



Young children's perspectives regarding rough and tumble play: A systematic review

Pirkko Siklander^a, Julie Ernst^b, & Rune Storli^c

^a *University of Oulu, Finland, corresponding author, e-mail: pirkko.siklander@oulu.fi*

^b *University of Minnesota Duluth, U.S.A*

^c *Queen Maud University, Norway*

ABSTRACT: Play types and play environments often are influenced by adults, with children having little agency in organizing their own play. This is particularly illustrated in the context of rough and tumble play (RT), which is a type of play pursued by children, but often discouraged by adults. When adults prohibit RT play, they limit opportunities for children to benefit from the outcomes associated with this form of play. A systematic review of literature was conducted toward understanding children's perspectives regarding RT play and how children have been included in RT research. The results suggest, despite having several roles in RT research, there is a noticeable absence of children's perspectives on RT play. This absence points to a need for research that captures children's perspectives on specifically RT play in ways that involve children not just as the subjects of observations, but as active participants with voices, preferences, ideas, and agency.

Keywords: *play, rough and tumble play, risky play, children's perspectives, play environment*

Introduction

Children's rights for a high-quality early childhood education and care, as well as their right to play, are stressed by national and international reports, studies, and curricula (Karila, 2016; Karila, Kosonen, & Järvenkallas, 2017). For instance, the *Framework Plan* in Norway, which guides the content and tasks of early learning and care, states that kindergarten programs are to help children experience well-being, joy and achievement through a variety of physical activities, indoors and outdoors year round, as well as to help them evaluate and master risky play through physical challenges (Norwegian Directorate for Education and Training, 2017). Although play has historically been central to Finnish early childhood education and care, its importance is emphasized even more so in the 2018 national curriculum for early childhood education (Finnish National Agency for Education, 2019). Similarly, the North American guidelines for early childhood environmental education (North American Association for Environmental Education, 2016) emphasize the importance of using the natural world for open-ended exploration, discovery, and play. Even the American Academy of Pediatrics in the United States encourages play for healthy child development (Yogman, Garner, Hutchinson, Hirsh-Pasek, & Golinkoff, 2018).

However, adults and children view play differently (Ernst, 2018), and the type of play, play location, and time for play are often determined by adults (Hännikäinen, Singer, & van Oers, 2013; Stolp, 2011). While play and academic learning can coincide, academic skill instruction in early childhood education too often overrules play and playful learning environments (Armstrong, 2006). When asked, children prefer play and play environments where they can explore through child-centered activities (Ernst, 2014; Hyvönen et al., 2014; Siklander, Vuopala, & Martikainen, 2020) and experience joy, fear, excitement, and success (Coster & Gleeve, 2008; Hyvönen & Kangas, 2007; Sandseter, 2010; Sandseter & Kennair, 2011), as well as rough play forms (Storli, 2013). *Rough and tumble* (RT) play affords these experiences, yet there is a tendency for educators to prohibit this type of play due to being unfamiliar with its benefits or lacking skills to pedagogically design RT playful learning processes (Hart & Tannock, 2013; Logue & Harvey, 2010; Sandseter, 2007; Storli & Sandseter, 2017). Similarly, decision makers, parents, and caregivers may not adequately understand play, particularly RT play, and thus tend to discourage children from participating in this form of play (Singh & Gupta, 2011; Nicholson, Bauer, & Wolley, 2016; Pramling Samuelsson & Carlsson, 2008; Stolp, 2011). Further, a desire to discourage RT play has also resulted in educators and caregivers limiting free play periods, as often this is when RT play arises (Smith & Connolly, 1980). It is in this context that we have reviewed studies about RT play in early childhood, aiming to highlight children's perspectives and preferences, toward furthering

the use of RT play as a pedagogical practice that supports children's participation in early learning and care and promotes their right for all types of play.

Review of literature

Rough and tumble (RT) play

RT play shares the characteristics embodied by common definitions of play. Similar to other forms of play, RT play is enjoyable, lacks extrinsic rewards, is spontaneous and voluntary, and involves active engagement (Garvey, 1977). RT play as a specific form of play refers to vigorous behaviours, such as running, chasing and fleeing, wrestling, tumbling, tagging, and falling to the ground on top of each other in ways that could appear as aggressive, except for the playful context in which it is undertaken (Carlson, 2011; Humphreys & Smith, 1984; Pellegrini & Smith, 2005). It is also defined as verbally and physically co-operative play behavior, where participants enjoyably and voluntarily engage in reciprocal role-playing that includes aggressive make-believe themes, actions, and words, yet lacks an intent to harm either emotionally or physically (Hart & Tannock, 2013; Colwell & Lindsey, 2005). RT play, as any other play, comprises rules, which children agree. For instance, they may agree about the basic plot and polices, such as kicking is not allowed. RT play is commonly observed in children's freetime play, typically emerging when children begin to engage in social play (around three years of age), and peaking between five and eight years old, as it develops into games with rules (Humphreys & Smith, 1987). Some aspects of it, such as characteristics of affection (punching in the arm, for example) may extend into adolescence and even adulthood (Humphreys & Smith, 1984). While often associated with boys' playtime, both girls and boys enjoy brisk, vivid, and rough play (Hyvönen, 2008b; Hyvönen & Kangas, 2007; Tannock, 2011).

RT play is often situated within a typology of six categories of risky play (Sandseter, 2007): 1) Play with great heights, 2) Play with high speed, 3) Play with harmful tools, 4) Play near dangerous elements, 5) Rough and tumble play, and 6) Play where the children can disappear or get lost. RT play may include or combine other types of play, such as big body play, imaginative play, and fantasy play. RT play has dimensions of social play but is also characterised by gross locomotor dimensions and sometimes elements of object play (sticks and toy guns, for example) (Tannock, 2011). As such, the characteristics of rough and tumble play extend over a wide range of social interactions among the players from purely physical intimate contact or tumbling (Reed & Brown 2000; Storli, 2013; Tannock 2011) to goal-directed play-fighting or wrestling (Aldis, 1975).

Benefits of rough and tumble play

There is a growing body of evidence regarding the role of RT play in children's development and learning, with benefits that include physical health and development, social development, and aggression regulation (Dodge, Coie, Pettit, & Price, 1990). Additionally, this form of play helps develop coordination and has been associated with improved physical movements (Hart & Tannock, 2013). Research by Pellis, Pellis and Foroud (1999) suggests RT play aids children in being able to calibrate movements and orient oneself physically in appropriate and adaptive ways. Pelligrini (1987) proposes the motor skills developed through RT play can be drawn upon and used in other forms of play as children grow. Further, because RT play is so physical, children have many of their vital touch needs (e.g., big body play affords children to touch and receive touch) met (Carlson, 2006).

In terms of social development, the positive influence of RT play on social competence is strongly supported in the research literature (Pellis, Pellis, & Reinhart, 2010). Social physical play, including RT play, enhances social competencies, such as affiliation with peers, social signalling, and useful managing and dominance skills within the peer group (Humphreys & Smith, 1987; Pellegrini & Smith, 1998). It also provides for practice of complex social skills, such as bargaining, manipulating and redefining situations (Smith, 1982). RT play helps children gain competence in social competition and experience in dominant and subordinate roles, and allow for the simultaneous practice of spontaneous, competitive, and co-operative interaction, which have utility in adult life (Bjorklund & Pellegrini, 2000; Jarvis, 2007). Flinn and Ward (2005) similarly argue these social competencies have short term benefits, but also will in the long run enhance survival and reproduction. While these competencies could be fostered through adult-directed activities with children, these experiences are unlikely to create the intricate neural pathways developed through ongoing opportunities for children to independently test and recalibrate interaction skills within the social 'classroom' of RT play (Bjorklund & Pellegrini, 2002).

It is also worth noting that while risky play more broadly is associated with physical and social development, there is a unique, added developmental outcome afforded by RT play. Across the six categories of risky play (Sandseter, 2007), risks are in the context of the physical environment (for example, playing at greater heights or speeds), with the possibility for injury. RT differs from these other categories of risky play, in that the risks involved are more social than physical in nature. For example, if a child does not read the cues of his or her peers, such as becoming too aggressive, there are social consequences such as future exclusion from peers. In RT, children need to be able to perceive and

respond to play signals and social cues from peers constantly, and as such, it is a more dynamic, and often more challenging, form of risky play.

Adults' perspectives of rough and tumble play

While there is a growing body of evidence pointing to the benefits of RT play, it remains one of the most challenging kinds of play to support in early childhood education and care institutions (Hewes, 2014; Flanders, Leo, Paquette, Pihl, & Séguin, 2009; Pellis et al., 2010). Even though children often choose RT play (Yates & Oates, 2019), practitioners tend to discourage or even prohibit it. In a Norwegian study, it was often misunderstood and identified as the most restricted form of play (Storli & Sandseter, 2015, 2017). For example, teachers may prohibit it, believing it to be unsafe and aggressive (Bauer & Dettore, 1997; Hart & Tannock, 2013; Sandseter, 2007), or they will be unable to manage the behavior (Reed, Brown, & Roth, 2000). Caregivers and teachers, as well as parents, often mistake this play style for real fighting that can lead to true anger, aggression, or violence (Gartrell & Sonsteng, 2008). The assumption that play fighting typically escalates or that children are often injured while playing this way is commonly reflected in licensing standards, where caregivers and teachers are instructed to actively diffuse RT play and limit time and space that might encourage these forms of play. Yet, research suggests playful fighting as well as other forms of RT play seldom lead to real fighting or injury (Smith, Smees, & Pellegrini, 2004). Also, teachers may lack an understanding of the developmental benefits of RT play (Little, Wyver, & Gibson, 2011). And some have questioned the premise that children seek out this form of play, as well as the assumption that forms of risky play, including RT play are essential to children's growth (Gurholt & Sanderud, 2016).

While there is a growing body of research focused on understanding adults' perceptions of RT play (e.g., DiCarlo, Baumgartner, Ota, & Jenkins, 2015; Hart, 2016; Storli & Sandseter, 2015), Hart and Tannock (2018) call for additional research regarding adults' and particularly teachers' misconceptions of this form of play, toward developing necessary strategies for supporting RT play with young children.

Children's perspectives

Frequently missing in the design of play environments and provision of play opportunities is the involvement of children in the design and planning processes. As noted in the prior section, researchers often call for further research on adults' perceptions. However, less recognized and encouraged is the need for children's perspectives to guide play practices in the context of early educational and care environments. If studied and incorporated, children may generate ideas that adults have not thought of, resulting in greater diversity of play types, spaces, and elements, and also

potentially greater use (Philo, 1992). Muñoz (2009) references research that involved children as key actors within the research and design process, including research by Burke (2005) and by Yanagisaw (2007) that explored the role of children in relation to the design of outdoor play spaces. She also highlighted work by Nairn, Panelli and McCormack (2003), which advocated for understanding the views and experiences of young people, linking these works to wider discussions regarding children's agency. Muñoz (2009) calls for involving children in the design process, toward the provision of play opportunities and play spaces that children themselves want to use.

Beyond the design of play spaces and play opportunities, child-centred methods are called both in research and pedagogical practices more broadly. Children should be viewed as partners, not as objects, with their experiences as central to pedagogy and research (Estola, Kontio, Kyrönniemi-Kylmänen, & Viljamaa, 2010; Hyvönen et al., 2010). In the context of play, children's roles can vary from partners, participants, and subjects in play processes. In these roles, children are considered as having rights rather than being simply the recipients of adult input, which, in practice, denotes the means by which the children's voices are heard (Cheney, 2011; Dockett & Perry, 2007). Children can also be playful designers and creators, with agency to contribute in meaningful ways (Hyvönen & Kangas, 2007). There are many child-based or play-based methods for gathering children's perspectives, such as conversations with and without the use of picture books or photographs, the compilation of portfolios, and digital picture taking, as well as writing, drawing, and playing. Additionally, children have been heard through their responses to questionnaires (Awartani, Whitman, & Gordon, 2008) and through their input in planning and designing workshops (Meskanen & Teräväinen, 2009). As referred to Powell and Smith (2009), children should be viewed as social actors who can make decisions about their roles. Therefore, we should communicate with and be responsive to children regarding their roles in play and research activities.

Review purpose and methodology

While additional research regarding benefits of RT play and teachers' perspectives on RT play would be useful, the perspectives of children appear to be even scarcer and needed. Thus, our aim was to conduct a systematic review of the literature regarding RT play, seeking the perspectives of young children, toward learning how their voices have been heard in academic research and what they have to say about RT play.

A systematic review is recognized as an appropriate way to search and analyze large literature databases, in order to provide an overview of the current state of knowledge,

and describe research insights, existing gaps, and future research directions (Palmatier, Houston, & Hulland, 2018). Guided by the approach used by Ang (2018), our review entailed a protocol-driven methodology of systematic searching and screening of published literature. We conducted a staged process that involved the formulation of the review questions, development of a review protocol, formulation of inclusion and exclusion criteria, database searches, data extraction, analysis and synthesis of the findings.

Our initial review of literature, presented earlier, guided the formulation of our two research questions for this systematic review:

1. What are young children's perspectives regarding RT play?
2. How have young children's perspective regarding RT play been studied?

In consultation with each other and university reference librarians, and guided by our initial literature review, the following search terms were generated: rough and tumble play, rough play, risky play, outdoor play, nature play, play, perceptions, children, young children, early childhood, benefits, pedagogy, practices, and impacts. We then formulated initial inclusion and exclusion criteria, through an iterative process of consultation, discussion, and guidance from our original review of literature. The resulting initial inclusion criteria were as follows: peer reviewed empirical studies, published in scholarly journals between 2011-2020; and written in English. The initial exclusion criteria used in our review were as follows:

- were not aligned with the research questions in this study; and
- were not undertaken from an educational or social science perspective.

A search was conducted in two major academic databases, Scopus and Proquest (Education database and ERIC). University reference librarians provided assistance in constructing coded keyword sentences for the searching the titles, abstracts, and keywords of entries in these two databases. Inclusion and exclusion criteria were used to select appropriate and focused studies. The first round of searches resulted in 643 articles. All items were first screened by their title and abstract. We sorted these items into the following categories: 1) articles about RT or risky play (in light of RT being a specific category within risky play) that were from or included children's perspectives, 2) articles about RT and/or risky play that did not highlight children's perspective, and 3) articles that did not fit within either of the prior two categories.

This sorting resulted in 15 articles in the first category, which was our category of interest per our research questions. We then reviewed these articles in their entirety, toward excluding articles that focused on children older than 12 years of age, due to our interest

in the developmental relevance of RT play to young children, and due to the focus of our article being early childhood education and care. We also retained articles where children were up to 12 years, if younger children (birth to age 8) also participated in the study. This resulted in a total of nine remaining articles (Table 1). These nine articles became the source for the steps of data extraction, analysis, and synthesis.

TABLE 1 The nine selected articles in this study, participants and research topic in the studies.

NUMBER	ARTICLE	PARTICIPANTS AND RESEARCH TOPIC
1	Gyllencreutz, L. Rolfsman, E., Frånberg, G-M., & Saveman, B-I. (2020). Injury risks during outdoor play among Swedish schoolchildren: Teachers' perceptions and injury preventive practices. <i>Education 3-13</i> , 48(1), 1-11. doi:10.1080/03004279.2018.1551912	Children (N=48; 6-12) Children's thoughts about what is risky play.
2	Di Norcia, A., Bombi, A. S., Cannoni, E. <i>et al.</i> (2018). Physical risk taking in preschoolers: A comparison between children's and mothers' perceptions. <i>Journal of Child and Family Studies</i> , 27, 3027-3036. https://doi.org/10.1007/s10826-018-1115-3	Children (N = 203; 4-5 years) Preschoolers' perceptions of physical risk-taking.
3	Nikiforidou, Z. (2017). 'It is riskier': Preschoolers' reasoning of risky situations. <i>European Early Childhood Education Research Journal</i> , 25 (4), 612-623. https://doi.org/10.1080/1350293X.2017.1331075	Children (N = 50; 5-6 years) Children's perspectives and perceptions about risky and riskier situations in outdoor play.
4	Flannigan, C., & Dietze, B. (2017). Children, outdoor play, and loose parts. <i>Journal of Childhood Studies</i> , 42(4), 53-60. https://doi.org/10.18357/jcs.v42i4.18103	Children (N=27; 4-5 years) Children's free play, when they use loose parts in nature, including various types of risk taking.
5	Gurholt, K. P., & Sanderud, J. R. (2016). Curious play: children's exploration of nature. <i>Journal of Adventure Education and Outdoor Learning</i> , 16(4), 318-329. https://doi.org/10.1080/14729679.2016.1162183	Children (N = 60; Age not provided); Key informants (N = 7; boys 6-10 years) Children's free play in nature as experienced and described by children.

6	Blanchet-Cohen, N., & Elliot, E. (2011). Young children and educators engagement and learning outdoors: A Basis for rights-based programming, <i>Early Education & Development</i> , 22(5), 757–777. doi: 10.1080/10409289.2011.596460	Children (N = 12; 0–5 years) Children's perspectives on play: engagement, learning, and risk in the outdoors.
7	Yates, E., & Oates, R. (2019). Young children's views on play provision in two local parks: A research project by early childhood studies students and staff. <i>Childhood</i> , 26(4) 491–508. https://doi.org/10.1177/0907568219839115	Children N = 60; 3–11 years Children's perspectives regarding outdoor play, including risky play.
8	Coe, H. A. (2017). Embracing risk in the Canadian woodlands: Four children's risky play and risk-taking experiences in a Canadian forest kindergarten. <i>Journal of Early Childhood Research</i> , 15(4), 374388. https://doi.org/10.1177/1476718X15614042	Children (N = 4; 4–5 years) Children's perspectives on safe risk-taking and risky play experiences in forest kindergarten.
9	Tannock, M. (2011). Observing young children's rough-and-tumble play. <i>Australian Journal of Early Childhood</i> , 36, 13–20. https://doi.org/10.1177/183693911103600203	Children (N = 17; 5 years) Children's behaviours and comments during rough and tumble play.

Eight of these nine studies were qualitative studies, and one used a quantitative methodology. The studies were carried out in Sweden, Italy, Greece, Canada, Norway, and Great Britain; one study did not reveal the country. Six studies focused on risky play in the context of outdoor, natural environments. Only one of the studies (Tannock, 2011) was solely about RT play, and two studies (Di Nordia, 2018; Gyllencreutz et al., 2020) partially focused on it.

The steps of data extraction, analysis, and synthesis were guided by a data-driven, thematic content analysis approach (Schreier, 2012). This was undertaken in an ongoing, iterative cyclical process, informed by the research questions, as well as by the original literature and our emerging understanding of the literature reviewed in this portion of the methodology.

Results

Young children's perspectives regarding RT play

The first research question guiding our review focused on young children's perspectives regarding RT play. Only one article in the set of articles we reviewed focused specifically on RT play. That study (Tannock, 2011) offers limited insight into the research question at hand, as the study's purpose was not focused on gathering children's perspectives. However, from the observations and documented comments of children engaged in RT play, we can conclude that children enjoy RT play, indicated by the laughter, grinning and smiling the researchers observed while children were engaged in RT play, even when teachers would admonish the play for being too rough. Beyond that, we drew from studies that entailed risky play, recognizing the RT is a form of risky play. However, the breadth of types and diversity of risky play make drawing inferences from these studies and applying them specifically to RT play also quite limiting. Acknowledging these limitations, we offer the following as potential perspectives of children regarding risky play that may have transferability to their perspectives on RT play:

Risky play affords joyful, loud, and big body engagement with others and elements of the surrounding environment

Studies reviewed suggest children seek opportunities to actively and joyfully engage in play and elements of the play environment with their entire body, full voices and all senses, and that one way this happens is through risky play outdoors in nature. Blanchet-Cohen & Elliot (2011) describe it by "joyful engagement." The following excerpt is from a child in Coe's (2017, 383) study:

"I like to go to the forest and have lots of hikes. And play in the snow on the hike. And go in the shelters. And check out trees. And paint on bark. And draw on bark. And painting leaves. And going to the creek. And sliding. And I like to go to the creek where you can slide and fish. And the climbing rock. I like to climb on it and I like to build houses with it."

In addition to the positive expressions of liking and loving, fear was also expressed by children in the context of risky play, but not always as a negative emotion (Gyllencreutz et al., 2020). For example, children's "butterflies in the stomach" when faced with risky play challenges, testing their limits, and exploring unknown or uncertain conditions were interwoven with descriptors such as "thrilling" excitement (Di Norcia et al., 2018; Gyllencreutz et al., 2020; Yates & Oates, 2019; Blanchet-Cohen & Elliot, 2011).

The studies reviewed also suggest risky play outdoors in nature and with other children affords children to express themselves and communicate by using their voices more loudly and vividly than in other environments and play types. Children were observed

making loud yells, roars, and screams, as well as loud laughter, during RT and other forms of risky play in outdoor natural environments (Flannigan & Dietze, 2017; Gurholt & Sanderud, 2016; Tannock, 2011). Often, these loud and joyful vocalizations were accompanied by big body movements, physical contacts, and playful fighting and wrestling (Tannock, 2011). Also, other studies brought out children' desire for physical contacts, such as piling their bodies (Coe, 2017) and nonverbal, bodily communication (Gurholt & Sanderud, 2016; Flannagan & Dietze, 2017).

The studies highlight the interactional triangle of children, their environment, and other people, and the resulting forms of joy-filled, playful interactions. This interactional triangle is complex and malleable; relations are reshaping constantly as affordances in the environment and among peers are realized. This reshaping provides new and on-going opportunities for joyful engagement through risky play, even when present adults' behavioral cues suggest it should be otherwise (Tannock, 2011).

Open-endedness, serendipity and reciprocity in play is desirable, and they are afforded through risky play in natural environments

As mentioned above, the interactional triangle provides new and on-going opportunities; this open-endedness and serendipity seems both sought by children and afforded by risky play. Gurholt and Sanderud (2016) and Yates and Oates (2019) provide insights about the open-endedness and unpredictability of elements in natural environments, and how that can prompt and maintain engagement in play activities. As an example, Gurholt and Sanderud (2016) offer the examples of trees or running water as unpredictable and open-ended elements that offer *hidden affordances*, as children have to discover possible playful interactions with and in them; finding these hidden affordances means that children have discovered something new about the phenomena or about themselves (Hyvönen, 2008a). Trees and running water, like other natural elements, are alive with possibilities; they are sources of playfulness and children can create a reciprocal interaction with them. They invite, trigger, and stimulate children for interactive playfulness. As mentioned in several studies, researchers have seen that climbing is fun for children, but it is not only climbing as a physical activity that produces enjoyment, but the cognitive element afforded by these natural elements. The hidden affordances of nature encourage and even require not just physical and often "big body" interaction, but cognitive engagement in forms such as perception, imagination, creativity, memory, thinking, and language. By evoking in young children curiosity, wonder, and imagination, children have opportunities to perceive, wonder, test, and understand. Through this, what starts as unknown becomes known.

In the context of parks, Yates and Oates (2019) suggest children want to increase elements that are more alive and less predictable, in sharp contrast to traditional playground equipment that generally lacks open-endedness, serendipity and hidden affordances. For

instance, children's suggestions included things such as bringing animals into the park, having a playshop and mud kitchen, including artwork and garden, and having paddling water, and other natural play materials. These reflect their desire for more open-ended elements that offer space for children's activities, creativity, and imagination. These elements allow cognitive processes, such as problem-solving, decision-making and more choices for unpredicted activities.

Risky play affords opportunities for cooperation, and collaboration

The theme of collaboration emerged from the selected studies. For example, Flannigan and Dietze (2017) explored behaviors that children exhibited as they used loose parts outdoors, of which a favorite play theme was play fighting. Children showed behavior that is typical for collaborative learning: they negotiated common goals for their play episodes and created the narrative, the plot for the activities, and shared the acts; they were able to turn-taking, decision-making and problem-solving together. Similarly, Gyllencreutz et al. (2020) reported cooperational play with sticks and other cooperational forms of RT play as play engaged in and enjoyed by children outdoors. The studies reviewed offered examples of children's preferences for settings and elements that afforded collaboration between girls and boys and across age groups, as well as settings that offered possibility for inclusion (Flannigan & Dietze, 2017; Tannock, 2011; Yates & Oates, 2019).

Young children are aware of physical risks and recognize their agency within risky play settings

Stemming from this review, children appear to have some awareness of risks associated with certain play forms and play environments. For example, children were observed telling their peers to avoid hazardous environments and actions. They can differentiate minor from major injuries, as well as visible and invisible injuries, which can result from risky play. They also seem to recognize that they can get hurt (physically) through risky play. There also appears to be a recognition of agency in the context of risky play held alongside the belief of bad luck as sometimes being the source of injury in risky play (Gyllencreutz, et al. 2020; Nikiforidou, 2017). While often children believe their play looks more dangerous than it actually is, because they are used to playing that way, and thus potentially underestimate the risk involved (Gyllencreutz et al., 2020; Coe, 2011), it is also noted that children's evaluations of risky situations can be rather coherent with adults' evaluations (Di Nordia et al., 2018). Nikiforidou's (2017) research shows children as young as five can evaluate physical risks in play and think about causal relations, as well as probability scenarios regarding what might happen. Children seem cognizant of their use of visual protections as a way to regulate risks, visually seeking the presence of first by the presence of safety elements, such as fences, or if there is a person around that could

help them if needed (Yates & Oates, 2019). Gyllencreutz et al. (2020) indicate children recognize they need to “be careful” during risky play and think about the risk and their own capabilities, describing and demonstrating the ability to self-regulate during risky play.

Approaches to researching young children’s perspectives regarding RT play

The second research question guiding this review was focused on how young children’s perspectives regarding RT play have been studied. Our review yielded only one article that focused specifically on RT play. Thus, children’s perspectives regarding RT appear to be studied (in roughly the last decade) in the broader context of risky play, and using methods such as observations, interactive activities, drawings, dialogues, and interviews. Interviews were conducted in a variety of formats, including both individually and as a focus group, as well as by photo-elicitation method and by using illustrative cards or images. Observations entailed video recording and photographing, as well as in person observations combined with note-taking.

More specifically, our review yielded the following roles for young children in RT and risky play research:

Young children as objects

As noted, there was only one study (Tannock, 2011) that focused specifically on RT play. This study entailed observations of children’s RT behavior and documenting children’s comments during play. Similarly, Coe (2017) and Flannagan and Dietze (2017) used observations of children during play. Coe (2017) observed children’s safe risk-taking and risky play experiences in forest kindergarten. Flannagan and Dietze (2017) were interested in how children use loose parts in their nature play and what kind of play (including risky play) unfolds when playing in nature. In these studies, children’s play behaviors, often in the form of unstructured free play, were observed and analyzed by adults, with the children serving as the objects of the studies; in essence, they were viewed as children to be studied. Using observations, however, can be limited in that speculations about children’s perspectives and preferences, and even about what children are doing during their play, may not match what is happening during play, nor children’s perceptions about play. Yet, while limited, using observations provides an element of agency in that the children have the right to play freely without adults’ interruptions.

Young children as informants

For obtaining children’s perspectives, researchers have conducted observations alongside other methods, such as discussions with children during the activities or after they had participated in activities. For instance, Gurholt and Sanderud (2016) observed

children, ran field dialogues with them, and conducted photo-elicitation with children selected as key informants. Other studies seeking to gain perspectives of children, such as Gyllencreutz et al. (2020) and Blanchet-Cohen and Elliot (2011), used observations and interviews to elicit their perspectives. In other studies, such as Gurholt and Sanderud (2016), children similarly were the informants, with the researchers seeking to understand what their play was like, but apart from observations of the children during their play. Di Norcia et al. (2018), for example, interviewed children individually, and presented six illustrations of common situations in play contexts for enhancing children's ability to discuss risks and risk-taking in play. The situations described play in increasing levels of physical risk. The children were asked to describe their experiences in such situations and to evaluate their preferences for taking risks. Children's desires predict their actual play behavior, RT play included. Nikiforidou (2017) also used images while interviewing children to elicit children's perceptions, perspectives and reasoning about play and risk-taking.

Young children as contributors

Yates and Oates (2019) illustrate the idea of valuing children as research participants, other than as objects to be studied, or as participants with information to provide. In their research study, children's perspectives were sought but for the specific purpose of guiding the designs that would be used to update two local parks. Children participated as a group, as well as individually, in providing their ideas through activities such as choosing different materials, drawing play areas, describing ideal parks and outdoor play environments, and voting on and discussing preferred activities and elements/equipment. They also made a collage using all the drawings to make a 'group park.' Their study shows the potential for young children to contribute to research in ways beyond informing researchers about their play perspectives, but in ways that extended into applications that were both valued and authentic.

Conclusions and implications

The aim of this systematic review of literature was to investigate children's perspectives regarding RT play and their roles within this body of research. First, we explored young children's perspectives regarding RT play, and found the following results: 1) Risky play affords joyful, loud, and big body engagement with others and elements of the surrounding environment.; 2) Open-endedness, serendipity and reciprocity in play is desirable, and they are afforded through risky play in natural environments; 3) Risky play affords opportunities for cooperation, and collaboration; 4) Young children are aware of physical risks and recognize their agency within risky play settings. Second, we analysed

approaches to researching young children's perspectives regarding RT play, and found three roles for children in research regarding the broader category of risky play. They have been objects, informants, and contributors in the research.

The results suggest that while children's perspectives on risky play have been explored in the literature, there is a noticeable absence of children's perspectives on specifically RT play. This absence points to a need for research that captures children's perspectives on specifically RT play in ways that involve children not just as the subjects of observations, but as active participants with voices, preferences, ideas, and agency (Hyvönen et al., 2014; Munos, 2009; Philo, 1992; Powell & Smith, 2009).

Although the element of risk was a prominent theme across the articles reviewed, risks were in the context of physical risks, not social risks. Children seem to recognize physical risks, but it is unclear regarding their recognition of social risks in risky play, and particularly in RT play. This element could be a part of further research for understanding children's perspectives of RT play. Understanding their perspectives regarding and recognition of the social risks involved in RT play would be helpful in guiding educators and caregivers in responding to and supporting children in preparing for and navigating the social risks (and consequences) that naturally emerge from RT play. Further, an understanding of children's perspectives regarding the social risks of RT play could guide teachers as they support children in developing the social and emotional skills (for example reading social cues) that will guide them in "successful" RT play.

In RT play and in other physically active play, children's risk-reasoning is important to consider, because many observational studies (Flannigan & Dietze, 2017; Storli, 2013; Tannock, 2011) show that RT play is a common and desirable part of children's play. In order to regulate risk in RT, Storli (2013) argues not all behaviours in RT must be competitive, goal-directed and vigorous. Bodily play with a low degree of competition and a high degree of cooperation and care is also considered to be an essential part of children's RT play.

RT is a relatively new area of exploration, which means that conceptual clarification is still needed. As Tannock (2011) points out, researchers and practitioners are not necessarily sure whether RT play is really play. Conclusively, our research suggests important qualities for RT play, which should be considered when defining and researching RT play, and when teachers design play with children. The qualities denote particularly physical, emotional and social aspects, but also cognitive, because in RT play children constantly perceive their environment and play actions, use their imagination and creativity, and evaluate the risks. Practitioners in formal and informal contexts as well as researchers and teacher education programmes benefit from this research when utilising the results

in their pedagogical, educational and scientific activities. There is strong evidence of benefits of the RT play for boys and girls (e.g., Dodge et al., 1990; Hart & Tannock, 2013; Pellis et al., 1999), complemented with our results from children's perspective, practitioners could develop their play pedagogies accordingly. RT play should not anymore be misunderstood and identified as the most restricted form of play (Storli & Sandseter, 2015, 2017). Researchers are encouraged to design RT research designs and more specifically enhance and capture children's agency. Teacher education programmes both in early education and primary school teacher education can deepen their understanding of play and develop educational practices within the playful contents and designs.

The review undertaken was limited in terms of the parameters established for the review. For example, by focusing on articles published in English, we likely overlooked relevant and important studies that may have shed a different light on our findings. Similarly, we reviewed articles published more recently, potentially at the expense of a body of literature that was published prior to 2011. Similarly, while we hoped to explore children's RT perspectives, our review yielded only one study specifically on RT play; however, this study did not share our aim of gathering children's perspectives. Thus, we drew from studies that entailed risky play, recognizing the RT is a form of risky play, recognizing the diversity of risky play makes drawing inferences from these studies and applying them to specifically to RT play quite limiting. Thus, perhaps the primary implication from this review is that further research is needed, and specifically research focused on RT play from children from across geographies and cultures and gathered in a way that honours the agency they demonstrate in their ability to not just demonstrate but also articulate their preferences, reasonings, and ideas about risky play.

References

- Aldis, O. (1975). *Play-fighting*. New York: Academic Press.
- Ang, L. (2018). Methodological reflections on the use of systematic reviews in early childhood research. *Journal of Early Childhood Research*, 16(1), 18–31.
<https://doi.org/10.1177/1476718X17750206>
- Armstrong, T. (2006). *The best schools: How human development research should inform educational practice*. Alexandria, Va: ASCD, Association for Supervision and Curriculum Development.
- Awartani, M., Whitman, C., & Gordon, J. (2008). Developing instruments to capture young people's perceptions of how school as a learning environment affects their well-being.

- European Journal of Education*, 43(1), 51–70. <https://doi.org/10.1111/j.1465-3435.2007.00337.x>
- Bauer, K. L., & Dettore, E. (1997). Superhero play: What's a teacher to do? *Early Childhood Education Journal*, 25(1), 17–21. <https://doi.org/10.1023/A:1025677730004>
- Bjorklund, D., & Pellegrini, A. (2000). Child development and evolutionary psychology. *Child Development*, 71, 1687–1708. <https://doi.org/10.1111/1467-8624.00258>
- Blanchet-Cohen, N., & Elliott, E. (2011). Young children and educators engagement and learning outdoors: A basis for rights-based programming. *Early Education and Development*, 22(5), 757–777. <https://doi.org/10.1080/10409289.2011.596460>
- Burke, C. (2005). Play in focus: Children researching their own spaces and places for play. *Children, Youth and Environments*, 15(1), 27–53. <https://www.jstor.org/stable/10.7721/chilyoutenvi.15.1.0027>
- Carlson, F. (2011). Rough play: One of the most challenging behaviors. *Young Children*, 66(4), 18–25. Retrieved from <https://search.proquest.com/scholarly-journals/rough-play-one-most-challenging-behaviors/docview/881563793/se-2?accountid=13031>
- Carlson, F. M. (2006). *Essential touch: Meeting the needs of young children*. Washington, DC: NAEYC.
- Cheney, K. (2011). Children as ethnographers: Reflections on the importance of participatory research in assessing orphans' needs. *Childhood*, 18, 166–179. doi: 10.1177/0907568210390054
- Coe, H. A. (2017). Embracing risk in the Canadian woodlands: Four children's risky play and risk-taking experiences in a Canadian forest kindergarten. *Journal of Early Childhood Research*, 15(4), 374–388. <https://doi.org/10.1177/1476718X15614042>
- Colwell, M. J., & Lindsey, E. W. (2005). Preschool children's pretend and physical play and sex of play partner: Connections to peer competence. *Sex Roles*, 52, 497–509. doi: <https://doi.org/10.1007/s11199-005-3716-8>
- Coster, D., & Gleeve, J. (2008). *Give us a go! Children and young people's views on play and risk-taking*. London: National Children's Bureau.
- DiCarlo, C. F., Baumgartner, J., Ota, C., & Jenkins, C. (2015). Preschool teachers' perceptions of rough and tumble play vs. aggression in preschool-aged boys. *Early Child Development and Care*, 185(5), 779–790. doi: 10.1080/03004430.2014.957692
- Di Norcia, A., Bombi, A.S., Cannoni, E., & Marano, G. (2018). Physical risk taking in preschoolers: A comparison between children's and mothers' perceptions. *Journal of Child and Family Studies*, 27, 3027–3036. doi: <https://doi.org/10.1007/s10826-018-1115-3>
- Dockett, S., & Perry, B. (2007). Trusting children's accounts in research. *Journal of Early Childhood Research*, 5(1), 47–63. <https://doi.org/10.1177/1476718X07072152>
- Siklander, Ernst & Storli. *Varhaiskasvatuksen Tiedelehti — JECER* 9(2) 2020, 551–572. <http://jecer.org>

- Dodge, K. A., Coie, J. D., Pettit, G. S., & Price, J. M. (1990). Peer status and aggression in boys' groups: Developmental and contextual analyses. *Child Development*, *61*(5), 1289–1309. <https://doi.org/10.2307/1130743>
- Ernst, J. (2018). Exploring young children's and parents' preferences for outdoor play settings and affinity toward nature. *International Journal of Early Childhood Environmental Education*, *5*(2), 30–45. https://naturalstart.org/sites/default/files/journal/7._ernst.pdf
- Ernst, J. (2014). Early childhood educators' preferences and perceptions regarding outdoor settings as learning environments. *International Journal of Early Childhood Environmental Education*, *2*(1), 97–125. <https://files.eric.ed.gov/fulltext/EJ1108039.pdf>
- Estola, E., Kontio, M., Kyrönniemi-Kylmänen, T., & Viljamaa, E. (2010). Ethical insights and child research. In E.-L. Kronqvist & P. Hyvönen (Eds.), *Insights and outlouds: Childhood research in the North* (pp. 185–201). Acta Universitatis Ouluensis E Scientiae Rerum Socialium 107. Oulu: Oulu University Press. <http://jultika.oulu.fi/files/isbn9789514261091.pdf>
- Finnish National Agency for Education (2019). *National Core curriculum for Early Childhood Education and Care*. Regulations and guidelines 2018:3c. Helsinki: Finnish National Agency for Education.
- Flanders, J., Leo, V., Paquette, D., Pihl, R., & Séguin, J. (2009). Rough-and-tumble play and the regulation of aggression: An observational study of father-child play dyads. *Aggression Behavior*, *35*(4), 285–95. <https://doi.org/10.1002/ab.20309>
- Flannigan, C., & Dietze, B. (2017). Children, outdoor play, and loose parts. *Journal of Childhood Studies*, *42*(4), 53–60. doi: 10.18357/jcs.v42i4.18103.
- Flinn, M. V., & Ward, C. V. (2005). Evolution of the social child. In B. Ellis & D. Bjorklund (Eds.), *Origins of the social mind: Evolutionary psychology and child development* (pp. 19–44). London: Guilford.
- Gartrell, D., & Sonsteng, K. (2008). Promote physical activity - It's proactive guidance. *Young Children*, *63*, 51–53. Retrieved from <http://www.lmsbuilder.com/oaeyc/handouts/Guidance%20with%20Boys.pdf>
- Garvey, C. (1977). *Play*. Cambridge, MA: Harvard University Press.
- Gurholt, K., & Sanderud, J. (2016). Curious play: Children's exploration of nature. *Journal of Adventure Education and Outdoor Learning*, *16*, 1–12. <https://doi.org/10.1080/14729679.2016.1162183>
- Gyllencreutz, L. Rolfman, E., Frånberg, G.-M., & Saveman, B.-I. (2020). Injury risks during outdoor play among Swedish schoolchildren: Teachers' perceptions and injury preventive practices. *Education 3-13*, *48*(1), 1–11. <https://doi.org/10.1080/03004279.2018.1551912>
- Hart, J. L. (2016). Early childhood educators' attitudes towards rough play among boys: Exploring the importance of situational context. *Early Childhood Development and Care*, *12*(186), 1983–1993. <https://doi.org/10.1080/03004430.2016.1146262>
- Siklander, Ernst & Storli. *Varhaiskasvatuksen Tiedelehti — JECER* 9(2) 2020, 551–572. <http://jecer.org>

- Hart, J. L., & Tannock, M. T. (2013). Rough play in early childhood settings. *Children Australia*, 38(3), 106–114. doi:10.1017/cha.2013.14
- Hart, J., & Tannock, M. (2018). Rough play: Past, present, and potential. In P. Smith & J. Roopnarine (Eds.), *The Cambridge handbook of play: Developmental and disciplinary perspectives* (pp. 200–221). Cambridge: Cambridge University Press.
- Hewes, J. (2014). Seeking balance in motion: The role of spontaneous free play in promoting social and emotional health. *Early Childhood Care and Education. Children*, 1, 280–301. doi: 10.3390/children1030280
- Humphreys, A. P., & Smith, P. K. (1984). Rough-and-tumble in preschool and playground. In P. K. Smith (Ed.), *Play in animals and humans* (pp. 241–266). Oxford: Blackwell.
- Humphreys, A. P., & Smith, P. K. (1987). Rough and tumble, friendship, and dominance in school children: Evidence for continuity and change with age. *Child Development*, 58, 201–212. <https://doi.org/10.2307/1130302>
- Hyvönen, P. (2008a). *Affordances of playful learning environment for tutoring, playing and learning*. Doctoral dissertation. Acta Universitatis Lappeensis 152. Rovaniemi: University of Lapland.
- Hyvönen, P. (2008b). Teachers' perceptions of boys' and girls' shared activities in the school context: towards a theory of collaborative play. *Teachers and Teaching: Theory and Practice*, 14(5–6), 391–409. <https://doi.org/10.1080/13540600802571312>
- Hyvönen, P., & Kangas, M. (2007). From bogey mountains to funny houses: Children's desires for play environment. *Australasian Journal of Early Childhood*, 32(3), 39–47. <https://doi.org/10.1177/183693910703200307>
- Hyvönen, P., Kronqvist, E.-L., Järvelä, S., Määttä, E., Mykkänen, A., & Kurki, K. (2014). Interactive and child-centred research methods for investigating efficacious agency of children. *Journal of Early Childhood Education Research*, 3(1), 82–107. <https://jecer.org/interactive-and-child-centred-research-methods-for-investigating-efficacious-agency-of-children/>
- Hännikäinen, M., & Singer, E. & Van Oers, B. (2013). Promoting play for a better future. *European Early Childhood Education Research Journal*, 21(2), 165–171. doi: 10.1080/1350293X.2013.789192
- Jarvis, P. (2007). Monsters, magic and Mr Psycho: A biocultural approach to rough and tumble play in the early years of primary school. *Early Years: An International Journal of Research and Development*, 27(2), 171–188. <https://doi.org/10.1080/09575140701425324>
- Karila, K. (2016). *Vaikuttava varhaiskasvatus*. Tilannekatsaus toukokuu 2016. Raportit ja selvitykset 2016:6. Helsinki: Opetushallitus. https://www.oph.fi/sites/default/files/documents/vaikuttava_varhaiskasvatus.pdf

- Karila, K., Kosonen, T., & Järvenkallas, S. (2017). *Varhaiskasvatuksen kehittämisen tiekartta vuosille 2017–2030*. Opetus- ja kulttuuriministeriön julkaisuja 2017:30. Helsinki: Opetus- ja kulttuuriministeriö.
<https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/80221/okm30.pdf>
- Little, H., Wyver, S., & Gibson, F. (2011). The influence of play context and adult attitudes on young children's physical risk-taking during outdoor play. *European Early Childhood Education Research Journal*, 19(1), 113–131. doi: 10.1080/1350293X.2011.548959
- Logue, M., & Harvey, H. (2010). Preschool teachers' views of active play. *Journal of Research in Childhood Education*, 24, 32–49. 10.1080/02568540903439375
- Meskanen, S., & Teräväinen, H. (2009). *Future school - Designing with children*. Publications in Architecture, 100, Espoo: Painotalo Casper.
<http://innoschool.tkk.fi/innoarch/dokumentit/tkk-future-school-web.pdf>
- Muñoz, S-A. (2009). *Children in the outdoors: A literature review*. Scotland: Sustainable Development Research Centre (SDRC). <https://www.ltl.org.uk/wp-content/uploads/2019/02/children-in-the-outdoors.pdf>
- National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network (2000). *Characteristics and quality of child care for toddlers and preschoolers, applied developmental science*, 4(3), 116–135. doi: 10.1207/S1532480XADS0403_2
- Nairn, K., Panelli, R., & McCormack, J. (2003). Destabilizing dualisms: Young people's experiences of rural and urban environments. *Childhood*, 10(1), 9–42.
<https://doi.org/10.1177/0907568203010001002>
- Nicholson, J., Bauer, A., & Woolley, R. (2016). Inserting child-initiated play into an American urban school district after a decade of scripted curricula: Complexities and progression. *American Journal of Play*, 8(2), 1–44.
<https://www.journalofplay.org/sites/www.journalofplay.org/files/pdf-articles/8-2-article-inserting-child-initiated-play.pdf>
- Nikiforidou, Z. (2017). 'It is riskier': Preschoolers' reasoning of risky situations. *European Early Childhood Education Research Journal*, 25(4), 612–623.
<https://doi.org/10.1080/1350293X.2017.1331075>
- Norwegian Directorate for Education and Training. (2017). *Framework plans for kindergartens*. Retrieved from <https://www.udir.no/globalassets/filer/barnehage/rammeplan/framework-plan-for-kindergartens2-2017.pdf>
- North American Association for Environmental Education. (2016). *Early childhood environmental education programs: Guidelines for excellence*. NAAEE: Washington, DC, U.S.
- Siklander, Ernst & Storli. *Varhaiskasvatuksen Tiedelehti — JECER* 9(2) 2020, 551–572.
<http://jecer.org>

- Palmatier, R.W., Houston, M.B., & Hulland, J. (2018). Review articles: Purpose, process, and structure. *Journal of the Academy of Marketing Sciences*, 46, 1–5.
<https://doi.org/10.1007/s11747-017-0563-4>
- Pellegrini, A. D., & Smith, P. K. (Eds.). (2005). *The nature of play: Great apes and humans*. New York: Guilford Press.
- Pellegrini, A. D., & Smith, P. K. (1998). The development of play during childhood: Forms and possible functions. *Child Psychology and Psychiatry Review*, 3(2), 51–57.
<http://dx.doi.org/10.1017/S1360641798001476>
- Pellis, S. M., Pellis, V. C., & Foroud, A. (2005). Play fighting: Aggression, affiliation, and the development of nuanced social skills. In R. E. Tremblay, W. W. Hartup, & J. Archer (Eds.), *Developmental origins of aggression* (pp. 47–62). New York: The Guilford Press.
- Pellis, S. M., Pellis, V. C., & Reinhart, C. J. (2010). The evolution of social play. In C. M. Worthman, P. M. Plotsky, D. S. Schechter, & C. A. Cummings (Eds.), *Formative experiences: The interaction of caregiving, culture, and developmental psychobiology* (p. 404–431). Cambridge, UK: Cambridge University Press.
- Philo, C. (1992). Neglected rural geographies: A review. *Journal of Rural Studies*, 8(2), 193–207.
[https://doi.org/10.1016/0743-0167\(92\)90077-J](https://doi.org/10.1016/0743-0167(92)90077-J)
- Powell, M. A., & Smith, A. B. (2009). Children's participation rights in research. *Childhood*, 16(1), 124–142. <https://doi.org/10.1177/0907568208101694>
- Pramling Samuelsson, I. & Carlsson, M.A. (2008). The playing learning child: Towards pedagogy of early childhood. *Scandinavian Journal of Educational Research*, 52, 623–641.
<https://doi.org/10.1080/00313830802497265>
- Reed, T., & Brown, M. (2000). The expression of care in rough and tumble play of boys. *Journal of Research in Childhood Education*, 15(1), 104–116.
<https://doi.org/10.1080/02568540009594779>
- Reed, T. L., Brown, M. H., & Roth, S. A. (2000). Friendship formation and boys' rough and tumble play: Implications for teacher education programs. *Journal of Early Childhood Teacher Education*, 21(3), 331–336. <https://doi.org/10.1080/0163638000210304>
- Sandseter, E. B. H. (2007). Categorising risky play: How can we identify risk-taking in children's play? *European Early Childhood Education Research Journal*, 15(2), 237–252.
<https://doi.org/10.1080/13502930701321733>
- Sandseter, E. B. H. (2010). 'It tickles in my tummy!' Understanding children's risk-taking in play through reversal theory. *Journal of Early Childhood Research*, 81(6), 67–88.
 doi:10.1177/1476718X09345393
- Sandseter, E. B. H., & Kennair, L. E. O. (2011). Children's risky play from an evolutionary perspective: The anti-phobic effects of thrilling experiences. *Evolutionary Psychology*, 9(2), 257–284. <https://doi.org/10.1177/147470491100900212>
- Siklander, Ernst & Storli. *Varhaiskasvatuksen Tiedelehti — JECER* 9(2) 2020, 551–572.
<http://jecer.org>

- Siklander, P., Vuopala, E., & Martikainen, S. (2020). Playful making in an early education context: Indoors, outdoors, and FabLab. In *Eapril 2019 Conference Proceedings* (pp. 144–158), Retrieved from 4/27/20, https://eapril.org/sites/default/files/2020-04/Proceedings2019_2.pdf
- Schreier, M. (2012). *Qualitative content analysis in practice*. London: SAGE Publications Ltd.
- Singh, A., & Gupta, D. (2011). Context of childhood and play: Exploring parental perceptions. *Childhood, 19*(2), 235–250. doi:10.1177/0907568211413941
- Smith, P. K., & Connolly, K. (1980). *The ecology of preschool behavior*. New York: Cambridge University Press.
- Smith, P., Smees, R., & Pellegrini, A. (2004). Play fighting and real fighting: Using video playback methodology with young children. *Aggressive Behavior, 30*, 164–173. <https://doi.org/10.1002/ab.20013>
- Stolp, M. (2011). Children's art: Work or play? Preschoolers considering the economic questions of their theatre performance. *Childhood, 19*(2), 251–265. doi:10.1177/0907568211415556
- Storli, R. (2013). Characteristics of indoor rough-and-tumble play (RT) with physical contact between players in preschool. *Nordic Early Childhood Education Research Journal. Tidsskrift for Nordisk Barnehageforskning, 6*(16), 1–15. <https://doi.org/10.7577/nbf.342>
- Storli, R., & Sandseter, E. B. H. (2015). Preschool teachers' perceptions of children's rough-and-tumble play (RT) in indoor and outdoor environments. *Early Child Development and Care, 185*(11–12), 1995–2009. <https://doi.org/10.1080/03004430.2015.1028394>
- Storli, R., & Hansen Sandseter, E. B. (2017). Gender matters: Male and female ECEC practitioners' perceptions and practices regarding children's rough-and-tumble play (R&T). *European Early Childhood Education Research Journal, 25*(6), 838–853. doi:10.1080/1350293X.2017.1380881
- Tannock, M. T. (2011). Observing young children's rough-and-tumble play. *Australasian Journal of Early Childhood, 36*(2), 13–20. <https://doi.org/10.1177/183693911103600203>
- Yanagisawa, K. (2007). School planning and design with children's participation: A case study of Shimoyama Elementary School. *Children, Youth and Environments, 17*(1), 315–321. http://www.colorado.edu/journals/cye/17_1/17_1_21_Shimoyama.pdf
- Yates, E., & Oates, R. (2019). Young children's views on play provision in two local parks: A research project by early childhood studies students and staff. *Childhood, 1–18*. <https://doi.org/10.1177/0907568219839115>
- Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, R. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics, 142*(3), 1–17. <https://doi.org/10.1542/peds.2018-2058>