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# PLAY INTERVENTIONS IN PAEDIATRIC NURSING FOR CHILDREN AGED 0-6 YEARS OLD

Literature Review

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<p><b>Abstract</b></p> <p>Play is a difficult aspect to define due to its complexity. Even though play has multidimensional meanings, many researchers agree that play is a significant aspect of child's development. In other terms, play is used by children to learn, deal with difficult situations and feelings, as well as to explore themselves. Play is also a visible aspect of paediatric care in the hospital. Research shows that hospital environment is known to cause negative emotions, thus inhibiting the action of play. However, despite the possible difficulties of providing play in the hospital environment, play is pointed out to be a beneficial intervention for nurses dealing with paediatric patients.</p> <p>This thesis examined the useful and recent play interventions used in paediatric nursing. The aim was to contribute to the work of paediatric nurses by deepening the knowledge about play interventions in the paediatric nursing area. Literature review was used as a research method for this study. Nine (n=9) articles were included in this study from Cinahl, PubMed and ScienceDirect. The data was analysed by using the inductive content analysis. The partner organisation for this study was Kuopio University Hospital.</p> <p>The results showed the current, evidence-based play methods such as preparation play, distraction play, therapeutic play and medical play. The results also presented specific interventions such as use of technology, use of therapeutic toys, gamification, personalisation, art therapy and group play.</p> <p>The results of this study could be used to form recommendations for the work of paediatric nurses. Play can be used in distraction, education, preparation and socialisation of the in-patient and out-patient paediatric patients.</p>	
<p><b>Keywords</b></p> <p>Paediatric nursing, play, playfulness, hospitalisation, child, development, anxiety, fear</p>	

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## 1 INTRODUCTION

Play is a multi-dimensional topic in the context of children's nursing. Through play, children learn about the world around them and how to deal with specific situations. (Hockenberry, Wilson & Rodgers 2017, 47.) Children use play to explore and experience new things. A child always has a reason to play. (Smidt 2011, 2.) Play is seen as an important learning tool and one of the main elements in children's development. The content and type of play changes within the children's development and growth. (Hiitola 2000, 7-8.)

Hospitalisation affects children and their daily routines greatly. While being hospitalised, the daily routines, friends and favourite activities are missed. Hospitalisation acquires the child to adapt to the new environment and its people, such as healthcare professionals. Especially children under six years of age can have difficulties coping with the new situations, such as medical and nursing procedures. These new, strange situations can cause feelings of fear, anxiety and insecurity. (Depianti, da Silva, Monteiro & Soares 2014, 1118.) Another key fact in the hospital experience is the nature of the disease or condition that the child is experiencing and its possible limiting effect to the child's activity. The hospitalisation affects the whole family and in the worst case, the child's development. (Nijhof et al. 2018, 424-425.)

Play can help the admitted children to have a more positive experience while in the hospital (Gulyurtlu, Jacobs & Evans 2020, 3). Through play, children can be provided the opportunity to understand better the treatments they undergo (Tonkin 2014, 137). Using play, children can express their feelings and emotions, such as fear. It is important for nurses to know the signs of children's negative emotions, so that proper intervention can be implemented on time. (Tonkin 2014, 154.)

The purpose of this study was to implement a literature review of useful and recent play interventions used in paediatric nursing, especially with age group 0 to 6. The aim is to contribute to the work of paediatric nurses by deepening the knowledge about play interventions in the paediatric nursing area. Articles were selected from electronic databases, which were CINAHL, PubMed and ScienceDirect. The data was analysed by using the content analysis method. The partner of this thesis was Kuopio University Hospital.

## 2 CHILDREN'S PLAY

Deciding on a clear definition of play has proven difficult (Sheridan, Howard and Alderson 2011, 4). Sheridan et al. cites Howard's thoughts from year 2009 and states that play has its own meaning to each people, and that we as adults often rely on our perceptions on what is play, and how it looks like. (Sheridan et al. 2011, Howard 2009, 6.) The same authors propose Krasnor's and Pepler's suggestion on play definition (1980) as an enjoyable and voluntary activity, where a child has inner motivation and focus on the process rather than product (Sheridan et al. 2011, Krasnor & Pepler 1980, 5). Play is a natural way for a child to interact with people, to learn and relive experiences. Play is an activity that knows no age limit and is available to everyone. (Mannerheimin lastensuojeluliitto s.a.) In other words, play is real activity in an imaginary situation (Helenius & Lummelahti 2013, 61).

Children use play in trying to solve a problem they have made for themselves, exploring, or experiencing something, that the child feels interesting, scary, confusing, or exciting, or express their feelings related to some previous experience they have had. A child always has a reason to play and so has a full control over the play and its implementation. (Smidt 2011, 2.) A child has an inner instinct to play and filling the need of playing is almost as important as eating or experiencing the feeling of security. Almost everything the child does turns into playing. (Hiitola 2000, 8, 28.)

Play is agreed to be a right of a child. The Convention on the Rights of the Child mentions play in section 31 considering child's right to rest, free-time, play, recreational activity, cultural life, and the arts. (United Nations 1990.) In the General comments of the UN Committee on the Rights of the Child states that all mentioned parts in section 31 are connected to each other and when they are met, enrich children's life. All the parts have a significant impact on the quality of individual's childhood and optimal development. When children are given the opportunity to start play self-imposed and use their own talents and abilities, it increases their motivation to continue playing and physical activity. Taking part in the cultural life gives children a good base for playful communication. Furthermore, children have the right to rest, so that they will have enough of energy to take part in playing and recreational activities. (UN Committee on the Rights of the Child 2013.)

To recognise whether a child is playing or not, a person must consider the child's own perspective towards the activity. For example, a child performing an activity with no signs of enjoyment would likely be presumed not to be playing, rather than a child who is seen to be laughing and smiling while participating an activity. In both cases the child could experience the activity as play. (Sheridan et al. 2011, 6.) Then again, Hiitola (2000, 29) states that different types of play usually require the child to be actively involved in the activity. A child that sits still and watches tv, most likely does not play. Most of playing, including building blocks, running, and drawing, requires the child's physical activity. (Hiitola 2000, 29.)

The attitudes towards play have an important role in child's opportunity and motivation to play. Caregivers can either encourage a child to play or inhibit it. (Mannerheimin lastensuojeluliitto s.a.) Acknowledging the power and importance of play can encourage children to play as well as making the time and effort for play to be possible. Noticing the child and their play is important for children

and by so, children feel that their playing is meaningful. (Aivoliitto 2019.) A caregiver can build an optimal playing environment for the child by observing and knowing the child's interests and needs, and by offering the child toys and other age-appropriate objects to use. On the contrary, a playroom can be filled with toys a child usually gets excited about, but the child is the one to decide whether they wish to play or not. (Hiitola 2000, 28.)

Children's play-age can be divided into two periods: early play-age (1-3-year-old) and later play-age (3-6-year-old). In early play-age, the focus is on the development of large motor movements, in other words gross motor skills, such as crawling and standing up. In later play-age the child develops more on the fine motor skills, such as drawing more precise shapes and the cooperation with eyes and hands. (Storvik-Sydänmaa, Tervajärvi & Hammar 2019, 25-26.)

Through play, children grow as individuals, but also as members of a larger community (National Playing Fields Association 2000, 6). Playing can help the child to learn and accept the current rules and agreements of his or her society and culture (Storvik-Sydänmaa et al. 2019, 62). When playing, children learn ways to communicate, negotiate and understand others' feelings. With play child can work his or her emotion and creativity skills and reflect on their understanding of the world around them. (Mannerheimin lastensuojeluliitto s.a.) Play offers great opportunities to develop cognitive functions, such as thinking, memory and language skills (Mannerheimin lastensuojeluliitto s.a.). Playing further develops child's problem-solving skills and the ability to let one thing stand for something else. Play both affects development, but also reflects the current developmental level of a child. (Sheridan et al. 2011, 11-12.) In addition to social and cognitive skills, play also has an important role in practicing gross- and fine motor movements (Storvik-Sydänmaa et al. 2019, 62).

Play can also be explained through the theorists' ideas of play. Karl Groos was one of the earliest theorists of play. In his works, he argued in one of his main theories that play is a way of practicing survival and reproduction. He talked about play coming from the natural selection, especially with animals. Similarly, human children involve themselves in play for the satisfaction and learning (Akinobi 2021, 17-18.)

Jean Piaget (1999, 87), a Swiss psychologist, states that play can be seen as adaptation of human species. Just like any organ needing the sustenance, the mind needs mental stimulation in order to develop. Play can be seen as primitive in the neonates, when the first sensory actions such as thumb sucking are utilised as pleasurable activity. (Piaget 1999, 87-88.) Referring to the views of Piaget, he lists the main criteria for defining play: it is an activity that is spontaneous, is pleasurable, lacks conflicts and is not organised (Piaget 1999, 149-151). Unlike the imitation, which serves more as the formal accommodation to the models of behaviour, Piaget sees play as more relaxed activity and free of rules (Piaget 1999, 89).

Lev Vygotsky's Sociocultural Theory of Cognitive Development mirrored Piaget's beliefs. Vygotsky thought that children learn and develop through play. According to Vygotsky, play itself has a role in wish fulfilment and unrealisable desires through imagination. Vygotsky concentrated on how a child uses imagination in order to form play, especially in the pretend play. The younger child, for example, is not able to change a meaning of a specific object – for example a stick is a stick. However, in

pretended play the child can use the imagination and see the stick as a horse. Therefore, the imaginative or pretend play can be a source of liberty for the child as they can use their mind to create a completely new world. (Smith 2010, 32; Akudinobi 2021, 26-29.)

### 3 CHILD'S DEVELOPMENT AND PLAY FROM YEARS 0 TO 6

#### 3.1 0-2-year-old child's development and play

Development can be defined as gradual change to more advanced stages through growth and learning (Hockenberry et al. 2017, 38). A child's development includes physical and motor, as well as cognitive and socio-emotional development. Every child develops individually, thus children of the same age can be developmentally in a different stage. (Lastenmielenterveystalo.fi s.a.) Understanding children's development steps can help one to provide the optimal kind of play opportunities for children (Sheridan et al. 2011, 19).

From birth to 28 days of age, a baby is called a neonate, when otherwise under one-year-old baby is called an infant. Already after birth, all neonate's senses are in use and the neonate is taking on stimuli from everything that's happening around them. (Storvik-Sydänmaa et al. 2019, 20.) The toddlerhood, which is usually defined as a time of child's life during the ages of 12-36 months, is a time of exploration, developing social skills and the sense of self as well as a spike in the growth and biological development. The psychological systems are slowly maturing. The major motor skill which is developed during that stage is the skill of locomotion. This allows the toddler to move around and explore the world around them. In addition, the fine motor skill is demonstrated by the skill of dexterity with children of that age being able to pick a small object by 12 months, dropping a small object into the can by 15 months. (Hockenberry et al. 2016, 354-355.)

The motor development of an infant consists of gene-regulated growth, brain development, and training. The development is progressing from rough wide-ranging movements to fine motor control of the body. Developmental reflexions, such as the Moro reflex and the gripping reflex, slowly disappear during the first year of life, allowing for the development of motor skills. During the first year of life, the infant learns motor skills quickly, but at certain stages. At the age of a few months, the infant is able to raise their head, focus their eyes, put their hand in their mouth, and reach for objects. Over the next few months, the infant learns to turn from the belly to its back, grasp an object with one hand, crawl, grab with fingertips, and finally stand without support. At the age of 12 months, the toddler learns how to walk with support, eat, and undress himself and climb stairs. (Storvik-Sydänmaa et al. 2019, 20-22.) Within' the second year of toddlers' life, the physical growth slows down a little and is steadier. By the age of two, a toddler most likely has learned how to walk, talk a few words, throw, and kick a ball and build towers out of blocks (Storvik-Sydänmaa et al. 2019, 22, 25.)

A child has a natural instinct to attach to a caregiver, since it is the requirement for survival (Sinkkonen 2018, 38). Attachment relationship is the key for social development and social skills but also important aspect in cognitive development. In a safe attachment relationship, a child builds the sense of self as an individual and how people interact with each other. (Keltikangas-Järvinen 2012, 26-28.) A neonate needs an attachment relationship in order to develop. Interaction with an infant occurs in everything that is experienced together. Baby's care routines with caregivers are excellent opportunities for social interaction. For emotional development, it is important for the caregivers to



understand the infant's emotions and what they might be related to. (Mannerheimin lastensuojeluliito 2013a, 4-11.) A caregiver helps the child to cope with negative emotions and makes the child feel safe, by being there for the child to comfort them when they need it. The caregivers help children with difficult emotions when they are not able to do it independently yet. As children grow to be more independent, these experiences help in the process of emotion regulation. (Keltikangas-Järvinen 2012, 27.) The caregivers and siblings are newborn's favourite people to play with. The familiar faces and movements of loved ones are the best play opportunities provided for the baby. The newborn's start playing by mirroring their caregivers' acts and they enjoy the experiences with others. (Mannerheimin lastensuojeluliito 2013a, 14.)

Psychosocial development occurs in an interaction with other people, such as in a caregiver-child attachment relationship. Already at the age of a few months, the baby is able to respond to familiar people with a smile. At approximately age of six months, the child recognizes their own name and uses gestures to express themselves. When a child has turned one-year-old, they can sense another person's feelings and thoughts on some level and can play alongside another child. (Storvik-Sydänmaa et al. 2019, 19, 22.)

Erik H. Erikson, a psychoanalyst, and a psychologist, introduced a theory of the eight stages of psychosocial development in 1950s (Orenstein & Lewis 2020, 1). Erikson believed that human develops as a result from biological maturation, forming of social relationships and ego's action. Erikson's theory proposes eight different stages of development, where in each stage, an individual faces biological and social changes, which form psychosocial crises, that an individual must reflect on and solve. (Nurmi et al. 2014, 188.) The theory states that solving a crisis is a prerequisite for an individual to be able to solve the next development crisis to come (Kronqvist & Pulkkinen 2007, 102). The stages arise as an individual grows and faces new situations during childhood, adolescence, and adulthood. Each development stage proposes two alternatives for the outcomes when an individual fails or succeeds to solve the crisis. (Orenstein & Lewis 2020, 1.) The succeeded development crisis leads to positive outcome, like basic trust, and on the other hand, a negative outcome leads to the opposite emotion, mistrust's, intensification (Kronqvist & Pulkkinen 2007, 102). The stages in childhood include infancy-, early childhood-, play age- and school age period (Orenstein & Lewis 2020, 2).

Infancy period holds the positive alternative, trust and hope, and negative alternative, mistrust (Orenstein & Lewis 2020, 2). Erikson states that a child should achieve basic trust within the first year of age. Caregivers can help the child to form a basic trust by meeting the basic needs of a child, such as nutrition, hygiene, and warmth. If infant's needs are not met, an infant won't form a secure picture of the world and thus, starts to doubt and have mistrust in themselves, the world surrounding them and other people. (Kronqvist & Pulkkinen 2007, 102.) Mistrust can lead to difficulties in forming trustful relationships in the future. In early childhood period, the stage holds alternatives autonomy and will, or shame and doubt. (Siegler et al. 2017, 377.) In this period, a child from 1 to 3,5-years-old explores their boundaries, wanting to be more independent in their actions. According to Erikson, when a child pursuit acting through own will, it leads to the ability to set goals and achieve things. To achieve the positive alternative, child needs experiences of success, and the outside praise and good feedback for the accomplishments. Failure in this period leads to shame or

doubt on the child's adequacy. If the caregivers demand the child to succeed independently in something too early considering the developmental level, it can lead to the child being insecure and embarrassed about themselves. (Kronqvist & Pulkkinen 2007, 102-103.)

Cognitive and socio-emotional development is thought to consider the way a child behaves, express their feelings, cope with stressful situations, focus and learns and what kind of idea the child has about themselves and the world surrounding them. (Lastenmielenterveystalo.fi s.a.) Considering cognitive skills, Piaget divides children's cognitive development into four different stages. These stages were as follows: the sensorimotor stage, preoperational stage, concrete stage, and the stage of formal education. Through these stages, children learn by play to adapt new experiences into cognitive models which help them to deal with new situations better in the future. (Akudinobi 2021, 22-23.) The order of progress of the stages of development is fixed, so that the adoption of the things learned from the previous stage is a prerequisite for moving on to the next stage. In the sensorimotor stage (0-2 years) the child acquires information about his or her environment by observing and manipulating various objects and actively moving around. While playing, the child practices their new skills repeatedly. (Nurmi et al. 2014, 19-20.) According to Piaget, the infant's main activity can be seen as reflexes. Reflexes help the infant to get used to different environments. Reflex functions become useless when an infant is learning to control their movements by themselves. (Kronqvist & Pulkkinen 2007, 88.) Children start from reflex activity and progress to simple repetitive behaviours to imitating others. Children form a sense of cause and effect as they start using objects. Problem solving is a skill developed mainly through trial and error. Children develop a sense of self, while they start to interact with the environment with curiosity and enjoyment. A major realisation is the object permanence, which indicates that an object exists even though it won't be present. (Hockenberry et al. 2017, 45.) By the age of one month, an infant is able to see a bright target, if it is in the line of sight, and furthermore follow a target object by the age of two months. Almost at the age of six months, an infant can recognise familiar faces, and on the other hand, be afraid of people they don't recognise. By the age of one year, an infant is able to search for a toy that has been hidden, recognise symbols and form a sense of space and direction. During the second year of age, a toddler is an eager explorer and develops in their memory and focus skills. (Storvik-Sydänmaa et al. 2019, 22, 25.)

Moreover, Piaget thought that in sensorimotor play, children under 2 years old enjoy the sensory experiences with objects, such as sucking on a toy or dropping an object on the floor repeatedly (Smith 2010, 35). Sensorimotor or object play can be seen from the very early years of life. It allows the children to explore the objects of interest. Thus, the actions involved in the sensorimotor play can, not only, be enjoyable but also help the infant to explore the world around them. In later stages most of the object play activities are construction related, such as using building blocks to form a tower or to fit Lego blocks together. (Smith 2010, 124-128.) The object play has two main benefits. Firstly, the hypothesis says that sensorimotor and object play allows children to attain an efficiency in a particular skill. Secondly, this kind of play allows children to develop their critical thinking and problem-solving skills during infancy. (Smith 2010, 134-135.)

Piaget's states that in the preoperational stage (2-7-years-old) a child's development is led by egocentrism, which refers to the inability to put oneself in the place of another. Children cannot see things from any other perspective than their own. (Hockenberry et al. 2017, 45.) In this age, toddlers and pre-schoolers learn to express their thoughts and experiences with language and mental imagery (Siegler et al. 2017, 147). Piaget thinks that actual thinking can begin only when a child has learned to express their actions by language. Interacting with others and making sense of their actions becomes easier when a child can express themselves through language. It is common that a child in this age talks to themselves out loud and narrate what they are doing. (Kronqvist & Pulkkinen 2007, 88-89.) Preoperational thinking includes the inability to generalize, or do deductions, thus they can't reason what they observe, hear or experience. However, children can describe and use symbols to represent objects in their surroundings. (Hockenberry et al. 2017, 45.)

Coming to the end of sensorimotor period, children start to form more words and use language. Children are born with the capacity to learn language and speaking, but the environment must provide enough of stimulus for learning words and language. (Hockenberry et al. 2017, 45-46.) The second prerequisite for language development is to learn language in the early years of life, in the critical period for language development. Later, somewhere between 5 years and puberty, adopting a language is harder and less successful. (Siegler et al. 2017, 244.) The first spoken language is usually consisted of nouns and sometimes verbs and combination words, such as "bye-bye". Speaking the language progresses from simple words to using verbs, pronouns and gender words. Throughout the language development the amount of vocabulary the child understands is greater than the vocabulary they can speak. By the time a child can walk, they are able to name objects and people, and before school age, a child is capable of using simple, complete sentences that are average five to seven words. (Hockenberry et al. 2017, 46.) As children learn more words and tones of voices, they can start playing with them. This type of play is called language play. Children can play by repeating sentences or words, or perhaps, use familiar noises or sounds to have fun. (Smith 2010, 9.)

Early playing is active, short-term, and quickly changing by its nature. By the end of first year of age, the idea of objects' purposes form and a toddler starts to use familiar objects by their purpose, such as turning the wheel and open doors. (Nurmi et al. 2014, 64.) Nurmi et al. cites Lyytinen's thoughts from year 2000 and states that the transition into symbolic play occurs in the beginning of second year of age (Nurmi et al. 2014, Lyytinen 2000, 64).

Considering play, Sheridan et al. present Parten's (1932) theory on six social stages of play, including unoccupied behaviour, solitary play, onlooker behaviour, parallel play, associative play and cooperative play. Under two-year-old child usually starts the social playing process by unoccupied behaviour, which means not playing, but simply observing others. From there, the child progresses into solitary play, where a child plays by themselves, and is not interested in others. When children watch each other play but don't play with each other, is considered to be onlooker behaviour. Before the age of three, a child plays beside others, but not communicating with them, which states for parallel play. (Sheridan et al. 2011, 16-17; Pathways.org 2021.)

In addition, there are some generally accepted types of play to be recognized. In fantasy or pretend play, a child can imagine some objects or things to stand for something else than what they really are. The beginnings of fantasy play can be visible already in 18-month-old infants. (Smith 2010, 152-155.) By around 2 years of age, pretended play becomes more complex and develops until the end of preschool age. For example, a piece of paper can stand for a ticket or money. Physical activity play is understood to include all the play that require gross bodily movements. Physical activity play can be divided into two categories: exercise play and rough-and-tumble play. Exercise play stands for running, climbing, crawling and so on. It is usually a vigorous activity and may use the child's energy reserves. Exercise play can start from the early toddler years, with a decline in such activities during the primary school years. (Smith 2010, 101-103.) Rough-and-tumble play means rough physical activity in a social context; wrestling, kicking, chasing and so on. This kind of more harsh kind of play is more evident in the pre-school and school aged children. Early infant years the rough-and-tumble play may be tried upon by the toddlers on their parents, yet in later stages it becomes more evident in the play with friends. (Smith 2010, 104-106.)

### 3.2 3-6-year-old child's development and play

After 36 months, a child is considered a pre-schooler (ages 3 to 6) (Hockenberry et al. 2017, 39). A three-year-old is said to be a package full of energy. Playing can seem rough and the imagination runs wild. A child is even more interested in other people, what they look like and what are they doing. A child can control their movements better than before, and needs material and opportunities for creativity, like draw and do crafts. A three- to four-year-old can eat, pick up something to drink and go to the bathroom independently. (Mannerheimin lastensuojeluliitto 2013b, 5-10.) The four-year-olds compare themselves to other peers when assessing their own abilities and skills. A child sees their parents and older siblings as role models. The difference between genders is becoming more clearer at this age. A child needs parents' encouragement to develop as an individual, not looking at the gender. A four-year-old can play independently outside but needs parents to keep an eye on them and set rules to follow, to ensure the child's safety. A child enjoys playing real-like imagination- and roleplays, such as playing grocery store, house play and acting as animals. (Mannerheimin lastensuojeluliitto 2013c, 5-22.)

The physical growth of 3- to 4-year-old child is steadier than in the infant period (Hockenberry et al. 2017, 41). At the age of three to four, a child continues to learn motor skills and use their muscles in everyday activities and gets joy of learning new skills. A three-year-old can still change the hand they use to hold a pen and might ride a tricycle or a bike with training wheels. (Mannerheimin lastensuojeluliitto 2019.) A four-year-old can jump on one leg, walk the stairs step by step, draw shapes and use scissors (Kronqvist & Pulkkinen 2007, 85). A four-year-old is motorically so developed, that they are ready to start learning how to ski, ice-skate, swim, and ride a bike (Mannerheimin lastensuojeluliitto 2013b, 9).

Considering psychosocial development, a three- to four-year-old likes to be around peers the same age and play with them in small groups (Storvik-Sydänmaa et al. 2019, 25-26). In this age playing can already last longer and children play by agreed rules and with every participant having their own role. A four-year-old values playing with others highly. The role-playing play is a sign of social

development maturity. Before a child can step into an imaginary role, they must be able to think and understand other person's thoughts and feelings. Before being able to play in a role, a child plays role playing by mirroring other people and their acts, as for example getting a jacket on and pretending to be a mother who is going outside. (Keltikangas-Järvinen 2012, 152-153.)

Another important fact to remember in children's play in this age is that even though they enjoy playing with peers, playing with family members in the home environment still plays a big role in children's life. Children enjoy asking questions, learning by imitating and trying out new skills with family. (Sheridan et al. 2011, 42.) Caregivers can also help children to cope with emotions that arise during play, such as disappointment or bitterness (Mannerheimin lastensuojeluliitto 2013c, 20).

Children aged 3 to 4 like to ask a lot of questions, which is typical in this age. It is important to let the child ask questions and understand the importance of their curiosity in the view of development. It helps the child to be initiated and present their own thoughts. The sense of what is true and what is imagination is hard to differentiate during the age of three. A child could have an imaginary friend, but know, that imaginary friends are not real. It tells about the creativity and flexibility in child's thinking. Children this age need parents' help to name different emotions and deal with them. A child should feel that the parents accept every emotion they have and they help in processing them, which helps in the development of morality. (Mannerheimin lastensuojeluliitto 2013c, 5, 14-15.)

A three-year-old child's language development is in a level where they have learned to tell stories and the stories develop clearer by the age of four (Kronqvist & Pulkkinen 2007, 90-91). During the age of three, a child can produce word combinations and speak by using verbs, adjectives, substantives, and pronouns. A four-year-old's speaking is almost completely understandable. A child uses commands, prohibition and questions in their language, and language further develops to word- and rhyme games. (Nurmi et al. 2014, 46.)

Between ages three and four, a child starts to warm up more towards other children and playing with them. The motive for playing is to do something that is impossible to do in reality. By the age of three, a child has noticed, that even though they would like to try performing something, they can't actually try it yet. Play makes children's desired activity possible in an imaginary situation. (Jantunen, Suutarla & Heino 2019, 65-69.) Piaget defines pretend play in children of age 3 and older as socio-dramatic play. In this type of play, children play together trying out different roles and creating stories. It involves portraying a specific role (for example being a Mum in the 'house play'). (Smith 2010, 8-10.) In the views of Sheridan et al. (2011), 3 to 4-year-old child learns to share toys and take turns with peers. According to Sheridan et al. (2011), this 'Games-with-rules' type of play occurs in children of age 4 and more. It includes the understanding and acceptance of sharing, taking turns and fair play. (Sheridan et al. 2011, 15-16.)

Increased word capacity and language development allows the child to enjoy simple jokes and rhymes. Children communicate with each other in a great mixture of words, facial expressions and gestures. Children enjoy running, climbing, crawling and jumping now that controlling the bodily

movements is easier. They might also enjoy simple crafts, like using dough and gluing. (Sheridan et al. 2011, 42-43.)

In Parten's theory of six social stages of play, the stages of associative play and co-operative play describe the play of 3 to 4-year-old children. In associative play, a child starts to interact with others, but there is not that much cooperation needed, for example kids doing different activities on the same playground. By contrast, in co-operative play children aged 4 and above play with each other having an interest in both the activity and each other. (Sheridan et al. 2011; 17 Pathways.org 2021.) Furthermore, in co-operative play the children enjoy changing toys with each other and competing (Kronqvist & Pulkkinen 2007, 120).

Considering the development of five- to six-year-old children, they like to participate in the home chores and enjoy in the given responsibilities. Practicing new skills requires caregivers to encourage and praise the children, which helps children to keep motivated to try new things. Having conversations with adults help to develop the children's cognitive skills, such as thinking, vocabulary and memory. Children like to talk about their day to adults, who have time and interest to listen. In addition, children observe adults and mirror their acts, while adopting behavioural patterns and social skills. Playing with children the same age keeps its importance at this age. The same play can keep going day by day, but the roles and content can change. A child gets new friends from playgrounds, kindergarten and pre-school. Beside playing, child can learn the skill of riding a bike, ice-skating and hopscotch. (Kuopion kaupunki 2013.) A five-year-old can be restless and emotionally volatile. Although a child can seem bigger by appearance, they still need the support and sensitivity of an adult. A child might have some bursts of anger at this age. (Mannerheimin lastensuojeluliitto 2013d, 4.)

The milestones in gross motor development in the age of five to six are for example being able to skip the alternate feet, maintaining balance while walking on a line and sliding and swinging in the playground. In the contrary, fine motor movements in this age include the skill to play ball games, thread a needle and sew big stitches. However, children this age are not highly skilled to use a pencil. Using a pencil happens by using the whole body; the tongue is moving and the arm and back are involved in the drawing motion. (Boyd & Bee 2015, 174-175.)

A child of age 5 to 6 enjoys the company of adults and other children. Friends are very important and at this age and a child could already have very close friends of their own. A child could also experience their first crush. Children this age have their social skills at a stage, where they can negotiate things, be flexible and address their emotions into words. However, sometimes they might need the help of adults in coping with emotions. Friends' opinions have more importance to a child considering what is acceptable and what is not. (Mannerheimin lastensuojeluliitto 2018.)

In Erikson's theory of psychosocial development, a child develops psychosocially further in the play age, in which the development crisis ends in either initiative or guilt. The child aged 4 to 6 is eager to thrive and conquer new things. Erikson stated that the challenge for the child is to learn the balance between initiative and guilt. Erikson believed that the crucial goal to achieve is the development of conscience. Conscience develops when a child starts to detach from their parents while growing to become a unique individual. (Siegler et al. 2017, 377; Jantunen et al. 2019, 52-53.)

A five-year-old can bend words and knows the basics of forming sentences. The expressions of time, place, and location, the quality of objects by colour, shape, and size and storytelling develop in this age. (Nurmi et al. 2014, 46.) Children this age know approximately two thousand words and can speak fluently and is understandable. They use mental images when generalizing what they have learned and know the difference between reality and imagination. A child could be interested in written language and try to write the first syllables of their own name. Furthermore, children can focus longer to different stories and narratives. (Mannerheimin lastensuojeluliitto 2013d, 10-13.) A six-year-old uses over 10 000 words in their language. A child adopts the basics of interaction with others and it shows by skills in answering questions and speaking in turns. (Nurmi et al. 2014, 46.)

A five-year-old does not need the continuous presence of their caregivers while playing. Children have more initiative to gather equipment for different games and play types and deciding where to play, and this should be encouraged by caregivers. In this way children's play can last longer and it gives a challenge for the children's imagination. To an observing adult, five-year-olds' playing can seem irrelevant and confusing whereas to children it can seem very exciting and interesting. (Jantunen et al. 2019, 72.) A six-year-old develop their planning skills. Previously a child has not thought about their actions as they do now in this age. Real work, like cleaning, can come a part of playing, as well as writing and reading. Getting closer to the school-age, the significance of rules intensifies. Rules must be followed precisely. (Jantunen et al. 2019, 72-73.) In Sheridan's observations, children this age are more interested in pretend play and furthermore in complicated indoor and outdoor activities which require practice, playing by the rules and sense of fair play. Personal preferences become more visible in this age, when children tend to choose the activity, where to play, who to play with and what equipment is needed. Gender differences in the play types are evident but despite that, in the pre-school playgrounds the teachers usually organize mixed group activities. (Sheridan et al. 2011, 44-45.) (Table 1.)

TABLE 1. Children's development and play during years 0 to 6.

	<b>0-12 months</b>	<b>1-2-years</b>	<b>3-4-years</b>	<b>5-6-years</b>
Physical and motor skills	Reflex functions disappear Lift head, roll, sit, crawl Brings hands to mouth Able to pick up an object	Pull to stand, walk without support Manipulate objects Climb, start to run Build tower out of 6 cubes Kick a ball Physical growth steadier	Walk/run, jump Construct, draw, making shapes Learn how to ski, ice-skate, swim, ride a bike	Skipping alternate feet Sliding, swinging Ball games
Psychosocial	Attachment relationship Interaction with environment Trust vs mistrust (Erikson)	Can sense another person's feelings Autonomy vs shame/doubt (Erikson)	Likes to be around peers Cooperation skills Initiative vs guilt (Erikson)	Enjoys the company of others Friendships Needs adult's help with emotions
Cognitive	Sensorimotor period 0-2-years (Piaget) From reflexes to imitative behaviour Sense of self develops Object permanence	Memory skills develop Egocentrism Express by language and mental imagery	Preoperational stage 2-7-years (Piaget) Asking questions Abstract thinking Logical connections	Using mental images Learns the difference between reality and imaginary Can focus on longer stories
Language	Babbling and recognizing sounds First words	Single word communication Simple complete sentences	Telling stories Uses verbs, adjectives, substantives and pronouns Word and rhyme games	Can bend words Knows over 10 000 words Interest in written language
Play	Object play Unoccupied behaviour Solitary play Sensorimotor play	Play alongside another Onlooker behaviour Parallel play Pretend play Exercise play	Associate play Cooperative play Rough- and tumble play Sociodramatic play Games with rules	More initiative in play Importance of rules Complicated indoor and outdoor activities



## 4 CHILDREN'S PLAY IN HOSPITAL

### 4.1 The effects of the hospitalisation on the child

It is widely known by the healthcare professionals that the admission to the hospital and the hospitalisation itself can create mixed feelings in children. However, many recent studies describe difficult and negative feelings towards hospital in-patient stay by many children and teenagers. Child hospitalisation has a significant impact on the little patient's psychological and mental health. This is because aspects of child's life such as daily routines, social life and favourite activities are missing during the hospital period. (Depianti et al. 2014, 1118.)

Hospitalisation requires children to adapt to new environment and new, unknown people such as healthcare professionals. The new environment itself can be a frightening experience. It can become a frightening experience especially for the toddlers and pre-schoolers. Children, especially those aged under 6 years old, can have a particular difficulty in adapting and dealing with the new and strange situations. This can include medical and nursing procedures, use of technological resources and listening to the medical professionals speaking with their parents. This kind of exposure can cause feelings of fear, anxiety, and insecurity. (Depianti et al. 2014, 1118.) Smell of the hospital, although in many cases not noted by the staff, can have a huge impact on the children (Hubbuck 2009, 165). In addition, the child's imagination can add to the fears. The hospital, especially in the minds of the younger children, can be a place where new and somewhat scary things can happen. This kind of thought is largely evident with children who do not have an experience with hospital. (Hubbuck 2009, 166.) The new volume of staff – people the child does not know - is also frightening. When children are exposed to a new environment, it is often the amount of new people that can cause fear and anxiety. Adults are more used to meeting new people in the strange environment. They have their own coping mechanisms and new relationships are not a big problem in many cases. Children, however, especially toddlers and pre-schoolers are not yet able to easily make new relationships and might suffer from separation anxiety. Taking into consideration that in hospital, on many occasions, the young patient can be looked after by 5-10 nurses during his or her hospital stay. Children who are exposed to that many new people and are already feeling anxious about the hospital and illness can become withdrawn and fearful of making new relationships. This is especially evident in children who undergo frequent hospital admissions. (Hubbuck 2009, 169-173.)

As well as that the nature of the disease or condition the child presents with, for example cancer, can limit some of the activities which the child can do which only adds to the negative feelings the child can feel. Children, who are chronically ill, are at an increased risk of frequent hospital visits, whether inpatient or outpatient. Many chronically ill children feel frustration, anger and fear. This is because in many cases children feel that their childhood is taken away by treatments, hospital visits and tiredness of being chronically ill. (Nijhof et al. 2018, 424.) Oftentimes, the frustration can stem from the decreased amount of socialisation and play during the time of chronic illness treatment, as well as strains on the family relationships. Research has shown that children who are admitted to hospital more often are at an enormous disadvantage with regard to socialisation and the development of social skills. Children who play less, socialise less – which in turn means that they do not make as many friends as healthy children would make. What's more, children with more complex

healthcare needs may face bullying and prejudice from their healthy peers and therefore might experience struggling and awkwardness when trying to get themselves involved in normal social activities. (Nijhof et al. 2018, 425.) This can prove to be a difficulty for a child, who is frequently admitted to hospital, as the needs for socialisation and friendships are not met (Bishop 2010, 21). Also, chronic diseases can affect children's coping with the treatment and frequent hospital visits. Many children depend on frequent outpatient visits, which in toddler and preschool years can create issues in development. (Shields 2001, 31.)

Hospitalisation, especially in the case of frequent hospital admissions, can have a devastating effect on the families of the young patients (Nijhof et al. 2018, 425). The family of the child is an important social interaction especially in the early years (Bishop 2010, 21). The parents of the sick children undergo stressful and anxious experiences during the child's inpatient care. Lack of time, consistent worry about their child's health and lack of meeting own needs during the child's hospitalisation can create feelings of distress and even often detachment from the rest of the family matters. (Zarei & Negarandeh 2021, 76-77.) In addition, the family routines and daily living can be disturbed which in addition can further the negative effect on the family. The lack of possible interactions during the hospitalisation periods, can also strain the relationships between the sick child and their siblings. In many cases, children feel like a burden to the family due to their disease and this can create a negative atmosphere in the household. (Flynn, Kliems, Saoji, Svenson & Cox 2018, e7.) Moreover, parents feel like they need to become the decision makers during the child's hospitalisation time and during the illness time which creates negative consequences for the child's well-being (Coyne & Gallagher 2011, 2337; Flynn et al. 2018, e6).

In many cases, the admission of a child can leave them with feeling of complete dependency on the adults. Children who are often hospitalised are sometimes unheard and the decisions about things like treatments, play times, mealtimes and when to go to sleep are made by their parents or the hospital staff such as nurses and physicians. (Livesley & Long 2013, 1300; Coyne & Gallagher 2011, 2337.) The study by Livesley and Long (2013, 1300-1302) presented the children's views on hospital admission in a nephrology unit. The participants voiced their concerns that one of the main challenges they have in the hospital is that the nursing staff is in control of the most basic things such as the patient's daily rhythm – as to where to turn the lights off, when to close the playroom or when are the medication times. This makes the children feel powerless and without any saying on their own activities of daily living (Livesley & Long 2013, 1301). Similarly, in some cases the child might have a feeling that he or she has a very little say over the decisions about the treatments and is not informed fully on what the treatment might involve (Hubbuck 2009, 194). The feelings of lack of control or not understanding of the treatment regime options can create anxiety and nervousness, especially among the children. Children, especially the older ones, who already understand the treatment, voice their need to be included in the decision making about their lives. (Livesley and Long 2013, 1300-1301; Coyne and Gallagher 2011, 2337.) However, nowadays, one can see an increasing involvement of children into their treatment plan and decisions. This is due to the UN Convention on the Rights of the Child (1990) which states that the child can have a say in the decisions about own life matters. The efforts to increase children's experience in the hospital and make them more independent through the means of play have been seen in the history. (Tonkin 2014, 44.)

## 4.2 The significance of play in healthcare settings

The concept of the benefits play became an important aspect of paediatric medicine, as many healthcare professionals and researchers noted how beneficial play can be for the child in the hospital (Gulyurtlu et al. 2020; Depianti et al. 2014). Play was noted by the researchers during the early 1900s after the famous research study. The first publication about the need of play in the healthcare settings, "A two-year-old goes to hospital" (Bowbly & Robertson 1952, 11), proved to be instrumental in the understanding on how the child's well-being can rapidly downturn during the stay in the hospital. Nevertheless, despite further campaigns in order to improve the children's experience in the hospital, the first organisations guiding the play evolution in the hospital care didn't emerge until 1970s (Tonkin 2014, 44). In Finland, the first time that the play concept was introduced in Finland was through Bärbi Luther's work in Helsinki Surgical Hospital. Luther and researchers realised that the negative feelings, anxiety and lack of play have led to significant delay in children's development and mental health issues in the paediatric patients. The play development project was introduced to improve the experience in the paediatric units and lasted about 10 years. (Hiitola 2000, 16–19.)

In 1988, during the conference in Netherlands, an idea was formed to create a charter which stated 10 rights of sick children. It highlighted the need for children to continue playing during their hospital admission. The growth of the interest in the charter introduced the European Association for Sick Children in Hospital (EACH) on the rights of children in the hospital. The further co-operation between various children's organizations as well as the ratification of the UN Convention on Children rights in Europe during 1989 to late 1990s led to further acceptance of the charter. This helped to improve the understanding of the benefits of play for the paediatric patients. (European Association for Sick Children in Hospital, s.a.)

There are multiple studies showing how beneficial play can be in the hospital settings. In 2020, Gulyurtlu et al., conducted a study on the impact of the play for hospitalised children. One of the main benefits of play, as per the authors of the study, was that play can help the admitted children to have a more positive experience while in the hospital. (Gulyurtlu et al. 2020, 1-3.) The results of the study highlighted that play could make the hospital stay more "fun" and bearable for children. While children are occupied with different activities and recreation, the time spent in hospital is not perceived long. As mentioned earlier, children can often look resentfully towards hospitalisation. Often, it is because the strange, new environment, new people and odd procedures can create feelings of anxiety and fear. (Depianti et al. 2014, 1121.) However, many researchers agree that play can relieve those negative emotions. Taking control over the decisions they can possibly take (for example whether they want a red or white bandage) can reduce the overall feelings of loss and fear about the medical or nursing procedures. (Tonkin 2014, 136.)

Play can also help the children to understand and explore the treatments they undergo. Through the play medical staff can explain the medical procedure and what it involves. (Tonkin 2014, 137.) Children, even though considered minors, are entitled to have an understanding about what is happening to them. EACH charter highlights the importance of the right of the children to know what their treatment involves at all times. (EACH 2016, 11.) When children have a general understanding of the procedure, the incidence of fear tantrums are less evident (Tonkin 2014, 138). With a planned

treatment the play can help the young patients process what is going to happen and give them a feeling of autonomy in the new, strange hospital setting. This is especially important as in many cases, children can feel a loss of free will while undergoing hospitalisation or treatment. (Gulyurtlu et al. 2020, 7.) They would be able to make choices without being overwhelmed with too much of medical jargon and in their own understanding. Therefore, through the understanding of the treatment and increased feeling of autonomy, the negative feelings about the hospitalisations can be decreased. (Tonkin 2014, 136.)

Play is proven to be an excellent therapy skill if a child is going through a traumatic event while in hospital. It can encourage the development of courage and resilience in children and young people. It can be a form of dealing with a traumatic situation or the change in the daily activities while in the hospital. (Gulyurtlu et al. 2020, 6.) As a tool of communication, play can be strategic in understanding on what the child is feeling. This is because, children often express themselves by playing. This form of non-verbal communication can be easily understood by the peers; however, it is often missed by adults. (Hubbuck 2009, 162.) Through play children can express their feelings and emotions such as fear, panic, calmness, readiness. It is therefore important for the nurses to recognize these signs early enough and intervene in an appropriate way. For example, in Tonkin (2014, 162), a case study presented a boy who was helped with play to regain the feeling of positivity and regaining control over a stressful situation in the hospital. It took him a while to overcome the fear at first, however, guidance from a healthcare practitioner and the effective use of play brought a good outcome during the hospital procedure. From this one can learn on how important the play is in the everyday work life of nurses and realise that although adults understand the possible challenges ahead, children are not fully understanding that a simple procedure such as venepuncture can be safe. The adult engagement is somehow vital in preventing the negative emotions and fear. (Tonkin 2014, 154.)

Play also helps the children in maintaining social connections while being in the hospital. Often, children with for example chronic illness, are at a particular risk of losing contact with their peers due to prolonged hospital stay. Due to this cause, many children can be at risk of loneliness and isolation which in turn can lead into mental health issues. The relationships with friends and in particular family members are strained during the long hospitalisation. Hospitalisation can be a very difficult time for the family and involve feelings of fear and concern. This in turn can put a strain on the family relationships. (Zarei and Negarandeh 2021, e74.) Play can help both the young patients and their peers and family members to maintain and strengthen the relationship and help to cope with the fear of unknown which can be enormous (Tonkin 2014, 76-91).

Play is also known to increase the resilience in the hospitalised children. Nurses and other healthcare practitioners must be mindful that children can experience the hospital as an anxious and a scary place. Childhood experiences can impact the future abilities to cope with particular events. Adults understand the idea that sometimes it's possible to encounter new, uncomfortable situations. Children do not have that understanding yet at a young age. (Tonkin 2014, 153-154.) Resilience is, nevertheless, an important skill when dealing with stressful situations in the inpatient care. When the young patients and their families are experiencing stressful and traumatic situation during the

hospital care and medical interventions, families showing resilience have better chance of better recovery and less negative hospitalisation. (Tonkin 2014, 158.) Play can be used beneficially to help the children cope in the healthcare setting. Children who are enduring a medical or surgical experiences have better chances of coping when play interventions is included in their care plans. (Tonkin 2014, 155.) For example, children who deal with pain find that playing can also lower the anxiety associated with pain. Children, even though, are faced with pain and negative emotions associated with it want to play to cope psychologically with their situation. This in some way can be seen as a sign of resilience. (Tonkin 2014, Kuttner 2010, 158.)

#### 4.3 Challenges in playfulness in the hospital setting

Healthcare workers, however, can find many difficulties while applying play in the care of their young patients (Depianti et al. 2014, 1125). In their research, Depianti et al. (2014) stated that while nurses are aware of the benefits of using play in the nursing interventions in the paediatric nursing, there are multiple obstacles which they face each day. The main difficulties listed were lack of toys and resources to play in the hospital, behavioural problems of the young patients and the nurses' lack of time (Depianti et al. 2014, 1121).

The behavioural problems of the children in the paediatric unit proved to be a major obstacle for the nurses trying to play with children. Children can become anxious and worried during the hospitalisation period. They do not show the willingness to play or engage in the observation of playfulness. In some cases, children can react with tears, fear and crying while the nursing staff is trying to engage in playing and in communicating. This is particularly visible in the pre-school age where children's emotion and the cognitive behaviour may not yet be developed. This in turn causes such negative feelings towards the nursing staff's attempt to play. (Depianti et al. 2014, 1122-1123.)

Lack of resources in the hospital can be an issue when it comes to the play intervention in nursing. In many cases the hospital ward may not be equipped with certain items which contribute to the play in the unit. The unit may lack toys, arts and crafts items or children-friendly books. In addition, in many cases children may not be able to bring own toys if the infection control risk is high. Toy and play area disinfection may be time-consuming and costly for the hospital. This only adds to the nurses' difficulties in playing with the kids. (Depianti et al. 2014, 1121-1122.) One must also consider the fact that if the unit has a playroom, it can be condensed with the number of paediatric patients. With the insufficient space for the children, it can be challenging for the nurses to play with the small patients. (Livesley & Long 2013, 1300.)

Another barrier of implementing play in the nursing practice is the lack of time. Nurses can be under a huge pressure of carrying out the nursing interventions in a fast manner. This leaves them with little time for other kind of interactions with the paediatric patients. (Depianti et al. 2014, 1124.) In some cases, the work overload and the staff shortages make the nurses forget about how important play can be as a separate nursing intervention. This also includes the lack of time for toy disinfection in many cases by the nurses.

It is important to realise that using play in paediatric nursing is of a huge significance (Tonkin 2014, 158). Nurses play an important role in supporting play as the coping mechanism, yet the difficulty of providing the new play intervention can be challenging for the nurses (Depianti et al. 2014, 1121).

## 5 THE PURPOSE AND AIMS OF THE STUDY

The purpose of this study was to find out useful and recent play interventions used in paediatric nursing. The aim is to contribute to the work of paediatric nurses by deepening the knowledge about play interventions in the paediatric nursing area.

To achieve the purpose, the authors have set research questions, which are following:

1. How is play used in the nursing interventions in paediatric nursing?
2. What are the useful play interventions in paediatric nursing?

## 6 IMPLEMENTATION

### 6.1 Literature review

The method chosen for this study is a literature review. The authors found the need of improving the knowledge about the possible play interventions. Thus, choosing the literature review made it possible to form a full picture about the evidence-based play interventions in paediatric nursing. The literature review can be defined as a method of research which puts in context what is already known about the subject. In reviewing the literature, one aims to identify the previous literature and research findings on the topic of interest. To achieve this several steps are taken. Firstly, the aim and purpose of the research must be identified. The next step is to search the literature. This can include making inclusion and exclusion criteria, selecting specific years of the possible articles, and opting for specialist research databases. Following this step, the literature must be chosen and appraised. A comprehensive analysis of the literature and the information provided can be of a benefit. Through the synthesis of the information, the knowledge from the literature is combined and in the last step of conclusion, this information is summarised. (Parahoo 2014, 110-129.)

The purposes of the literature review are many. The literature review is mainly used to increase the understanding of a specific topic. A literature review can discover a phenomenon, while also increasing the comprehension of the topic. The literature review must take on the present study and place it into the outline of what is already known about the issue. It should also, if possible, describe the issues and variables related to the research problem which would be investigated. In reviewing the information given from the past and current research, the researcher can help to understand the already known aspects of the specific topic of interest. The research review can also inform the researchers of charters available, and on how others used them. This can help the researcher to build on and propose new frameworks and interventions which can benefit the professional groups. (Parahoo 2014, 115-120.) (Figure 1.)

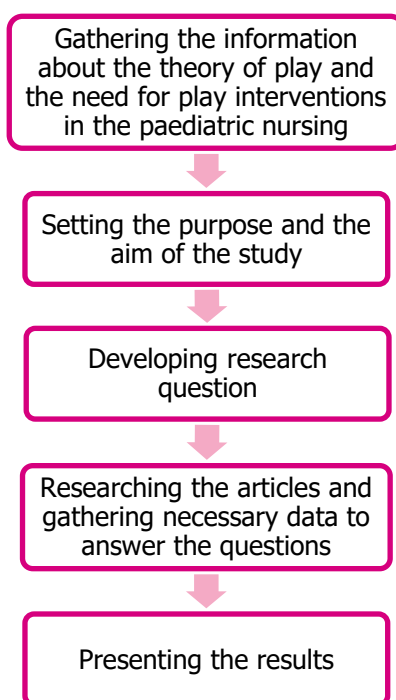


FIGURE 1. Steps of the literature review process



## 6.2 Data collection

Literature searching and data collection is a creative but a systematic and long process. Regularly it can be a repetitive process that may need few attempts in order to get the best, objective results. Data collection is following a logical, well-thought process. It is important that the review is transparent. This means that it can be repeated by another researcher, centred on the clear information about the research process and the result. It needs to be carefully considered and fit the review question. While the literature is researched, the researcher must be using specificity and sensitivity in a balanced way. This means that even though a large number of articles are found, many might be found irrelevant. This is why the research process might be repeated again. During the research, one must consider whether the database fits the criteria and how many articles should be reviewed. This is included in one of the key areas of the research. (Pursell & McCrae 2020, 31, 43.) The authors retrieved the literature from electronic databases. The data bases included in the research are Cinahl Complete, PubMed and Science Direct. Cinahl Complete, published by EBSCO, is a database with nursing and allied health literature (Pursell & McCrae 2020, 35). PubMed is a freely available version of MEDLINE and it contains biomedical and allied health literature. It also has papers published ahead of the print which may not yet be published in MEDLINE, open access journals and some academic books. (Pursell & McCrae 2020, 35.) Science Direct offers peer-reviewed journals, exploring technical, medical and scientific subject matters (Elsevier, s.a.).

An expert librarian from The Opus Library in Savonia University of Applied Sciences was contacted in order to find applicable search terms for this review. The selected search words of "play", "playfulness", "Pediatric nursing", "Children nursing", "anxiety", "hospitalisation", "toys" and "Paediatrics" alongside the BOOLEAN operators were used during the search. The inclusion and exclusion criteria were set for this study to get more accurate search results. (Table 2.) Inclusion criteria included articles written in English language, research articles, peer-reviewed and free full-text and abstract available. The other inclusion criteria were that the selected articles were published between 2016 and 2022 to obtain up-to-date findings from the academic literature. Furthermore, the authors chose to include articles that considered only children 0-6 years-of-age.

In Cinahl complete, a combination of "Pediatric nursing AND play OR playthings" were used. Initial number of results was 8140 articles. After adding inclusion criteria including full-text, English language and years 2016-2022, 341 articles came up. 7 articles were chosen by the title and after reading abstracts and full-texts, 6 articles were read, and 3 articles (n=3) were chosen for the literature review.

In PubMed, a combination of "toys" AND "Children" AND "Pediatric" AND "anxiety" were used. Initially 106 articles were scanned. After applying the inclusion criteria filters, 26 articles were left. From these 5 were selected for further review. After reading the abstracts 2 articles were selected for further examination. After reading full text, 2 articles (n=2) were left to the review.

In Science Direct, a combination of "Play Interventions" AND "Pediatric" AND "Anxiety" was firstly used. Initially, 16,862 results came. After applying all the necessary inclusion criteria 877 research articles came. These were scanned by the titles and 15 were selected upon for further examination. Upon reading the abstracts, seven articles were chosen. After the further process only one article

(n=1) was chosen from this search. A second combination included "Play" AND "Hospital" AND "Anxiety" AND "Children" 46,217 results were first found. After applying all necessary inclusion criteria 1,243 results were seen. The articles were scanned through by titles and 45 were selected for further review. Upon reading the abstract, 15 were selected to read a full text. Conclusively, 3 articles were selected for the literature review (n=3). Summing up, ScienceDirect provided four (n=4) research articles for the review. (Figure 2.)

The countries where the studies were done were Brazil (n=4), China (n=2), Turkey (n=1), Denmark (n=1) and Iran (n=1). Quantitative research approach was used in five articles, qualitative research method was used in three articles and mixed methods research with both quantitative and qualitative method was used in one article.

TABLE 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> <li>Written in English</li> </ul>	<ul style="list-style-type: none"> <li>Written in other language than English</li> </ul>
<ul style="list-style-type: none"> <li>Research articles</li> </ul>	<ul style="list-style-type: none"> <li>Not research articles</li> </ul>
<ul style="list-style-type: none"> <li>Peer-reviewed</li> </ul>	<ul style="list-style-type: none"> <li>Not peer-reviewed</li> </ul>
<ul style="list-style-type: none"> <li>Full free text and abstract available</li> </ul>	<ul style="list-style-type: none"> <li>No full free text or abstract available</li> </ul>
<ul style="list-style-type: none"> <li>Published between 2016-2022</li> </ul>	<ul style="list-style-type: none"> <li>Articles published before 2016</li> </ul>
<ul style="list-style-type: none"> <li>Ages 0-6</li> </ul>	<ul style="list-style-type: none"> <li>Articles including the age of 7 and above</li> </ul>

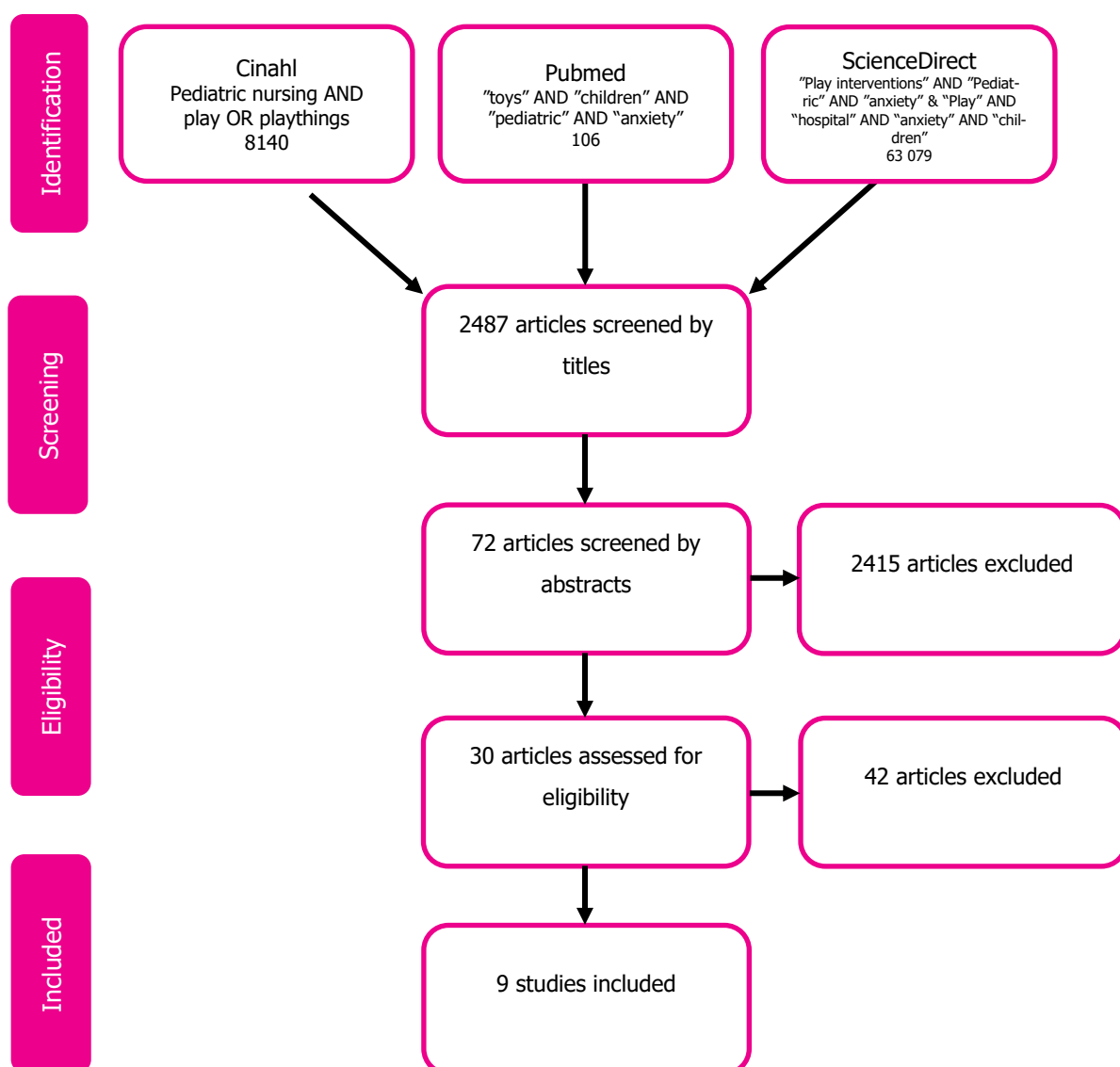


FIGURE 2. Article selection process

### 6.3 Content analysis

Content analysis is a qualitative method of analysing the data. It can be proven to be useful to the researcher as it allows to evaluate content sensitive data, as well as analysing many kinds of sets of open data. (Kyngäs, Mikkonen & Kääriäinen 2020, 11.) Content analysis is mainly used to describe human experiences and feelings, as well as perspectives. Through content analysis, the useful research can be analysed in a systematic and objective way. This means that the researcher can explore different ways the concepts of the study are related. Content analysis can be divided into two sub-categories: inductive and deductive. (Kyngäs et al. 2020, 13-14.)

The authors of the study used the inductive content analysis as the analysis method. Inductive content analysis allows the researchers to look at the data and form themes in more of a loose manner (Kyngäs et al. 2020, 14). The main steps of the inductive content analysis could be listed as follows: data reduction, grouping of data and organising and forming categories, concepts and themes. (Figure 3.) This can be done through observing and analysing the data for relationships and variations in the acquired data. (Kyngäs et al. 2020, 14.) The authors identified the main themes and categories through the thorough analysis of the research topics. The key themes of the study helped the authors to classify the original expressions and thus reducing the data. The original expressions were read repeatedly until the authors were certain about the data reduction. Later, these were grouped into the sub-categories. Once the subcategories were identified, they were grouped into generic categories. The generic categories were then generated to main categories. In total, the authors extracted 31 original expressions (n=31), 15 subcategories (n=15), 10 generic categories (n=10) and 2 main categories (n=2).

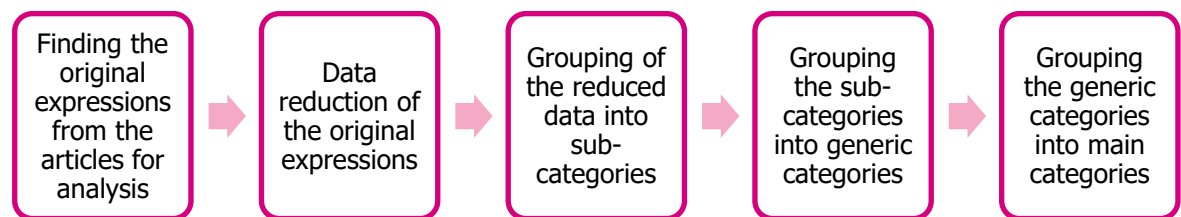


FIGURE 3. The process of content analysis

TABLE 3. Examples of content analysis

Original expression	Data reduction	Sub-category	Generic Category	Main Category
<p>“She is really afraid, Doctor! What can we do to make her [the patient] feel better [because of the needle]? Her puppet goes with her.” The children commonly used a wheelchair to take the dolls to the exam room, mostly because it went fast.”</p>	<ul style="list-style-type: none"> <li>- Anxiety is felt by the children</li> <li>- Dolls help the children to adapt and reduce the anxiety</li> </ul>	Therapeutic dolls	Therapeutic toys	Useful play interventions in paediatric nursing
<p>“When taking responsibility for “medicating” the doll during the TP session, the children transferred to the inanimate object– the doll – their own feelings during the first drug administration and adopted the role of a health professional. In doing so, the children were better able to assimilate the procedure, which was previously unknown and terrifying in their imaginations.”</p>	<ul style="list-style-type: none"> <li>- The doll became a psychological measure for children</li> <li>- Anxiety was significantly reduced after playing with the doll</li> </ul>			

## 7 RESULTS

The results show a variety of successful play interventions in nursing. The main forms of play used in paediatric nursing, as per the reviewed studies, could be grouped as follows: preparatory play, therapeutic play, distraction play and medical play. The studies pointed out the most useful play interventions such as: therapeutic toys, technology, interactive games, art therapy, group therapy, gamification and personalisation.

### 7.1 Forms of play in paediatric nursing interventions

**Preparation play** This form of hospital play is done through dramatizing and preparing the child for a specific procedure. The procedure might be explained with the little patient by using therapeutic play, therapeutic toys or technology. The child might be able to use some of the equipment themselves. (Anselmo Dantas, Medeiros da Nobrega, Gomes Pimenta & Collet 2016, 456; Li, Kwan Chung, Ho & Kwok 2016, 7-8; Soares da Silva 2016 et al., 64-66; da Cunha Salomão Barroso et al. 2020, 3-6; Clausen et al. 2021, 276-277; Kostak, Kutman & Semerci 2021, 420; Marques da Rosa et al. 2022, 3-6.)

**Therapeutic play** Therapeutic play was found to be a significant preparation intervention which could reduce the anxiety in children undergoing both smaller and larger procedures (Anselmo Dantas et al. 2016, 456; Li et al. 2016, 7-8; Soares da Silva et al. 2016, 64-66; da Cunha Salomão Barroso et al. 2020, 3-6). Therapeutic play interventions were mainly used by the staff as means of preparing the children for upcoming procedures. This involved showing the children, in a short play session, how the procedure such as venepuncture happens. (Anselmo et al. 2016, 460.) Most studies which based the therapeutic play as their main research intervention found them to be effective. Salomao Barroso et al. (2020, 4-6) noticed that therapeutic play can encourage the children to discover the procedure and so, give them a feeling of safety. A reflected finding was shown in Anselmo Dantas et al. (2016, 456) where the therapeutic play was used before intravenous drug administration. The results showed better behaviour in the intervention group where children were given the chance to participate therapeutic play (Anselmo et al. 2016, 456-457). Li et al. (2016, 7-8) results showed that the preparation play can calm the child before the surgical procedure.

**Distraction play** or focus redirection play was stated to be a useful playful intervention in supporting the subjective wellbeing of hospitalised children with cancer in a Brazilian study done by Marques da Rosa et al. (2022, 4-6). Redirection play was recommended to be used during procedures which are thought to be invasive or negative. The results showed that playful interventions reduce the children's possible pain during procedures and time seemed go faster. Furthermore, the anxiety levels of children were decreased. Suggestions on distractive methods were for example letting children draw while administering medication or using warm gel in some small body parts as sensory stimulus. (Marques da Rosa et al. 2022, 4-6.)

In a Chinese study by Liu et al. (2018, 439-442) transporting preschool children from the ward to the operational room in a children's toy car was found to be a useful distraction method to alleviate preoperative anxiety compared to midazolam premedication and transport on a hospital gurney. A

similar finding was made in the study done by Clausen et al. (2021, 276-278), where it was seen in the results that playing games on a tablet served as a good distraction method prior surgery.

In a study conducted by Soares da Silva et al. (2016, 63-66) the researchers studied the efficacy of therapeutic toys during venepuncture procedures to reduce the negative emotions of children. Therapeutic toys appeared to be significant distraction tools during venepunctures when after procedure, a child remained playing happily with the research team, as they would not remember any pain or the venepuncture procedure happening (Soares da Silva et al. 2016, 63-66).

**Medical play** Medical play is used in several research studies as means of letting the hospitalised children to express their emotions and feelings about the hospital stay and medical procedures (Li et al. 2016, 4). Medical play was used in Li et al. (2016, 4) where the intervention consisted of games, dancing, playing with toys and singing. Children were able to express their feelings about the procedures. A mirrored result was also shown in Soares da Silva et al. (2016, 64-66) where children expressed their feeling through the use of play and a therapeutic doll. (Figure 4.)

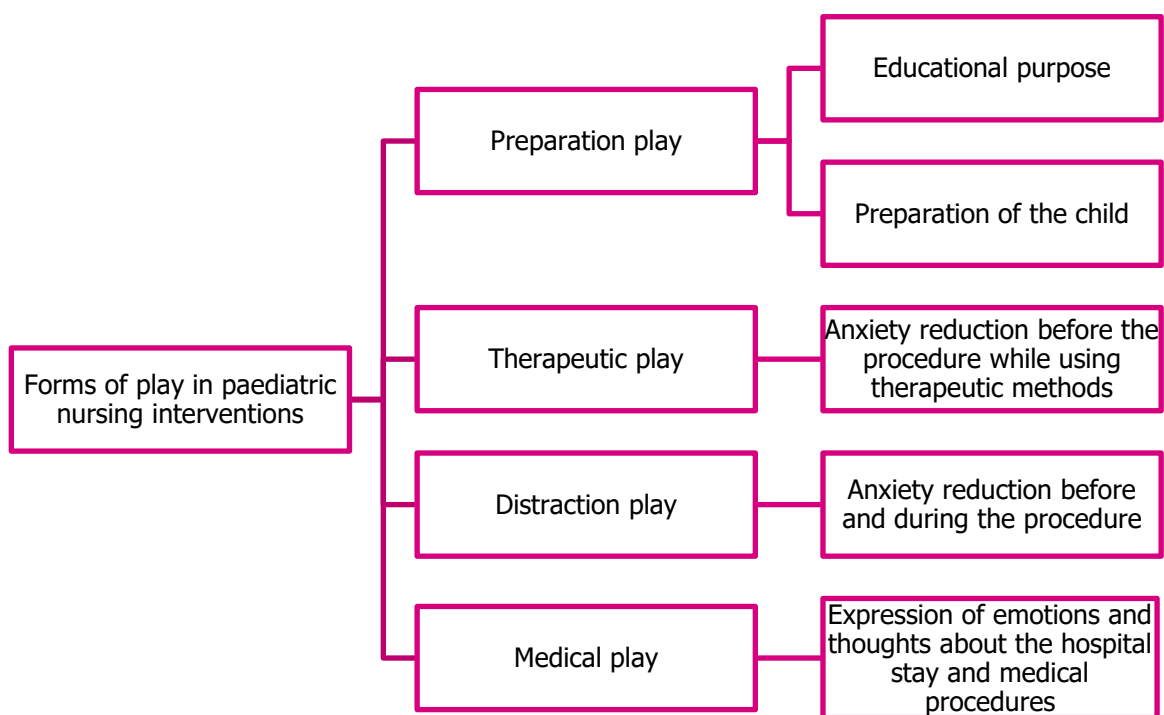


FIGURE 4. Forms of play in paediatric nursing interventions

## 7.2 Useful play interventions in paediatric nursing

**Therapeutic toys** Therapeutic toys serve a therapeutic role for the children and can also be involved in therapeutic play. The selected research articles show that therapeutic toys play an active role in dramatizing and portraying the procedure which the children are about to undergo. (Anselmo Dantas, Medeiros da Nobrega, Gomes Pimenta and Collet 2016, 456-457; Soares da Silva et al. 2016, 64-66; da Cunha Salomão Barroso et al. 2020, 4-6; Kostak et al. 2021, 420; Marques da Rosa

et al. 2022, 3-6.) All of the studies showed an increased participant satisfaction with the use of therapeutic toys. Marques da Rosa et al. (2022, 3-6) used therapeutic toys such as figures to represent main imaging and laboratory examinations. The results showed that this intervention helped the children to personalise their experience and therefore, foster the paediatric patients' well-being during the hospital stay (Marques da Rosa et al. 2022, 6). A similar set of positive behavioural changes of children was presented in the research done by Kostak et al. (2021, 420-421), where children were presented with finger puppet play prior to surgical procedure. It was shown that this type of play prior the surgery reduces the fear of surgery (Kostak et al. 2021, 420). da Cunha Salomão Barroso et al. (2020, 4-6) and Anselmo Dantas et al. (2016, 460-462) used a doll in the therapeutic play session as the means of preparation for the child. In both cases the results showed a positive influence of dramatizing the doll in order to reduce the anxiety levels prior the procedure.

Nevertheless, therapeutic toys can also be used to let the children express their feelings about the hospital stay and procedures. In da Cunha Salomão Barroso et al. (2020, 4-6), the dramatization of a doll and the handling of the hospital equipment have also allowed the young participants of the study to express their thoughts and feelings about the venepuncture.

**Technology** Tablet use is also listed as method of reducing the anxiety in children prior a surgical procedure. One Danish study done by Clausen et al. (2021, 276-277) used tablet games during the preparation stage before the surgery. The results showed that the children who played a game on the tablet had less postoperative anxiety than those in the control group who did not receive tablet games. This proves that technology can be used in order to prepare the child before the surgery. (Clausen et al. 2021, 276-277.) A similar guideline was presented in the study of Marques da Rosa et al. (2022, 4-6) proposed the use of technology such as video games as a form of teaching children about the disease and as a form of a distraction.

**Interactive games** Interactive games was one of the interventions mentioned by the Iranian study done by Forouzandeh, Drees, Forouzandeh and Daeakhshandeh (2020, 3-5). In their study, children who participated in interactive games such as puzzles and board games in small groups have had a reduced anxiety in the pre- and post-operative stages (Forouzandeh et al. 2020, 3-5).

Interactive games were also used in the same study as a form of play which promoted the development of the child while in the hospital (Li et al. 2016, 4). In both cases the use of interactive games improved the hospital stay time for the participants and allowed the children to express their emotions. In addition, providing interesting games and toys, such as sensory toys and sand play, during the procedures provided as great distraction techniques to children from medical procedures. (Li et al. 2016, 4-7).

**Art therapy** Group art therapy also came up in the study of Forouzandeh et al. (2020, 3-5). In the comparison between interactive play and art therapy, the study showed that the group which received art therapy as the play intervention had statistically lower post operative anxiety than in the group of interactive play and in the control group (Forouzandeh et al. 2020, 3-4). Art therapy can also be used as a way for children to express their feelings about the therapy. This kind of use was



seen in the research study of Li et al. (2016, 4), where art therapy was used as one of the medical play interventions for the children to express their feelings and emotions about the hospital stay.

**Gamification** Another important play intervention found in the study done by Marques da Rosa et al (2022, 5-6) was the gamification of medical exams for children to increase their motivation to complete exams and develop bonds with the care team. The relationships between care staff and little patient might be developed through humour and turning procedures and treatments into playing could reduce the possible anxiety about the procedures. For successfully going through the procedures, the patients could receive reinforcements, like stickers or playing a specific video game, to celebrate facing their challenges and stages of treatment. It was also stated that gamification can increase the patients' feeling of empowerment to make through their disease. (Marques da Rosa et al. 2022, 5-6.)

**Personalisation** Furthermore, in Marques da Rosa et al. (2022, 5-6) personalisation was introduced as a method of changing the children's' image of medical equipment and objects to fit more in their personalities and preferences in life outside of the hospital. This could be achieved by changes in the hospital room environment, such as colour of the walls or fantasizing the hospital equipment to stand for something more familiar. By personalisation, children might get the feeling of normalcy. (Marques da Rosa et al. 2022, 5-6.) (Figure 5.)

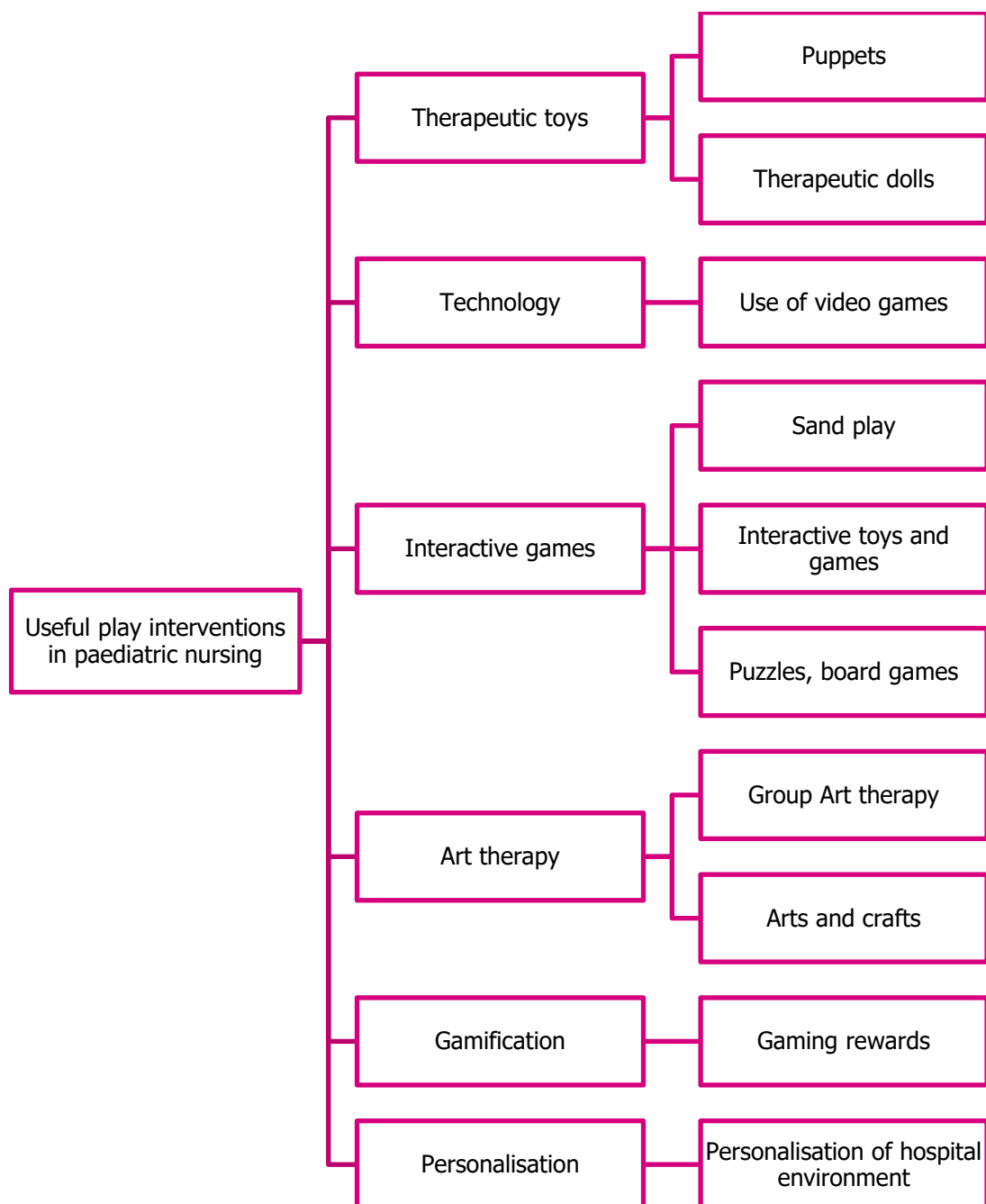


FIGURE 5. Useful play interventions in paediatric nursing

## 8 CONCLUSION

### 8.1 Consideration on results

This study explored the useful methods of play interventions for children aged 0-6 years old, which could benefit the nursing staff dealing with paediatric patients. Paediatric play interventions are applicable in both medical and surgical settings, as well as in imaging and blood test procedures (Anselmo Dantas et al. 2016, 456-457; Soares da Silva et al. 2016, 64-66; Liu et al. 2018, 439-442; da Cunha Salomão Barroso et al. 2020, 4-6; Forouzandeh et al. 2020, 3-5; Clausen et al. 2021, 276-277; Kostak et al. 2021, 420; Marques da Rosa et al. 2022, 6.) The types of play in the hospital were listed as follows: preparation play, distraction play, therapeutic play and medical play. The preparation play was mainly used as a way to prepare and familiarise the child with the oncoming procedure. The main techniques behind this kind of play were the use of therapeutic toys or technology. The main purpose of the preparation play were mainly preparation and education roles (Anselmo Dantas et al. 2016, 456; Li et al. 2016, 7-8; Soares da Silva 2016 et al., 64-66; da Cunha Salomão Barroso et al. 2020, 3-6; Clausen et al. 2021, 276-277; Kostak et al. 2021, 420; Marques da Rosa et al. 2022, 3-6.)

Another type of play which was observable throughout the research studies was the therapeutic play. Therapeutic play was mainly used in the study as a successful method for reducing children's anxiety before the procedures. Therapeutic play was used both individually and within groups. Through therapeutic play children could discover the procedure in a more entertaining ways and thus the fear and anxiety were mostly lowered during and after the procedure. (Anselmo Dantas et al. 2016, 456-457; Soares da Silva et al. 2016, 64-66; da Cunha Salomão Barroso et al. 2020, 4-6; Kostak et al. 2021, 420; Marques da Rosa et al. 2022, 3-6.) The distraction play has had a very similar function in the studies; however, it was mainly used during the procedure to distract the children from thinking about the unpleasant situations. Research showed that distraction play was a successful tool for the healthcare staff in reducing the negative emotions during the procedures. (Liu et al. 2018, 439-442; Clausen et al. 2021, 276-278; Marques da Rosa et al. 2022, 4-6.) In contrast, medical play had a psychological role. It was mainly used to let the children express their feelings about both the hospital stay and the procedures themselves. (Li et al. 2016, 4; Soares da Silva et al. 2016, 64-66.)

The useful play interventions were found to be the use of therapeutic toys, technology, interactive games, art therapy, gamification and personalisation. (Anselmo Dantas et al. 2016, 456-457; Li et al. 2016, 4; Soares da Silva et al. 2016, 64-66; Liu et al. 2018, 439-442; da Cunha Salomão Barroso et al. 2020, 4-6; Forouzandeh et al. 2020, 3-5; Clausen et al. 2021, 276-277; Kostak et al. 2021, 420; Marques da Rosa et al. 2022, 6.) The use of therapeutic toys was one of the most eminent interventions in the articles. Therapeutic toys were used in many ways, depending on the context of the study interventions. However, the use of therapeutic dolls was the most prominent way to familiarise the children with the possible procedures. (Anselmo Dantas et al. 2016, 456-457; Soares da Silva et al. 2016, 64-66; da Cunha Salomão Barroso et al. 2020, 4-6.) Use of therapeutic toys was also a helpful intervention to let the kids to express their feelings (da Cunha Salomão Barroso et al. 2020, 4-6).

The use of technology also proved to be a practical intervention for preparation and distraction play. The use of tablets and games, proved to be lowering the anxiety levels significantly both before and during the procedures. (Clausen et al. 2021, 276-277; Marques da Rosa et al. 2022, 6.) As well as that, interactive games helped significantly in both preparatory and medical play. Interventions such as board games puzzles and group play can help the children to get rid of the boredom, along with reducing the pre-operation anxiety levels. (Li et al. 2016, 4; Forouzandeh et al. 2020, 3-5.) Art therapy was also mentioned to have similar effects to interactive games. When done in group, art therapy can be a successful tool of therapeutic play, as well as medical play. (Li et al. 2016, 4; Forouzandeh et al. 2020, 3-5.)

The personalisation and gamification interventions were also mentioned in one of the studies. Personalisation intervention seek to lower the children's feel of hospital environment and medical equipment. This could include making the bigger equipment, the hospital walls and rooms more colourful and more appealing through the use of familiar images on these. Gamification introduced making each step of the medical treatment as a game in which child can receive prize once the step is done. (Marques da Rosa et al. 2022, 5-6.)

Overall, based on the results of the study, play interventions were proved to be successful in minimising the child's anxiety and fear of procedures. It also helped to make the hospital environment more child friendly. The research showed that there are many new and helpful play interventions which can help the nurses working with kids to improve the quality of care and make the hospital experience more relaxed for the younger children.

## 8.2 Ethicalness and reliability

This thesis literature review was carried out according to the ethical principles of the research Each of the steps was executed as carefully as it was possible. In a thorough research process, the research itself should follow specific list of principles which include accuracy, integrity and diligence in the research, writing, presenting and evaluating the results. Also it is vital to make sure that the search for and the acquirement of the research materials is ethical and sustainable. (Finnish Advisory Board on Research Integrity TENK 2012, 30-31.) The authors of this study used only well-trusted and professional databases. The result was that nine (n=9) research articles were selected. All were peer-reviewed and published within the time frame agreed (2016-2022). During the whole research, the authors openly talked about the research process and the criteria for the research for the review. The results were presented attentively and thoroughly without any biases. This means that they were put accordingly to what the data was showing. The original authors were marked by the referencing system given by the Savonia University of Applied Sciences.

The ethical guidelines were followed from The Rectors' Conference of Finnish University of Applied Sciences Arene (2020, 3-12). The authors had no conflict of interest during the thesis. The authors had the knowledge about the ethical guidelines of conducting the research and about the topic of thesis itself. The permissions and agreements needed in this thesis project were the agreement on thesis project and supervision, and the thesis permission application. The agreement on thesis project and supervision has been signed with the supervising teacher and the collaboration partner at

Kuopio University Hospital. The thesis permission application has been requested from the head nurse of the department. The permission from the Kuopio University Hospital for collaboration was given following the assessment by the head nurse of the paediatric department.

Regarding the reliability of this study, authors sought to follow the steps thoroughly. However, few points affected the reliability. The main issue which authors noted in the article research stage was the limited number of articles which included exactly participants aged 0-6. This caused difficulties in the research of relevant articles. Therefore, to resolve such issues, the authors decided to select the research articles, in which the participants age criteria included desired age of 0-6 but also could include older children. Of course, one must point that the studies with full-text availability for the students at Savonia University of Applied Sciences were used by the authors, which could affect the reliability of the study. Conversely, this means that some data might have not been available for the study, thus, some valid studies, without full text, could not be selected. Among nine (n=9) articles, were 4 were from Brazil (n=4), two from China (n=2), Turkey (n=1), Denmark (n=1) and Iran (n=1). Therefore, the study is taking into consideration the applicability of the research to most parts of the world. However, although the authors wished to also use more local studies, the research has not found such.

### 8.3 Professional growth

Implementing a literature review was familiar to one of the authors, which helped in starting the study process. However, despite the previous experience in literature review, it needed some adjustment to learn the Finnish regulations in writing a literature review. The research tools and referencing were different and the steps of the research process were more complex compared to the previous guidelines the author had used. For both authors, this literature review added to the knowledge about academic writing and research process. Furthermore, the authors deepened their knowledge in critical thinking and analysing data.

Searching the information for the theoretical framework took considerable time in this study. The theory search began in autumn and ended in January. There were some moments where the motivation was lower due to the amount of academic work, but authors getting along well and the interesting thesis subject contributed to the issue. The authors got familiar with the steps of content analysis well before the implementation and it resulted in a fluent and simple analysis process.

Throughout the thesis process, the authors implemented team work together as a pair and with the thesis supervisor. Working as a team developed both authors' problem-solving skills as well as planning and flexibility skills. The authors think that the thesis process went all in all well considering time schedules and plans that were made. The meetings considering thesis work were held regularly to keep the thesis process well running. The authors were holding memos of the meetings to keep track of the discussions taken during the meetings as well as dividing the tasks in the research process. In addition, receiving feedback from the supervising teacher developed the authors' sense of mercifulness and understanding of beneficial constructive feedback.

The authors discovered the need of developing a further knowledge about play used in the nursing interventions in paediatric nursing and the need was met through this thesis process. Learning

about play and children's development was especially beneficial to the authors aiming to work in the paediatric field of nursing in the future. The authors learned a lot of practical examples of play that can be used for example as distraction methods or as methods to decrease the anxiety of the little patients in hospital settings.

#### 8.4 Applicability and development ideas

The purpose of this study was to find out the useful and recent play interventions used in the paediatric field of nursing. The study results showed that play interventions reduced the anxiety children were experiencing and helped to cope with the overall hospital experience. The introduced forms of play and useful play interventions can be used in hospital settings, depending on the material, like therapeutic toys and technology, and nurses' time available. To mention, COVID-19 pandemic can have an impact on the applicability of play interventions in the means of the possibility to arrange interactive playing with shared hospital toys and play spaces with other children.

The topic of play and the use of it in nursing was discovered in the paediatric nursing course in the nursing programme, however authors felt the need to deepen their knowledge about the specific and useful interventions. The need arose from the fact that both authors have the wish to work in paediatric nursing in the future. The authors feel that they have developed both understanding and knowledge on what kind of play they can use in the nursing interventions in the younger children.

The authors wished to include more local studies in the review however, this was not possible. A study based on for example Scandinavian research could also make a good impact in developing the topic. The feelings of the young patients as well as their parents are as important as the play interventions themselves. The authors tried to include as many studies as possible, however, the authors have also introduced the quantitative research which showed solely hard data. Acknowledging the stated, the authors were satisfied to say that all the studies showed content in the participants regarding the listed play interventions and thus, helping to learn about the useful play methods in nursing care. Nevertheless, the study covering exclusively the feelings, observations and thoughts about the use of play interventions would be recommended to receive more holistic outlook on what would be beneficial for children. The authors also understand that this research contributes to the care of younger children aged 0-6 years old. This is due to the inclusion criteria set to reduce the data smoothly. Conversely, the research on possible and useful play interventions would be also interesting in the school-aged children and teenagers.

The recommendations based on the data apply to all the nursing staff working with paediatric patients. The authors recommend that the use of distraction through therapeutic toys and technology can improve and ease the simple medical procedures such as venepuncture. As well as that, through therapeutic and preparatory play, the children who already have better understanding of the situation can overcome their fear of the hospital environment, procedures and staff. Another recommendation would be for the nursing staff to set a specific time in a week, if possible, a time for children to have interactive and group play sessions to ease the hospital stay and improve the socialisation during the hospitalisation. Introduction of a nurse designed especially for these play sessions can also have a benefit in allowing the children to express themselves both through games and art.

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## APPENDIX 1. PRESENTATION OF SELECTED STUDIES

## Appendix 1. Presentation of the selected articles

The list is presented in the alphabetical order of authors' surnames.

	<b>Authors, title, country and published year</b>	<b>Purpose</b>	<b>Participants</b>	<b>Study design</b>	<b>Main findings</b>
1	Anselmo Dantas, Flaviana, Medeiros de Nobrega, Vanessa, Gomes Pimenta, Erika, Acioli & Collet, Neusa  Use of therapeutic play during intravenous drug administration in children: exploratory study.  Brazil 2016	To identify the reactions of children during IV administration before and after the instructional therapeutic play technique To analyse the child's companion's perceptions regarding the technique's influence on the child's preparation to undergo IV drug administration.	Children ages 4-8 years old with peripheral venous access for IV medication, accompanied by primary care giver who witnessed at least two IV drug administration during present hospitalisation (n=9)	Exploratory study	The therapeutic play before the procedure increased the feelings of calmness, better acceptance of IV medication. It also helped the children to become familiar with the procedure.
2	Clausen, Nicola, Madsen, Dorthe, Rosenkilde, Charlotte, Hasfeldt-Hansen, Dorthe, Larsen, Line & Hansen, Tom  The use of tablet computers to reduce preoperative anxiety in children before anesthesia: A Randomised Controlled Study.  Denmark 2021	To compare POA in children who used the offered tablet games while waiting for elective surgery vs those who underwent normal preparatory procedures.	Children 3-6 years old undergoing elective minor surgery (n=60)	Randomised control trial.	The use of age-appropriate tablet games reduced the level of anxiety during the anaesthesia time
3	da Cunha Salomão Barroso, Maria, Clara, Fernandes Vieira dos Santos, Ravini, dos Santos, Vieira dos Santos, Antonio Eduardo, Rodrigues Nunes, Michelle Darezzo & Fonseca Lucas, Eduardo Alexander Júlio Cesar	To understand the children's awareness of venepuncture and how therapeutic toy can add to the venepuncture procedure.	Paediatric patients aged between 4-11 years old (n=7)	Qualitative study	Through the use of the therapeutic toy as well as dramatizing the doll the children were able to learn about the hospital procedures and clear any misconceptions about the procedures.

	Children's perception of venipuncture through therapeutic toy. Brazil 2020				
4	Forouzandeh. Nasrin, Drees, Fatemeh, Forouzandeh, Marzueh and & Darakshandeh, Somayeh  The effect of interactive games compared to painting on preoperative anxiety in Iranian children: A randomized clinical trial.  Iran 2020	To determine the effectiveness of interactive games and painting on anxiety in hospitalised children.	Children aged 3-12 years old undergoing elective surgery (n= 172)	Randomised control trial	Painting and interactive games were reducing the pre-operative anxiety.
5	Kostak, Melahat, Akgun, Kutman, Gulsev & Smerci, Reziye  The effectiveness of finger puppet play in reducing fear of surgery in children undergoing elective surgery: A randomised controlled trial.  Turkey 2020	To investigate the effect of finger puppet play with parental involvement on fear of surgery in children undergoing elective minor surgery	Children between 5-10 years (n =70)	Randomised control trial	The use of finger puppet play proved to be successful in reducing the fear scores in the intervention group
6	Li, William, Kwan Chung, Joyce Oi, Ho, Ka Yan & Kwok, Chau, Blondi Ming  Play Interventions to reduce anxiety and negative emotions in hospitalised children.  China 2016	To test the effectiveness of play interventions to reduce anxiety and negative emotions in hospitalised children.	Children aged 3-12 years old (n=304)	Quasi-experimental study	The hospital play interventions have a significant effect in reducing children's anxiety during the hospital stay. Main play categories in the study were medical play, preparation play, distraction play and developmental play.
7	Liu, Peipei, Sun, Yu, Wu, Chi, Xu, W, Zhang, Ruidong, Zheng Jijian, Huang, Yue, Chen, Y, Zhang, Mazhong & Wu, Juzheng  The effectiveness of transport in a toy car for reducing preoperative anxiety in pre-school children: a randomised controlled prospective trial.	To determine whether transport of a paediatric inpatient in a children's ride-on toy car has an effect on perioperative levels of anxiety compared with transport on a hospital gurney with or without oral midazolam premedication	Children 2-5 years old with congenital heart disease undergoing first surgical correction (n=108)	Randomised controlled prospective study	The transport in the car significantly lowered the anxiety levels in the intervention group vs the control group which was transported to the operating theatre by hospital trolley.

	China 2018				
8	<p>Marques da Rosa, Valentina, Daudt, Francielle, Miletto Tonetto, Brust-Renck, Priscilla, Phipps Reed, Jillian &amp; Sanson Fogliatto, Flavion</p> <p>Playful interventions to promote the subjective wellbeing of pediatric cancer inpatients during laboratory and imaging exams: A qualitative study.</p> <p>Brazil 2022</p>	To understand the experience of hospitalised children with objects and equipment	Children 4-8 years old (n=6)	Qualitative study	The use of technology and play can help to allow to positive reinforcement. It also helps to educate the child about cancer and the treatment.
9	<p>Soares da Silva, Jose, Ronaldo, Leite Pizzoli, Lourdes, Margareth, da Prado Amorim, Amanda, Regina, Tais Pinheiros, Fernanda, Chippari Romanini, Giovanna, Gomes da Silva, Jack, Joanete, Shirley &amp; Alves, Silvana</p> <p>Using Therapeutic Toys to Facilitate Venepuncture Procedure in Preschool Children.</p> <p>Brazil 2016</p>	To study the efficacy of therapeutic toys during venepuncture procedures in order to minimise children's negative feelings	Children aged 3-6 years old undergoing venepuncture (n=10)	Descriptive, exploratory qualitative study	Therapeutic toys and dolls showed 100% success rate in changing children's initial negative reactions to venepuncture and increase co-operation