max. = 157, Min. = 1, SD = 21.0). The details of the participants' positions were as follows: 461 (39.5%) principals, 26 (2.2%) class teachers of children below the age of 12 months, 53 (4.5%) class teachers of 1-year-old children, 1 (0.1%) class teachers of 2-year-old children, 61 (5.2%) chief teachers of children below 3 years, 56 (4.8%) semi-principals, 13 (1.1%) teachers without particular classes with children under the age of 3, 7 (0.6%) teachers for children over 3 years, 3 (0.3%) directors, and 143 (12.3%) participants with other positions. The notation of children's age indicates the age at the beginning of the year. Other 245 (21.0%) questionnaires were answered by multiple people or a person with multiple positions (e.g., homeroom teacher and chief teacher) in each center, and 98 (8.4%) questionnaires were without answers about participants' positions. Based on their responses, we focused on the following four items that aligned with the study's purpose. The items about environment (*1 Physical Environment*) were generated from indicators pertaining to variety

in the ECEC playground environment (Akita et al., 2019) developed based on preschool kindergarten facility guidelines (Japanese Ministry of Education, Culture, Sports, Science and Technology, 2018). The items about emotion and sensation (*2-A Practitioners' Value on Children's Emotion and Sensation*) were generated based on the characteristics of this age group, including sensory development, and by focusing on safety considerations for children below 3 years. We also referred to the states that practitioners regard important for children below 3 years in outdoor environments, based on a prior study that interviewed practitioners (Miyata et al., 2018), and discussed how to come up with words that are suitable for expression of children's real emotional or sensory states. Items pertaining to practice (*2-B Responses of Practitioners in Risky Situations*) were generated on the basis of prior research regarding rules to be followed in outdoor environments (Akita et al., 2019), referring to the Japanese ECEC guidelines (Japanese Ministry of Education, Culture, Sports, Science, and Technology, 2018; Japanese Ministry of Health, Labour and Welfare, 2017), and were then transformed to accommodate daily experiences of children below 3 years. A question of free-text entry type (*2-C Nurturing child's ability to avoid dangers*) was added to gather ideas in each center, focusing on practices pertaining to children's risky experiences.

Questions

Item 1. Physical Environment

The respondents were asked about the availability of physical environment comprising sand playground, fixed playground equipment, etc., as an "environment designed for use by/for children below 3 years."

Item 2-A. Practitioners' Value on Children's Emotion and Sensation

The respondents were asked to choose emotions and sensations that they wanted children under 3 to experience in the outdoor environment and to circle the item twice for "very applicable" and once for "applicable." They were asked not to write anything for "not applicable." In the analysis, double circles were replaced by the number "2" and single circles were replaced by "1." The items consisted of 30 phrases, including "I feel carefree," "I feel excited," "One more time!" and "I feel relaxed," among others.

Item 2-B. Responses of Practitioners Pertaining to Risky Situations

The respondents were asked to select the most common type of practitioners' assistance from five items ("wait and see" "assist, do together, etc." "restrain," "exclude in advance," "other") in the eight specific situations involving risks enumerated below:

1. When a 1- or 2-year-old tries to climb down from a high place.
2. When a 1- or 2-year-old tries to touch an insect which is not dangerous.
3. When a 1- or 2-year-old tries to climb to a high place.
4. When a 1- or 2-year-old tries to go somewhere and is out of sight of the practitioner's field of vision.
5. When a 1- or 2-year-old tries to walk up to children who are aged 3 and are running and playing.
6. When a 1- or 2-year-old child tries to pluck flowers/plants.
7. When a 1- or 2-year-old child tries to eat a plant or fruit, which is not poisonous.
8. When a 1- or 2-year-old child tries to eat something that has fallen on the ground.

Item 2-C. Nurturing child's ability to avoid dangers

The respondents were asked to answer the following question: "What efforts are you making to nurture the ability of children under 3 years to avoid danger and ensure their safety?"

Analysis

First, we analyzed the general aspects of the environment (Item 1) and practitioners' practices and beliefs (Item 2-A, B, C) regarding children under 3. SPSS version 28.0.1.0 was used for statistical analysis. A total of 1,167 valid responses were obtained for items 1, 2A, and 2B. Second, from the free answers obtained on item 2-C ($n = 778$), after excluding the unanswered samples, we listed the frequently used words utilizing KH-coder 3 (Higuchi, 2020).

Results

Physical environment (Item 1)

As Figure 1 shows, more than 80% of the ECEC centers had environments comprising “places to play with water (96.1%),” “play materials and tools (95.5%),” “fixed and movable play equipment (91.5%),” “flower beds or planters (90.3%),” “sandpits (81.7%),” and “places to grow foods (81.4%)” for 3-year-olds. Less than 50% of the centers had “artificial hill, slope, or undulating ground(43.7%),” “muddy playground (36.5%),” “lawn (33.6%),” and “breeding animals (18.2%),” while 50% to 70% had “resting or static activity area (68.2%),” “weeds (63.2%),” “semi-outdoor space (59.0%),” “medium height trees (55.2%),” and “trees accessible to children under 3 years (52.6%).”

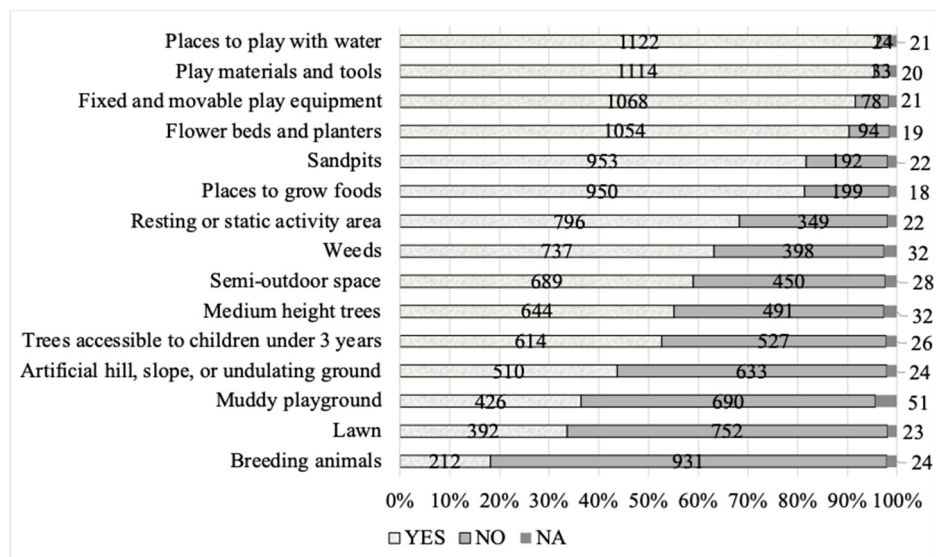


Figure 1. Components of physical environment in childcare centers for children below 3 years (Item 1) (n = 1167)

Practitioners' value of children's emotions, sensations, and risky experiences (Items 2A and 2B)

Table 1 shows the mean scores on each item pertaining to emotions and sensations. The average of ratings was particularly low for negative emotions and sensations ("It is hot" to "It is narrow"). Figure 2 shows responses on items pertaining to risky situations. Many practitioners helped children or were present when they descended from a high place; a high percentage of practitioners prohibited children from putting plants or things lying on the ground on their mouths, if they tried to eat them. However, this was not the case with all the practitioners.

Table 1. *Descriptive Statistics for Emotions and Sensations that Respondents want Children to Experience (Item 2-A) (Range: 0–2)*

	Words	Mean	SD		Words	Mean	SD
Positive Emotion	I feel carefree	1.63	0.60	Negative Emotion	I don't want to	0.31	0.55
	I feel excited	1.57	0.63		I feel disappointed	0.23	0.47
	Yay!	1.42	0.69		I am sad	0.21	0.46
	I could!	1.42	0.68		I shudder/I am afraid	0.15	0.39
	I feel happy	1.39	0.69		I am timid	0.12	0.35
	I'll do it one more time!	1.36	0.72		It is cold	0.63	0.62
	I love it	1.27	0.74		It is hot	0.55	0.60
	I feel relieved	0.98	0.78		It is unclear/dirty	0.41	0.57
Positive Sensation	I feel relaxed	1.32	0.73	Negative Sensation	I feel pain	0.37	0.56
	I feel pleasant/refreshed	1.32	0.72		It smells unpleasant	0.27	0.48
	It is warm	1.11	0.63		It is dark/dull	0.27	0.48
	It is beautiful	1.01	0.72		It is narrow	0.14	0.38
	It smells good	0.87	0.70	Other	I feel mystery	1.13	0.73
	It is bright/dazzling	0.81	0.65		I am surprised	0.81	0.71
	It is cool	0.58	0.60		Other emotions or sensations	0.05	0.28

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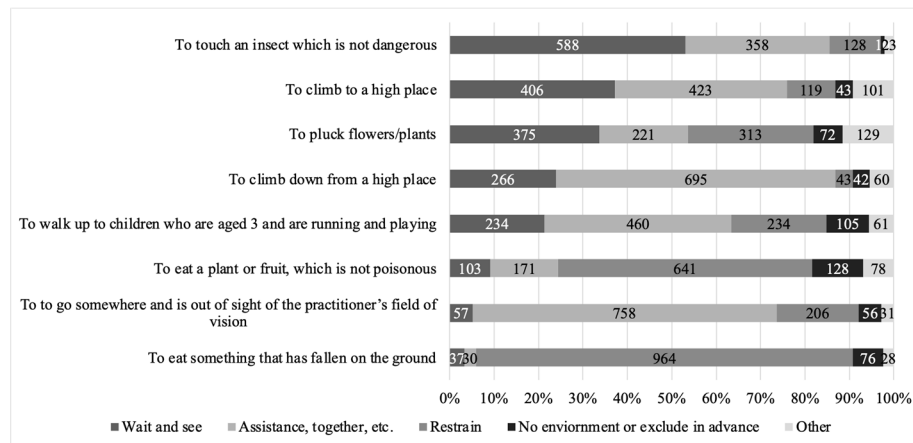


Figure 2. Number and percentage of centers for each item in terms of risky situations (Item 2-B)

We divided the practitioners into four groups based on their responses on each question, that are “wait and see,” “assistance, together, etc.,” “restrain,” and “no environment or exclude in advance,” pertaining to risky situations and compared the mean scores on negative emotions and sensations. First, we conducted a one-factor, four-level ANOVA, with groups as the independent variable and mean scores on negative emotions and sensations as the dependent variable. The results revealed that the effects of groups on the dependent variable

Table 2. Results of ANOVA of Groups by Responses (Item 2-B) and Emotion/Sensation (Item 2-A)

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	η^2p	<i>1-β</i>
When a 1- or 2-year-old tries to climb to a high place						
Negative emotion	1.739	4	0.435	3.423**	0.012	0.856
Negative sensation	2.064	4	0.516	3.312*	0.012	0.843
When a 1- or 2-year-old tries to climb down from a high place						
Negative emotion	1.889	4	0.472	3.745**	0.013	0.889
Negative sensation	2.515	4	0.629	4.06**	0.015	0.915
When a 1- or 2-year-old tries to touch an insect which is not dangerous						
Negative emotion	1.111	4	0.278	2.215†	0.008	0.654
Negative sensation	2.266	4	0.567	3.661**	0.013	0.881

** $p < .01$ * $p < .05$ † $p < .10$

were significant for the three questions in Table 2. Second, we compared the mean scores using multiple comparison by Games-Howell. The mean score of negative emotions and sensations in the group that did not have high spaces to climb on and do not find insects in the center or exclude insects in advance were significantly lower than that of the group that helped children or were present with them during a particular situation (Figures 3, 4, and 5).

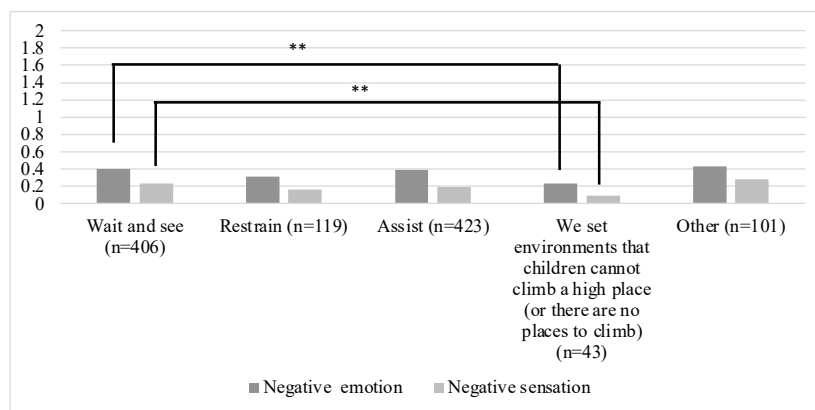


Figure 3. Mean score of negative emotions and sensations by each category of answer to “When a 1- or 2-year-old tries to climb to a high place” (** $p<.01$)

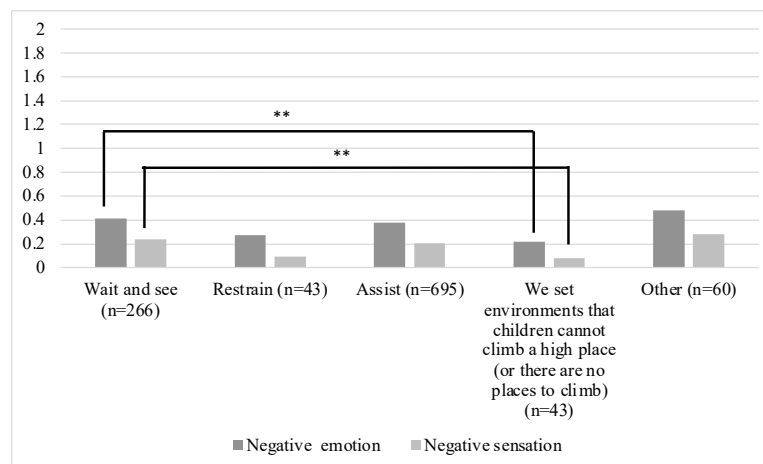


Figure 4. Mean score of negative emotions and sensations by each category of answer to “When a 1- or 2-year-old tries to climb down from a high place” (** $p<.01$)

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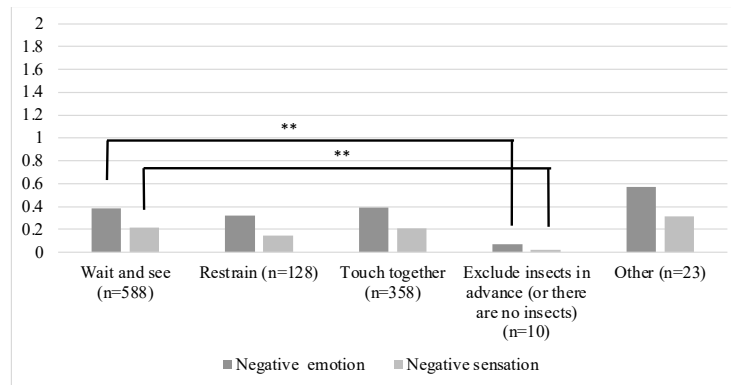


Figure 5. Mean score of negative emotion and sensation by each answer about the response when a 1- or 2-year-old tries to touch an insect which is not dangerous (** $p < .01$)

There were no significant differences in the mean scores of responses to questions about risky situations. Additionally, there were no significant differences in mean scores of rating emotions and sensations between the groups that chose “assist, do together, etc.” or “restrain,” although the tendencies of the order of mean scores were similar among the three questions as indicated in Figures 3, 4, and 5.

Practice for children’s experience (Item 2-C)

First, we listed the frequently used words in the free-text answers (Table 3). We focused on answers pertaining to children’s experiences to explore if practitioners regarded negative or risky experiences as important, rather than simply telling rules or ways to avoid danger. Two words meaning “experience” were frequently used; one word was used by 139 (17.9%) and the other by 54 (6.9%) respondents (Table 3). Next, we extracted the descriptions of “experience” ($n = 183$), including descriptions containing both words, that are experience (*keiken*) and experience (*taiken*), and further analyzed them by focusing on the explanation of children’s risky experience.

Second, from the 183 answers referring to “experience,” we extracted 73 answers about risky experiences that included the words: “danger,” “dangerous,” “tumble/turn/fall/collision,” “injury,” “failure,” “pain,” “fear,” and “fight.” Table 4 shows the numbers and percentages of answers including each word with examples. In all the 73 cases, these

Table 3. Top 50 Words Used Most Frequently in Responses (Item 2-C) and Number of Respondents

Words	<i>n</i>	%	Words	<i>n</i>	%
1 danger (<i>kiken</i>)	234	30.1	21 evacuation training (<i>hinan-kunren</i>)	61	7.8
2 watch (<i>mimamoru</i>)	199	25.6	22 dangerous (<i>abunai</i>)	60	7.7
3 play (noun; <i>asobi</i>)	169	21.7	23 conduct (<i>koudou</i>)	59	7.6
4 experience (<i>keiken</i>)	139	17.9	24 together (<i>issho</i>)	58	7.5
5 tell (<i>tsutaeru</i>)	121	15.6	25 use (<i>tsukau</i>)	56	7.2
6 safe (<i>anzen</i>)	112	14.4	walk (<i>aruku</i>)	56	7.2
7 child (<i>kodomo</i>)	105	13.5	27 environment (<i>kankyo</i>)	55	7.1
8 body (<i>karada</i>)	101	13.0	do/carry out (<i>okonau</i>)	55	7.1
9 self (<i>jibun</i>)	99	12.7	practitioner (<i>hoiku-sha</i>)	55	7.1
10 movement (<i>undou</i>)	87	11.2	30 experience (<i>taiken</i>)	54	6.9
know (<i>shiru</i>)	87	11.2	fall/ tumble (<i>korobu</i>)	54	6.9
12 play (verb; <i>asobu</i>)	81	10.4	32 body (<i>shintai</i>)	53	6.8
13 adopt (<i>tori-ireru</i>)	78	10.0	many (<i>ooi</i>)	53	6.8
14 hand (<i>te</i>)	73	9.4	34 voice (<i>koe</i>)	52	6.7
15 stop (<i>seishi</i>)	70	9.0	35 place/ space (<i>basho</i>)	50	6.4
skill/ ability (<i>chikara</i>)	70		body (<i>mi</i>)	50	6.4
17 caregiver (<i>hoikushi</i>)	69	8.9	37 playground (<i>entei</i>)	48	6.2
18 going walking (<i>sanpo</i>)	67	8.6	38 word (<i>kotoba</i>)	46	5.9
19 activity (<i>katsudou</i>)	63	8.1	playground equipment (<i>yugu</i>)	46	5.9
necessary (<i>taisetsu</i>)	63	8.1	40 challenge (<i>chosen</i>)	45	5.8

Table 4. *Negative Words Used in Responses (Item 2-C) about “Experience” (n = 73) and Examples of Descriptions*

Negative words	n	Percentage (n = 73) *	Examples **
Danger/ dangerous	42	57.5	We value the children’s curiosity and allow them to <u>experience</u> what they can, so that they can learn what is dangerous.
Tumble/ turn/ fall/ bump into	15	20.5	Although there are <u>failures</u> such as <u>bumping into</u> , <u>falling down</u> , or <u>falling</u> during play, we believe that these <u>failures</u> lead to avoidance of the next failure. We believe that these <u>failures</u> lead to avoidance of the next failure.
Failure/ mistake	12	16.4	Most children, for the most part, gain valuable knowledge through the experience of <u>failing</u> several times. So, I try not to take such opportunities away from children. (...) But it is a difficult task because there are failures where the child just fell and his body is fine, but he accidentally cuts his lip and bleeds heavily and needs to see a doctor.
Pain	12	16.4	Whenever a child has a <u>painful</u> or <u>frightening</u> experience, we talk to him or her. We also ask the child what happened and why, and tell them what to do next time.
Scary/ frightening	4	5.5	Under the supervision of the practitioners, the curiosity of children who want to try things is given priority, even though the practitioners know they are dangerous, so that the children can feel “ <u>scared</u> and dangerous” by experiencing the things they want to try.
Injury	3	4.1	When children play in the yard, practitioners always keep an eye on them and allow them to move freely as much as possible, so that they can avoid major dangers by experiencing <u>small injuries and pain</u> .
Fight	2	2.7	We value situations such as <u>fights</u> with friends, since it is precisely because children are involved with each other that they have the experience of knowing how the other feels.

Note. Total is not 100% because some statements include more than one word. Important words are underlined.

experiences were valued rather than avoided, under the condition that the practitioners supervised the children and carefully explained to them the possibilities or reasons of injury or accidents using words. However, their descriptions reveal that it was sometimes difficult for the practitioners to predict serious injuries (emboldened).

With respect to Item 2-B, from 73 answers, two answers referred to place with heights as important environments: “Having the playgrounds at different heights and allowing the children to climb up and come down freely helps strengthen their legs and hip muscles” and

“Children start climbing up and down on high and low surfaces under the practitioner’s watchful eye.” Subjective responses did not mention insects, since many respondents expressed their general views and practices and did not refer to any particular environment.

Discussion

Outdoor environments and practitioners’ views

The elements provided in outdoor environments for children below 3 years were places with water, places with play materials and tools, sandpits, plants they could touch in the flower beds and planters, and places where food was grown. There were not many centers with different types of grounds and elevations, such as artificial hills, slopes, undulating ground, muddy playground, and lawns, where children could enjoy. Places with rough ground, hills, and slopes were referred to as places that were risky to some extent as children could tumble but would still learn how to deal with such areas (Ishida et al., 2020).

Responses on item 2-B revealed that some centers did not have any place for children to climb up and come down, or did not have spaces with insects. While formulating items, We did not formulate separate items for inclusion of risky places in establishing centers and whether practitioners intentionally excluded risky places (e.g., “We set environments that children cannot climb a high place” or “There are no places to climb”). Additionally, responses to such questions may be influenced by participants’ positions (for example if they are principals or not). Although there is difficulty in interpreting answers, in such centers, the practitioners did not value children’s experience of negative emotions and sensations expressed as “I feel disappointed,” “I am timid,” “It is cold,” or “It is hot.” This may be because they did not aim to provide experiences that might evoke negative emotions; therefore, the children were not exposed to such risky environments. Furthermore, they might not have witnessed the children experiencing such emotions and sensations because the environment provided was not risky. A cause-and-effect relationship cannot be concluded as practitioners’ practices and views might have influenced the kind of environment provided in the centers; the environment might also have affected their practices and beliefs.

Additionally, no significant results were found with respect to questions such as “When children tried to pluck flowers/plants” and other choices such as “assist or do together” and “restrain.” To “wait and see” children in risky situations such as climbing up and down from high places, practitioners need to believe in children’s abilities and take care of them before and after they experience risky, painful, or scary situations, as Item 2C indicates. This may be one of the reasons why the group of respondents who chose “wait and see” for “When a 1- or 2-year-old tries to climb to a high place,” “When a 1- or 2-year-old tries to climb down from a high place,” and “When a 1- or 2-year-old tries to touch an insect” rated distinctively high in negative emotions and sensations. Additionally, practitioners’ practices vary with respect to children’s development, characteristics of the environment, or the practitioners’ past experiences. More studies are needed to reveal the effects of outdoor environments on practitioners’ beliefs about supporting children in risky situations.

Practices and views of practitioners about outdoor activities

With respect to the ECEC outdoor environment used by children below 3 years, the average rating for positive emotions and sensations was high compared to the negative emotions and sensations. When asked about how they handled risky situations, a high percentage of practitioners restrained children when they tried to eat something inedible and in other situations which led to accidents. While there was consensus in practitioners’ views regarding the support provided to many centers, the centers also differed on certain aspects, which need to be explored along with the characteristics of each center in relation to other aspects such as children’s age and development, practitioners’ experience or area of playground and building. There is also room for further research on the role of each physical environment in children’s physical development.

In the ECEC outdoor environment, a variety of experiences that nurture children’s ability to avoid danger and protect themselves are valued. These include (minor) risks, injuries, falls, mistakes, pain, and fear. Practitioners also valued supervising and sharing such negative situations with children (Table 4). Thus, practitioners’ responses after such experiences are important in nurturing children’s ability to protect themselves from dangers. In childcare for infants and toddlers, practitioners’ role in supporting when they experience negative feelings

as an “attachment figure” (Bowlby, 1979) are valued. It seems that responses to risky experiences are also an extension of such responses. However, the extent and perception of risk is likely to vary across centers. How practitioners perceive negative emotional experiences of children below 3 years as important may be related to their perceptions of various experiences and experiences that develop the ability to avoid danger and keep themselves safe, as well as to their perception of risky experiences.

The relationship between practitioners’ beliefs and responses in specific risky situations is not clear and needs to be examined from multiple perspectives in conjunction with the practitioners’ support for children throughout their daily lives in centers, the center’s environment, and children’s actual situation. We also need to consider age differences with respect to risk (Kleppe et al., 2017).

Implications for practice and future research

Guidelines for a congenial outdoor environment

Despite its importance, there are no detailed guidelines for outdoor environments especially for young children. While formulating guidelines or standards, not only the tools, equipment, and space available for playgrounds, but also the types and elevations of grounds must be considered, so that children are able to take small risks to climb up and down and stumble, and learn how to avoid injuries. Such experiences may help them engage in challenging and risky play when they grow up. In Japan, many daycare centers do not have their own outdoor environment and use neighboring parks as alternative spaces, so attention should be paid to the environment available for young children in public spaces such as parks.

Some centers did not have insects or elevated areas that children could climb up or descend from, although we could not reveal whether such situations were caused in establishing centers or practitioners intentionally excluded insects or elevated areas. We also need to conduct an in-depth exploration of such experiences that can be risky, by specifying places in the guidelines or standards. However, setting up such environments alone does not suffice, and practitioners must engage in discussions pertaining to experiences necessary for child

development.

Exploring practitioners' thoughts about negative experiences

In early childhood, especially at a young age such as 3 years, building close relationships with people and things that are familiar to children is thought to be the most important, so that they feel relieved and secure. This may be one of the reasons why practitioners rated positive emotions and sensations highly as compared to negative ones. However, when children have varied experiences in their outdoor environment, they may experience fear and negative sensations, such as “hot” or “dirty”. Such sensations are also experienced upon encountering risky situations. Children below 3 years are at a stage of rapid development; hence, in-depth discussions with respect to children's age in months, such as differences between 3 months and 9 months, or between infants and toddlers, are needed. Practitioners' perceptions of children's negative experiences may vary, and some of such perceptions may be due to their positions, individual experiences, gender, and so on. We focused on differences in perceptions of negative experiences among centers and hence could not reveal such sub-variables in detail. Practitioners from different centers might also perceive them differently; therefore, further research should explore such views and their relationship with practice, including children's developmental stages. Hence, a platform for such discussions should be established.

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