

Observations of Preschoolers' Health Care Play

Masters Thesis

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Abstract

The focus of this study was to extend health care play opportunities and observe the play created by the children in a child care setting. Medical play is an intervention commonly observed in health care settings where professionals such as child life specialists use play as a healing modality. Although play-based child care programs offer opportunities for the development of a variety of play scenarios with children, the documentation of health care play specifically has been minimal. In order to address this gap in the literature, the researcher undertook a research study using participant observation to support the introduction and documentation of health care play activities. The researcher attended a local child care centre classroom for 10 consecutive days to introduce and observe the interactions of children as they engaged in free play. Parents of 28 preschoolers gave consent for their children to participate in the interactions with the researcher. Field notes, photographs and Learning Stories comprised the data collected. A thematic analysis was completed; 22 basic themes and six organizing themes comprised the global theme, Health Care Play. Additionally, interviews of two early childhood educators resulted in the identification of a single global theme, Perceptions of Health Care Play (Attride-Sterling, 2001). Results indicate the children engaged readily with a range of health care materials and demonstrated each category of medical play as described by McCue (1988).

Future research should continue to initiate health care related play environments for children to increase their exposure to medical information, further promoting diverse play opportunities.

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Chapter 1

Introduction

Play for preschool aged children ranges from simple carefree activities to more complex, structured play, all carried out voluntarily and in a pleasurable manner. Sluss (2005) explained how opportunities for play could provide a safe place for risk taking as children test their limits, explore new environments and continually strengthen old skills while developing new ones. Play is of importance to this study, as it is through the activity of play in trusted environments that children have the opportunities to imitate others by safely re-creating real life experiences. Through these re-created life experiences children explore both familiar and unfamiliar situations.

Medical play, typically associated with play in hospitals and other health care environments, has been demonstrated to provide opportunities to incorporate health experiences in play. The concept of medical play is likely most familiar to pediatric child care providers. However, as suggested by Jesse, Wilson, & Morgan (2000), opportunities to benefit from this form of play also can be provided in the early childhood setting. McCue (1988) described four categories of medical play: role rehearsal/ role reversal, medical fantasy, indirect medical play, and medically related art. She further explained that medical play should be made available to any child who may enjoy or need it as positive and comprehensive play can occur with even the most basic medical equipment (e.g. cotton balls, tongue depressors, band-aids). This self-directed play may provide opportunities to reduce stress, resolve problems or practice coping behaviours.

Applying these components of medical play in a non-medical institution, such as a child care center, creates a form of health care play. Exposure to health care materials during

children's play may demonstrate not only their understanding of health care topics through their use of these materials and associated language, but also provide new opportunities to explore, create and discover outside of a health care environment. Enriching children's play areas with materials typically associated with hospitals, doctor appointments, illness or injury may help to make health care materials more familiar. This may help to remedy misconceptions about health care materials through children's play interactions. Health care play is a hands-on learning opportunity that can engage the five senses and build from existing knowledge to create more complex comprehensions of health care topics.

Play does not receive a lot of attention in health care professional journals. Bolig (2005) stated that little research on play in health care has been conducted since the 1980s. A review of literature indicates a gap in the research with regard to health care play as it is not often included in traditional play literature. Although visuals of medical and health care play are evident throughout various media sites (e.g., Pinterest) health care play has yet to be documented in the early childhood literature. The majority of research focuses on medical play opportunities for those children undergoing medical treatment, such as during a hospital stay or while visiting a doctor's office.

A review of the literature demonstrated the benefits and opportunities play provides for children, yet health care play does not receive the same attention. The purpose of this study was to extend health care play opportunities into a child care centre and observe the play created by the children outside of the medical environment. The research was conducted using multiple methods of documentation to capture the children's play. One means being in the form of Learning Stories that I will share with the early childhood community.

Fundamental to my project is the idea that play can provide an essential role in the everyday life of a child. Through free play children engage in dramatic play and make sense of the world around them. A participant observation approach was used in this research to focus on the many ways children bring experiences, knowledge and personality into their everyday free play activities. This method allowed for the researcher to experience the environment in which the children play through direct observation of play interactions inspired by each child's experience of, knowledge of and perspectives towards health care play materials.

The study used a participant observation design and included multiple documentation strategies to create Learning Stories of the play experiences. Kline (2008) explained observation and documentation to be vital to the early child care classroom, providing insight into how young children develop and respond to opportunities and obstacles they encounter. This information; allows the researcher to build rapport with individual children, which is essential in a child care classroom. Learning Stories provide a visual component of children's learning by displaying interactions between child/child, child/adult and child/materials, including photographs, teacher notes, transcripts and artifacts from one child or a group of children.

Personal reflection

Thinking about play not only floods my mind with the most memorable experiences growing up, but contributes to my adult life as well. My form of play is dance; it is something for which I have always had a passion. As a young girl, I would pretend I was a famous dancer and perform routines with my best friend and sister in front of our parents and neighbours. Throughout high school and university I took dance lessons, performed at recitals, festivals and even competitions. Dance allows me to express myself through music and movement; it helps me to clear my mind, handle emotions and continually challenge myself.

I have always known that my goal in life was to obtain a profession that involved working with children. After graduating high school, I went to university, each year returning home to my summer campground job. One of my roles was children's play program organizer. I was responsible for planning daily craft ideas throughout the week along with both indoor and outdoor activities during weekends. Because I found this job rewarding, I wanted to gain more experience working with children and began volunteering at the Izaak Walton Killam Health Centre. I worked in the Child Life Department play room where I experienced a nurturing environment comprised of many different forms of play. I viewed the Child Life Workers as role models. Their passion for their work was evident in the environment they provided to the most inspirational children I have met in my life.

My mother is also a large contributing factor to my desire to work with children. I grew up under the influence of a woman who committed her life to caring for others. She became a stay-at-home mom after my sister was born up until I became a teenager. She then; worked as a child care provider for a local family with three young children. I was influenced by her role not only in my life but the role I watched her play in other children's lives as well and wanted to do something similar.

Experiencing children's play during my summer job, volunteer work and my own childhood all influenced me to pursue a thesis exploring a form of play. I have witnessed children leaving behind daily struggles as they enter a world they create. The creativity and emotions that they express during these times vary between children and are always interesting. I want to work with children, promoting the importance of play as it provides a safe means of education and expression for children dealing with life experiences and allows them to experience the most essential role of a child, and that is, simply being a child.

While it has been a challenging process to pull this all together, I thoroughly enjoyed engaging with the children and child care centre staff. I had the opportunity of not only bringing health care play to the children's environment, but be able to observe and portray their experiences and knowledge surrounding health and health care demonstrated through their play activities. I have learned so much in the process which has served to only deepen my belief in the importance and necessity of health care related play for children. I would love the opportunity to share with more children the experience and opportunities this play provides.

Chapter 2

Literature Review

Early in life, children are exposed to experiences of illness, injury and health issues. Most of the experiences are minor in nature and care is provided within the family. As well, children are exposed to formal health care settings such as the doctor's office or perhaps a hospital setting. Because many children experience out of home care, the child care environment is also a setting where children receive care for minor illness and injury. Children learn about health and illness, comfort and care through all of these experiences. In health care settings children may have opportunities to engage in what is known as medical play. This form of play has been documented in health care literature but is rarely found in early childhood publications. However, Jessee, Wilson, and Morgan (2000) have described a theoretical framework for the inclusion of medical play in early childhood classrooms. Since then, evidence of medical play is not easily found in child care literature. Instead, descriptions and evidence appear on the Internet in Pinterest, blogs, textbooks and webpages. This study is designed to initiate a foundation for research on health care play in child care settings from which future documentation of health care play in early child care settings may be established.

The purpose of this study was to investigate children's play with the use of health care materials in a child care setting. A framework for this study was developed with an approach to documentation known as Learning Stories. Learning Stories are a method for assessing children's learning in early childhood programmes and is the assessment tool of choice in New Zealand (Nyland & Alfayes, 2012). For the purpose of this study, the interest in documenting children is to make visible their interest, involvement, persistence, expressions and contributions to play with the health care materials in their typical child care setting. In addition to illustrating

children's prior knowledge and learning, the documentation process of Learning Stories engages children in ways that also may contribute to their health literacy.

Play-Based Research

Health care researchers have explored children's understanding of health and illness through studies designed around the exploration of medical equipment. The following discussion focuses on different play-based research in regard to medical equipment, knowledge and exposure all carried out in health care environments with children of differing medical backgrounds and experiences.

MacGrath and Huff (2001) documented children's knowledge and responses to medical equipment through non-directive play interviews. Fifteen healthy preschool children were included in the study, three of whom had direct personal medical experiences. They found that children with no prior exposure to intensive hospital treatments accepted medical equipment into their play without hesitation. Children actively used the medical equipment by applying bandages to themselves, putting on gloves, filling medicine cups with water and even making their own games, for example syringes were used to squirt water to feed the plants. They displayed an unsophisticated understanding of the equipment's purpose, but a joyful interest in trying to figure it out. This is demonstrated through statements the children made such as, "It helps, it helps... it fixes things. They're fun!" (McGrath & Huff, 2001, p.455). Children typically sought out information about the equipment from the adults, or confidently invented explanations for its use.

The amount of time children spent engaging in medial play related to prior medical exposure and experiences. MacGrath and Huff (2001) stated that the children with no direct

medical exposure spent the longest time in medical play and had positive attitudes towards the equipment. Children with indirect medical experiences had a limited readiness to play, along with fearful descriptions of the purposes of medical equipment. Descriptions ranged from simply associating the doctor's office as a place where their sibling cried to more detailed explanations. One child who had a family member with cancer spontaneously offered explanations in regards to surgery by stating, "Yeah and you get a very sharp knife when the people are asleep. You get a very sharp knife and cut their tummy. That's how they get the things out (MacGrath & Huff, 2001, p.458)." There were only two children who did not engage in any medical play. One of these children had a direct experience with surgery, and the other an indirect experience with a sibling who had surgery. Medical knowledge and prior experiences are demonstrated to have an effect on children's attitudes towards play equipment.

The study conducted by MacGrath and Huff (2001) mainly involved children with limited or no prior medical exposure with a willingness and interest towards the medical materials introduced into their play. With regard to medical knowledge, nine of the children; referred to the medical equipment as "the hospital stuff" or "doctor stuff" during play. Eleven children stated having no knowledge about the medical equipment, but approached and handled it with a curiosity and a desire to play just as they did with the other non-medical toys offered.

Interest in learning about medical equipment and willingness to incorporate it into play seems to be altered by children's prior medical exposure. Garipey and Howe (2003) conducted a study examining play behaviours between children with leukaemia, and a control group of healthy children. Six weeks of play observations of the two groups revealed distinct play patterns regardless of the types of toys, medical versus non-medical. Children diagnosed with leukaemia demonstrated more non-play behaviours. Non-play behaviours were categorized as unoccupied

behaviours, not actively participating in a play behaviour, reading, examining objects or moving between two activities. Play patterns showed these children engaged in the same play activities and behaviours week after week. The healthy children demonstrated a diverse range of play activities, choosing new activities throughout the weeks. These children also engaged in frequent parallel and group play whereas children with leukaemia were more solitary in their play. The researchers suggested play to be beneficial when children are provided with access to similar toys and activities on a regular basis, as well as when an adult to assist the child making sense of these activities is present.

Burns-Nader (2011) investigated how different activities can benefit children going to a doctor. Seventy-two children between the ages of 7-12 years old were randomly assigned to one of four different activities prior to seeing a doctor. The first group was a medical play group in which children were given a doll and authentic medical equipment, the second group was shown a medical information video of a taped medical play session, the third group was a typical play session involving non-medical equipment and finally, the control group viewed a video on the safari life.

Burns-Nader (2011) considered the benefits of the activities to be based on the results of levels of fear and anxiety expressed by the children pre- and post- doctor procedures. The results indicated no benefits to the medical play as it was the least effective of all categories in reducing anxiety and fears during doctor's procedures. This raises questions about the potential function of medical play and the influence of particular factors on the play. The author suggested that it is not the hands-on manipulation during play that benefits children during doctor visits, but rather the exposure of medical information. Burns-Nader suggests the best means of providing for the

psychosocial needs of patients is through an informational video of a child engaging in medical play and sharing information about medical equipment.

All three studies have indicated that the experiences children have had with hospitals and doctor's offices significantly impact their attitudes toward medical play. MacGrath and Huff (2001) concluded that children with direct medical experiences also had fearful descriptions and explanations of medical materials. Gariepy and Howe (2003) further supported this as the children with leukaemia had no desire to engage in medical play when given free play time. Burns-Nader (2011) implied that children have fear and procedure distress while engaging in medical play compared to the other activities in a medical office. I think it is important to consider that forty-two percent of the participants in this study had previously been hospitalized, which further demonstrates the impact experience has on play activities. Children with limited to no prior medical experiences were observed to engage in medical play confidently and curiously, just as they do with other forms of play. These studies also suggest the benefits a caregiver or adult could provide during medical play periods by answering questions, further encouraging medical play as a safe learning experience. This would help to avoid misconceptions that may be causing children to avoid medical play opportunities.

In the current study, health care related materials were provided for children's play outside of health care environments to provide an opportunity to observe children's play. This encouraged exploration through play and dialogue used during both solo and group play activities. I observed the play as a free, non-structured, form of play. This allowed children to engage when they were ready and comfortable doing so based on their varied experiences and differing responses to unfamiliar materials, or materials they had been uncomfortable with previously.

Dramatic Play and Medical Play

The majority of research on medical play has been conducted in the health care setting. However, there are additional opportunities to examine health care related play outside the walls of the hospital. Thompson and Snow (2009) reported that research investigating the role of play in pediatric settings has been limited, perhaps due to unfamiliarity with techniques for studying play in the child life community. The following discussion of dramatic play and health care play brings together literature from the disciplines of early childhood and health care to explore children's play.

Pretend play is a part of the young child's world and can be observed in play activities such as dramatic play or role play. Johnson, Christie and Wardle (2005) explained that early in life, symbolic play is evident as children engage in nurturing behaviours, games involving disappearance and reappearance such as hide-and-seek, collecting and gathering, emptying and filling, and other mastery play involving sorting and discrimination. They stated that during the second year of life, pretend play emerges and becomes a social activity as children mature and demonstrate an organization of their play around roles and replication of reality (p. 65). In dramatic play children are able to represent themselves, other meaningful people in their lives, and their own experiences through their play. Often observed through both imaginary and play with props, dramatic play in an early childhood classroom may be supported by specific dramatic play areas (e.g., housekeeping corners) or through themes and plots derived from children's personal interests (e.g., super heroes, pets). Although evidence of dramatic play with a doctor's office and medical props appears in social media sites (e.g., Pinterest) it is not often mentioned in the early childhood literature.

Jessee et al., (2000) emphasized that opportunities to provide health care play in early childhood settings enhances children's positive experiences and allows them to play out negative experiences in a safe and nonthreatening way. The authors described medical play as an opportunity for children to rehearse and express feelings related to a medical experience and when children are given opportunities to engage in dramatic medical play little encouragement is needed. Whether it is a direct or an indirect experience, most children have some sort of medical experience to draw upon.

In a medical setting many factors may influence or alter a child's experience. Jessee et al., (2000) explained the sense of a loss of control children may experience in an unfamiliar environment, possibly expecting a painful experience, sensing distress from their parents and viewing unfamiliar medical materials and machines. This overwhelming experience may cause panic and confusion about why they are there. Preschool aged children think in terms of the immediate spatial and temporal cues that dominate the experience; this prelogical thinking happens between ages 2 and 6. This can lead to misunderstandings in which the child feels as though they did something wrong. This negative feeling then becomes associated with medical themes and demonstrated through their reluctance to participate in medical play.

Researchers have documented associations between dramatic play and conceptual development, thinking and problem solving, and divergent thinking. Schierhold (1994) conducted research on creative dramatics in a classroom and suggested that higher level thinking skills were fostered as children made decisions about characters, plot, and setting in re-enacting their stories. Social skills, language and vocabulary were engaged as children listened to the ideas of others and learned to compromise in group choices. These children also displayed an

increased range of emotional expression that was practiced through voice and body movements used to express the feelings and personalities of their roles. Children create scenarios in their play, helping to make sense of the world around them. Similarly, medical play in the context of the health care environment is generally provided for hospitalized children and typically involves materials that enable children to prepare for medical events.

Medical play is not often included in the traditional play literature. Rather, it is found in the psychosocial health care literature (Bolig, 2005). Medical play is provided in a play context and allows children to become familiarized with medical equipment, supplies and situations they may experience during hospitalization. McCue (1988) highlighted its design as an exploratory activity that, although initiated by an adult, is intended to be child-directed. The goal is to allow the child to gain mastery and control in the medical setting. She explained, that it is not to be confused with psychological preparation; typically medical play is not carried out by an adult demonstrating a procedure or familiarizing a child with equipment. However, learning and emotional expression may occur as the child engages in dramatic or pretend play with the medical materials.

Studies outline how influential materials provided for children during medical play are to the child's emotional and physical response. Providing familiar medical supplies such as Band-Aids, cotton balls, tongue depressors, and other materials that children have come into contact with can encourage health related play (McCue, 1988). Symbolic objects, including health care items, are more likely to elicit unique expressions of feelings and experiences than typical toys and games (Bolig, 2005, p.102). It is important to consider the emotions behind children's medical experiences that may be brought into their play. Providing materials such as stuffed

animals and dolls allows children to carry out medical procedures and possible negative expressions but in a safe, non-threatening manner (Jessee et al., 2000).

These studies raised my awareness of the importance of providing materials that permit negative expressions to be carried out while maintaining safety and a non-threatening (e.g., dolls) environment. Negative expressions may be demonstrated through the use of health care play equipment (e.g., a syringe) used on sensitive body areas (e.g., head or face) allowing children to carry out these emotions safely (Jessee et al, 2000). Bolig (2005) addressed the importance of the presence of adults, as this can help to address any misunderstandings the child may have. Through this expression; children take control of their play and regain the sense of autonomy they may have lost during the medical experience. Medical play provides an environment for children to work out situations and past experiences they may not have understood. These studies highlight the form of play that may take place (e.g., re-enactments, vocabulary, role-play) as the child makes sense of a world. These studies further support the importance of providing children with this unique play environment, which is what my study will do: provide children with medical play in a familiar setting where they will not undergo actual medical procedures.

Categories of Medical Play

Often, medical play is thought of as the child role-playing as a doctor using a stethoscope in a “pretend” medical procedure. This is one version but medical play is diverse and may appear in many categories of play. McCue (1988) described four categories of medical play: role rehearsal/ role reversal, medical fantasy, indirect medical play, and medically related art. She described the most traditional of the medical play categories to be the role rehearsal/ role reversal. This type of play involves children taking on the role of health care professionals and

re-enacting medical events on models such as dolls, puppets or stuffed animals. This play includes real medical equipment, as well as commercially made materials specifically intended for medical play, for example a doctor's kit. In contrast, medical fantasy play involves children's imaginative abilities; medical scenarios are played without medical play equipment as children assign roles to everyday toys.

Indirect medical play is a more structured category (McCue, 1988). It involves opportunities for familiarization, exploration and education related to medical experiences through the use of puzzles and games with a hospital theme. Medical equipment may be used in this play as nonmedical or fantasy props that may help to desensitize children to these materials. Ways in which children interact with these materials are varied. Syringes may be used for water play or intravenous tubing can be used as giant drinking straws. Less structured, medical art provides children with opportunities to express their understanding of, and reactions to, their medical experiences. Art activities range from direct painting and drawing to three-dimensional creations using medical materials; for example, painting with cotton balls and building with tongue depressors.

There are multiple approaches to introducing health care play into an early childhood classroom through these medical play categories and materials. Reading story books is one way to introduce children to health care topics. Facilitating role play, or providing medical props, allows children to express curiosity and engage in this play directly. Each strategy provides a different type of stimulus that can result in multiple opportunities for children to ask questions, share knowledge and explore experiences through dramatic and expressive play.

Children's Concepts of Health and Illness

The way in which children play may be influenced by multiple factors, such as preference of play, prior experiences, materials available as well as their ways of thinking and how they interpret the play and materials around them. Every child is unique. Their preferences and experiences are brought with them to their play. Cognitive development, the level at which children are able to process information, is an important consideration when working with young children. At different ages, children interpret and make sense of the world in different ways. Having an understanding of a child's developmental stage allows a researcher to have a better understanding of the child's concepts and attitudes about health care topics.

Early research on children's understanding of illness and its causation describes their understanding as a developmental progression. Bibace and Walsh (1980) aligned their research with Piaget's cognitive developmental stages and described the progression of children's thinking in terms of a sequence of concepts. Phenomenism refers to a very young child's understanding of illness causation as related to a co-occurrence with a perhaps unrelated experience, e.g., stepping on a bug. Contagion, also, is related to a co-occurrence but with an element of proximity or nearness to a source, e.g., I caught my sister's cold. Children in the concrete-logical stage, 7 – 10 year-olds, may relate illness to internalization, e.g., something entering the body through swallowing or breathing. Additionally, contamination as a cause refers to something external that is bad or harmful leading to illness, e.g., touching something dirty. For these young children, an understanding of underlying bodily functions is not evident as the understanding of sources of illness emerges with development. Subsequent research has focused on children's known facts about illness and how those facts related to an overall understanding of illness. Solomon and Castimatis (1999), for example, found that children know many facts

associated with illness (germs, symptoms). However, they are not able to describe a coordinated system relative to underlying process until a later stage of cognitive development.

Immanent justice, a concept described by Bibace and Walsh, relates to children's ability to understand illness causation. Immanent justice refers to a child indicating that an illness or injury occurs due to, or as a consequence of, misbehaviour. One example, I broke my arm because I was mean to my dog, reveals a level of magical and egocentric thought. Kister and Patterson (1980) explored the concept and found that children who had grasped the concept of contagion provided fewer explanations for illness or injury involving the notion of immanent justice. Later Rushforth (1999) advised that experience plays a role in children's notion of illness and health. She described the tendency of young children to fill in missing details when left to their own resources, therefore, leading to misunderstanding or incomplete knowledge. Current practices respect this notion and advocate for the provision of support and appropriate information for young children as they face health and illness challenges.

Preschool aged children are described often in these studies as having a concrete understanding of illness and health. Children at this age are said to fill in information they may not have. Therefore, providing a play environment that allows them to express these misunderstandings with others may help to clarify situations. With more exposure to medical materials children will not associate these situations and materials solely with negative thoughts or prior medical experiences but will gain positive associations as these materials become a part of their play environments.

Health Care Play

Health care play provides children with the opportunities to become familiar with medical experiences, relationships and equipment in a safe atmosphere while building knowledge of situations they may not be experiencing currently, but may experience in the future. As hospital, or medical, play is associated with these opportunities, it is also important to consider the health care system in which this play occurs. With the benefits of modernized health care, less time in hospitals, and doctor offices, limits the play and exposure to this play. Therefore, the extension of health care play into other child care settings further promotes these opportunities.

Health and illness is a topic loaded with learning opportunities for children. Unfortunately, medical play is not evident outside medical environments; therefore, learning opportunities are lost because children are simply not provided time for health care play. Bolig (2005) suggested play to be one of the most powerful processes by which children regulate their experiences because play allows children to express feelings and regain a sense of control and competency. The impact of changing environment and expectations in health care may reduce opportunities and time for play. She stated that health care settings have changed dramatically over the past 10 years along with perceptions of and requirements of play in these settings. When a child experiencing sickness or injury is taken to hospital or the doctor's office, the environment may be unfamiliar; it may be associated with unpleasant thoughts due to discomfort, misconceptions, or lack of previous experiences. Bolig (2005) reported that children admitted to hospitals often stay for shorter periods of time, are sicker, and are subjected to more intrusive procedures than in the past. This shortened hospital time does not provide children with

sufficient time to become familiarized with the environment, develop rapport with staff or other children.

Burns-Nader (2001) explained that children's emotions associated with a stressful event may be expressed through such items as puppets, games, books, and dolls or figurines. Baker (1996) suggested puppets are an excellent medium for creative dramatics or dramatic play. She considered puppets as anything inanimate that is given life through imaginative movement and claimed that children responded through, and to, them. Placing this 'puppet' in a medical scenario that they control allows children to gain a different perspective than one they may have experienced. Play is a pleasurable activity. When children can act out an experience they may not have understood fully (e.g., getting a needle) but can now connect it to this pleasurable activity, perceptions and negative responses change.

Something as simple and non-invasive as including illness-related children's books in a play environment can provide knowledge and understanding, as well as a way to promote parent-child interactions during health care events. Turner (2006) explained that these types of stories reassure children that during episodes of illness they will be taken care of by others, promoting positive aspects of the illness experience. The types of materials made available in health care play are important, as children may be able to more efficiently re-enact or express their thoughts and feelings.

Developmentally Appropriate Practice (DAP)

Designing a play environment not only involves understanding play itself, but the children and the experiences they encounter during a play period. Developmentally appropriate practice is an approach to the learning environment for children designed based on the most effective ways to provide learning opportunities in relation to brain development. Larkin, Kaplan & Rushton (2010) explained how this system gives recognition to children as social learners and is based on their abilities to develop meaning and knowledge through interactions with their environment. They further described learning and memory to be strongly connected to experienced play emotions, and thus, having a play environment that is both stimulating and safe provides optimal learning opportunities.

The introduction of health care play materials in an early childhood setting provides a unique opportunity to document children's understanding, thinking and learning around health and health care. Guided by principles of DAP, the health care play materials presented to children in this study support opportunities for children to take responsibility for their own learning with open ended materials. Using familiar objects to facilitate connections between the classroom and the real world, opportunities for dialogue with peers and adults can result in young children forming stronger associations with existing understanding through their activity (Rushton & Larkin, 2001). As children engage in hands-on play with health care materials they are free to use sensory inputs, language and motor skills to build upon prior understanding and generalize to broader concepts. Provided with large blocks of time, the freedom to extend play into various classroom activities and frequent opportunities to interact with the health care materials can allow for rich learning experiences.

As mentioned children's responses to health care play may vary based on prior medical experiences. Rushton & Larkin (2010) explained this finding relative to development happens in a predictable direction towards greater complexity. Repeated exposure creates stronger brain connections resulting in quick connections to past experiences with similar situations. The brain network of pathways associated with medical situations has yet to be formed for those children without prior experience. However, experience gained through positive play, curiosity and confidence can influence the development of new pathways. Those children reported to be more hesitant, to engage in medical play, could be explained by this lack of previously exposure with health care materials. The experience of engaging in a supported positive play experiences with medical play materials as suggested by Burns-Nader reflects the beliefs of many health care professionals with an interest in children and play.

Repeated exposure helps reinforce child's understanding (Rushton & Larkin, 2001). One child may immediately pick up a health care material and incorporate it in play, whereas, another child may not choose to play with it until a few days later. Children learn and play at different rates, so it is crucial that they be given repeated opportunities to explore while they play with various materials (band-aids, books, markers, etc.) and have the ability to continually build on the experiences.

Health Literacy

Exposure to medical information not only influences the children's current understanding of health and illness, such as knowing how to apply a bandage or being able to explain what caused their illness, but also provides a stepping stone towards developing health literacy necessary for good health. Health literacy refers to the abilities to access, understand, evaluate

and communicate with health care information across the lifespan. This is necessary as a means of promoting, maintaining and improving health in a variety of settings throughout one's lifetime. Health literacy can be displayed in a variety of forms (e.g. seeking out medical information, understanding dosage directions on a prescription bottle, having a conversation with one's family doctor about health questions and concerns, etc.). Emerging health literacy provides children with the ability to communicate more effectively with nurses and doctors, allowing these professionals to obtain more accurate information about the child's perspectives (Canadian Council on Learning, 2008, p. 7-9). Incorporating health care themes into a child's play exposes children to new information in an environment that is familiar to them, enabling them to develop a better understanding through play and interaction with caring adults.

Learning Stories

The understanding of what is occurring as a child is engaged in play activities is largely improved when the perspectives of the child are given a voice and included in the assessment. One method of providing this opportunity is through the use of Learning Stories. Nyland and Alfarez (2012) described Learning Stories to be narrative accounts of children's learning situations enriched with photographs and artifacts illustrating the experience and proposing the learning that has occurred. The observer (researcher) records and reflects on the children's play with particular attention to the learning dispositions that the child brings to the situation. They further explained learning dispositions to be used as a method of framework which is not only helpful for practitioners, but is interesting for families and supportive for learners. The learning story consist of four parts: the actual story, analysis that highlights the learning dispositions that the child brings to the situation, a discussion of the learning and an exploration of what is next.

A better understanding of what is occurring during play activities is obtained by balancing the power between the child and adult during assessment, by giving the child a voice. Nyald and Alfarez (2012) provided two main reasons why giving children opportunities to contribute to assessment is beneficial. The first involved the setting, when children are able to set and assess their own goals, this setting becomes a rich source for learning. The second reason is that seeking out children's perspectives about their learning allows them to be viewed as the social learners they are with their own opinions and views. The goal when introducing a new idea into a child's environment is to document exactly what is going on while being the least intrusive to the play as possible. This aims at documenting with a more intense focus on children's experiences, memories and thoughts in the course of their daily lives, trying to understand what is going on in the work the children are performing without having pre-set norms or expectations, but to make the learning visible (Kline, 2008).

Study Purpose

This study aimed to extend health care play into a child care centre through the use of health care related materials. Through a participant observational approach, the children's play was documented over a 10-day period. Children's knowledge of health care and medical experiences demonstrated through their play were of interest. Learning Stories were the primary means of documentation utilized as a respectful approach to inquiry with children. Learning dispositions of children were highlighted through the Learning Stories of a play experience (e.g., children taking an interest, being involved, persistence, expression of ideas and feelings and taking responsibility). Additionally, interviews at the end of the observation period were conducted with Early Childcare Educators to obtain their perspectives of this research and experience.

This study takes on a qualitative approach to answer the following questions:

1. How do children play with the health care related materials?
2. In what ways does the children's play change over the experience?
3. What categories of medical play described by McCue (1988) are observed through children's play?
4. What can the Learning Stories tell us about children's prior understandings and new knowledge about health and health care (e.g., health literacy)?

Chapter 3

Method

Multiple documentation techniques were used in the observational study: field notes, photographs, Learning Stories and ECE interviews. The observational period began when the health care play materials were provided in the child care classroom. These included a commercially made doctor's kit (toy) and a cotton doll. On each subsequent day additional health care related materials were added. The observational periods occurred over a 10-day period and were approximately 75 minutes in duration each day.

Participants

A total of 28 children were included in the study between the ages of 3 and 5 years old. Permission was obtained from the families of all children attending the child care centre; no families declined consent for their child's participation in the study. Additionally, informed consent was obtained from the child care centre director and 5 Early Childcare Educators. Two Early Childhood Educators participated in the interview.

Procedure

Recruitment. Approval to conduct the study was obtained from the University Research Ethics Board (UREB) at Mount Saint Vincent University (MSVU). To gain entry into a child care centre and access to the participants, contact was made with the child care centre director. Upon receiving third party consent, the director was provided with an introductory letter and researcher contact information to provide to children's families should they consider participation. As compensation for participating in the study and potentially to increase the number of interested participants, an e-mail of the research thesis, or summary of results was

offered; this would utilize photographs obtained during the observational periods including children's play behaviours (Appendix A, B, C).

Ethical considerations. First, informed consent was obtained from a parent or legal guardian before commencing the research study. Assent from the child was ongoing throughout the process in regard to taking pictures of play behaviours. Second, because the participants were minors, child care centre teachers and/or director were present throughout the entire process. Third, for confidentiality purposes, names of the children remain anonymous in any publications of the study. Fourth, invasion of privacy was minimized by informing the participants and their family members that the objective of the study was to observe children's play behaviours, not to focus on the individual children. Additional precaution was taken with the photographs to ensure no faces of the children were included.

Data Collection

The data recorded during the observational periods of the health care play activities were later developed into Learning Stories. In total, ten Learning Stories were produced, one for each observational period. They were composed through an analysis of the recorded observations and photographs and posted in the children's play area each day. Interviews with the classroom ECEs were completed at the end of the 10- day observation period. The interviews consisted of open ended questions which were audio recorded and later transcribed verbatim.

Observation of children

Documenting children's interests, knowledge and responses towards health care materials was carried out through the form of child observations during free play. Being placed directly in an environment with the subjects of interest helps to gain a better understanding and

perspective of what they are experiencing and how they respond in this environment. Participant observation was used for this study as the researcher actively engaged in the research context during the investigation of child's health care play. Engaging in this role will allow broad, descriptive observations to become more narrowly focused with more descriptive data, and specific understandings of meanings that are viewed through the children's play interactions and dialogue (Depoy & Gitlin, 1998).

Field notes

Field notes were used to track observational period times, the description of the setting, the children and their dialogue, the play activities as well as the researcher's reflections and ideas for future materials as they occurred. These were written during each observational play period and immediately extended with further details, transcribed and transferred over to a laptop computer in a Microsoft Word document preceding the observational period. These notes provided a written account of what was seen, heard, experienced, and thought of during the course of collecting and reflecting on the data in the study (Bogdan & Biklen, 1992). Field notes were chosen as a method of documentation because they provided the opportunity to be very descriptive toward many factors that may influence the area of interest. Field notes were very useful when referring back for descriptive information--both daily at the end of the observational periods in order to construct Learning Stories and look for play themes-- as well as at the end of the 10-day observational period to review the data as a whole.

Photography

In conjunction with participant observation, photographs were taken to supplement the field notes. This provided a means of remembering and studying detail that may have been overlooked if photographic images were not available for reflection (Bogdan & Biklen, 1992). Kline (2008) describes photography as an effective and rich source to expand both the tools of the researcher and the records of observational information collected through its ways of conveying and provoking meaning. The use of photography allows for the construction of new understanding for the researcher and teachers about the process of play.

Photographs were taken to demonstrate play activities and responses to the health care related materials. These photographs exclude faces of the children as it is the play activity that is of interest. The photographs helped display the forms of health care play that took place and contributed to data analysis in the form of Learning Stories. Photographs are often used to make the story accessible to the children, enhancing the potential for revisiting (Nyland & Alfayez, 2012). Faces of children and staff were not documented in the digital photographs to further protect anonymity. If, by chance a photograph did contain the face of a child, it was immediately deleted and disregarded from documentation.

Learning Stories

A play activity was selected based on medical categories described by McCue (1988), as a framework for what health care play may look like as well as to highlight the learning dispositions previously mentioned by Nyland & Alfarez (2012). Learning Stories were created with the use of two documentation strategies in conjunction: field notes and photography. Reasons for the selection of Learning Stories as data for this exploratory study are two-fold. First, Learning Stories provide the capacity to include representations of a wide range of play

activity with the health care materials. Second, Learning Stories extend the documentation beyond the types of play by representing perspectives of the children and their knowledge.

In addition, a documentation panel resulted from a new learning story being added to the child care center wall each day, creating a total of ten Learning Stories. Kline (2008) explained that documentation panels demonstrate a respect for children's ideas and work by displaying abilities and knowledge that cannot be measured in any other way. She further stated that these panels contribute to the quality of the early child care center through authentic assessment of artifacts and interpretations demonstrating the children's exploration during play while including the researchers understanding. It is a strategy devised to teach how to become better observers, more reflective interpreters, and better facilitators of children's learning.

Interviews

Along with the children and the researcher, interviews with the ECEs were conducted to gather descriptive data providing the perspectives of the ECEs toward the children's responses during this experience. A semi-structured interview was carried out one-on-one in the staff room of the child care centre. This form of interview will allow for comparable data across subjects (Bogdan & Biklen, 1992). With a few direct questions asking specifically about their thoughts of the children's play with the health care materials and the Learning Stories, they had the opportunity to express themselves through opened ended questions (Appendix D). The researcher began the interview by briefly informing each subject of the research purpose and assured them that all information stated in the interviews would be confidential. The names of the ECEs, or children mentioned in the interviews, were not used for Learning Stories or interviews. The researcher asked each interviewee for permission to use an iPhone audio recorder during the interviews. Following these interviews fieldnotes were written to include any

information that the audio recorder could not, such as body language and facial expressions. The audio recorder was used for two reasons: to maintain accurate notes to refer back to but also with the hopes that the interview would feel more like a regular conversation without note taking distractions.

Materials. This study required the use of open ended materials as well as health care related materials. Open ended materials included such supplies as cardboard, paper, markers, glue, shoe box, etc. Health care related materials included such supplies as tongue depressors, cotton balls, gauze pads, medical tape, swabs, medicine cups, band-aids, dolls, as well as commercially made medical supplies (toys), etc.

This study required the use of technological materials to collect the data. A digital camera with a memory card saved pictures which were transferred for immediate viewing. A laptop was used to view the pictures saved to the memory card; pictures were selected and copied to a laptop folder where they could be used to create Learning Stories. An iPhone application "Voice Memo" was used to digitally record audio from the interviews, which were transcribed in a Microsoft© word document.

Analysis

Thematic analysis utilizes a web-like thematic network to summarize main themes of the research, using basic, organizing and global themes (Attride-Stirling, 2001). A theme captures something important within the data set in relation to the research question, representing some level of pattern response or meaning (Braun & Clarke, 2006). These web-like maps distinguish themes at three levels: basic, organizing and global, illustrating the relationship between them. Starting with the lowest-order, or basic, theme derived from the textual data. This theme consists of simple characteristics of the data combined to form the organizing themes (Attride-Stirling, 2001). Organizing themes are more revealing of what is happening in the text and enhance the significance of a broader theme that unites several organizing themes (Attride-Stirling, 2001). Global themes group the organizing themes together and present an argument or main theme that is supported by the lower level themes. Global themes are both a summary of the main themes and a revealing interpretation of the texts (Attride-Stirling, 2001).

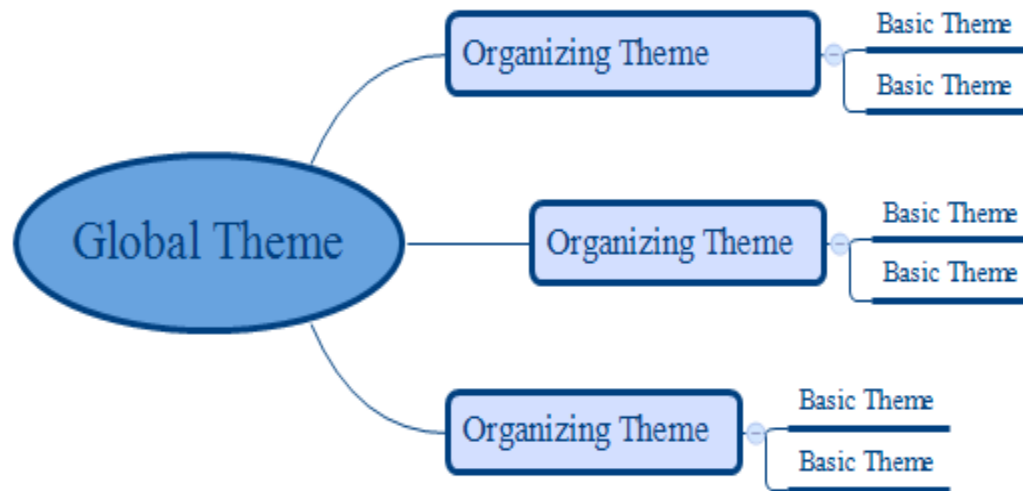


Figure 2: Structure of a thematic network: From Attride- Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, 1, 385-405.

The researcher conducted thematic analyses of the textual data in several steps. To begin, field notes were coded by devising a coding framework and then separating the text into segments using the developed coding framework. Themes were then identified, refined, and arranged into basic, organizing and global themes. After the transcripts of the interviews with the ECEs were transcribed verbatim, the same thematic analysis was then carried out to analyze these transcripts. Thematic networks (Attride-Stirling, 2001) were constructed and summarized by the researcher to illustrate the play behaviours demonstrated and perceptions of these play behaviours with regard to the health care related materials: 1) Health Care Play; and 2) Perceptions of Health Care Play and interpretations of the patterns were identified in each of the networks.

Chapter 4

Results

Overview

The purpose of this research study was to observe children's play with health care materials during free play at a child care center. Observations were documented over a 10-day period using field notes, photographs and Learning Stories. The results are presented in three sections. First, ten Learning Stories were created, representing the analysis of learning during specific play segments. Second, the results of a systematic thematic analysis of the field notes are presented under the primary theme, Health Care Play. Finally, the thematic analysis of two interviews with early childhood educators is included. In total, 424 photographs were taken over the course of the observation with select photographs included as supporting documentation for the ten Learning Stories presented below.

Learning Stories were composed for each day of observation and follow the format described by Nyland and Alfayez (2012): children's interest, involvement, persistence, expressions and contributions to play with the health care materials are supported with a photograph of the episode of play. Each Learning Story is included in the Appendix E. The following section provides a limited summary of each with a focus on describing the category of medical play observed by (McCue, 1988).

Learning Stories

Termites in My mouth. Role rehearsal/ role reversal was observed in this play segment as the role of "doctor dentists" was observed. Dialogue involved the discussion of tiny bugs in the mouth "termites" described by one child during an examination of an adult's mouth.

Kitty Doctor. Role rehearsal/ role reversal was illustrated in this play segment as two children carried out a medical scenario with one child engaging as the doctor and the other as a patient.

Band-Aids and Boobos. Role rehearsal/ role reversal was observed as the child took on the role of a healthcare professional treating multiple boobos with band-aids on the medical doll.

“It’s a medicine to protect you” Medical fantasy play is evident in this play segment as the child created a play scenario in which the purple fabric was used as medical bandages and medicine to protect others from becoming hurt.

What’s on the health care table today? Medical fantasy play was presented in this play segment as the child used the tongue depressors inside clear plastic bottles as potions, medicine and sunscreen.

Animal Doctors. Role rehearsal/ role reversal was observed in this play segment as children took on roles of healthcare professionals conducting medical care on toy animals.

Cotton Ball Volcano. Medically related art is represented in this play segment as children use cups, cotton balls and glue to create medical art.

Good Doctor/ Bad Doctor. Role rehearsal/ role reversal was observed in this play segment as children took on roles of healthcare professionals playing out medical events on the researcher as patient.

Skeleton Puzzle. Indirect medical play was observed as children cooperated to complete a puzzle of the human body.

X-rays are Cool. Indirect medical play is seen as the children used the x-ray images to identify the bones of the human skeleton.

Thematic Analysis

A thematic analysis was conducted by the researcher using the method described by Braun and Clarke (2006). Field notes and photographs were compiled and edited to identify play segments observed during the free play. Through a systematic process, the researcher coded the transcripts for themes. The global theme identified, Health Care Play, was supported with six organizing themes identified from an analysis of 22 basic themes (Figure 1: *Thematic Network*). In consultation with the supervisor the thematic analysis process was initiated by highlighting all play segments and creating a new file. The first steps involved reading the play segments in their entirety followed by a review to code basic themes in the margins. Next, the 22 basic theme notes were sorted and organized into sections allowing the researcher to observe the data for organizing themes as informed by the health care play literature.

Organizing and Basic Themes

Providing care. Providing care is an organizing theme comprised of four basic themes: Syringes and Band-Aids, Self-examination, Care for Others and Care for Animals. These four basic themes capture the different forms of medical care observed during the children's free play. Syringes and band-aids were popular materials used during the medical play scenarios as children took on the roles of healthcare professionals and cared for themselves, others and animals.

Children's familiarity and prior knowledge of these health care materials was recognized in the children's play dialogue with *Syringes and Band-Aids*. One child commented, "If someone broke their arm you would put this on it," holding the largest of the plastic toy bandages in his hand. As a child and I were treating a doll, she told me the doll needed a needle in her belly. I

gave the doll a belly needle and then she placed a band-aid over this area. I continued giving the doll needles and the child followed with the band-aids and said, "It needs a band-aid after a needle."

Self-examination was observed predominantly on day 3 when the band-aids were introduced into the materials. One child used the band-aids on the activity cut out but then sat down and began looking over his body. He said, "I have a real boobo" and pulled up his pant leg pointing to a scrape, explaining that he had tripped and fallen down. He placed a band-aid on it and pulled his pant leg down. He then pointed to a spot on his hand, showing me another one of his boobos and placed another band-aid. Many children examined their bodies and shared their stories of how they obtained their boobos.

Caring for others was featured in the children's health care play when they took on roles of patient and doctor. For example, one child picked up one of the gauze pads and coloured a spot on it with a red marker. She explained that it represented blood coming out and placed it under a band-aid that had been previously placed on an adult by another child, repositioning the band-aid. She continued to care for her patient as she picked up a commercially made (toy) syringe and put it up to the top of my shoulder and said, "You need a needle. It's a flu shot." After she gave me the flu shot she picked up a band-aid and placed it over the spot where she had just given me the injection.

Care for animals was also observed in the children's play. Typically, any toy brought in from the child's home was incorporated in the child's play including the occasional stuffed animal. However, on the tenth day of observations, plastic animals provided by the child care centre were made available and were not only incorporated into the health care play but became the focus of the play. One child brought over two plastic animals: a squirrel named Squirrelly

and a raccoon named Sarah. Another child began giving the squirrel a needle. This child had previously been playing as a “bad doctor” but explained he was now a good doctor and gave good medicine to the animals and was only a bad doctor to humans. Using the pill organizer, he opened it up and gave the animals the good medicine. Incorporating the animals transformed his play from “bad doctor” to a “good doctor.”

Imaginary play. Children expressed their imagination throughout the play activities. Characteristics of the play segments were identified as those indicating everyday life scenarios and those reflecting health care play scenarios. These imaginative play scenarios demonstrate a developed play theme.

A child playing with a pager, for example, dramatized an *everyday life activity*. He picked up the pager and began pressing the buttons, one after another; while wearing the stethoscope, he placed the pager down by his hips. I asked him what the beeping noise meant. He then put the pager up to his right ear while it continued to beep and explained that it was his cellphone and it was for calling his mom.

Alternatively, an example of a *health care play* scenario was represented by a child who picked up different sizes of purple material (pillow cases and bed sheets) and tried to tape them to my head and back. She explained that some medicine was to make you feel better but the purple cloths were a type of medicine that would protect me from getting hurt. They protected the parts of the body that they covered, (i.e. head and back). She continued providing health care by giving me medicine; this time, the medicine came from the doctor kit pill bottle. She tipped the bottle over, aiming the opening into the cap to measure and said that I needed, “half a mil” and handed it to me to take.

Exploration. The children showed their interest in the available materials in different ways. Through exploration children expressed their thoughts and expectations of the materials. Four basic themes were identified: Investigating the physical properties of objects and materials, posing questions, the use of books and puzzles, and exploration through arts and crafts.

Investigating the physical properties of objects was done by the child touching and manipulating the object and was typically followed by expressive dialogue about the object. One child had picked up the larger plastic band-aid and said, "This one doesn't move." He put it down, looking at the smaller plastic band-aid, picked it up and said, "This one is broken."

Posing questions about what the materials were used for happened most commonly with the commercially made (toy) plexor in the doctor's kit. A child picked up this object and turned to me asking what it was for. A few other children in the area also looked at me, without comment. I explained it was used by the doctor to check reflexes and was usually used on the knees. I demonstrated the typical reaction of the leg when tapped with the plexor. He smiled and then began tapping my knees with it. I said, "Ah!" kicking my leg out; he giggled and tapped my knee again.

The use of *puzzles and books* also introduced health care themes. The human skeleton puzzle was completed repeatedly during a play segment; a child and her peer, the child alone, and the child inviting me to do it. I asked if she would assist me while I did it and she agreed. I started with the head piece, just as the children did each time, and then asked what I should do next. She offered similar advice to what I had given while she was completing the puzzle, suggesting the neck and working downwards. When it came to the forearms I said I might need help on those and she said, "They are tricky but I'm pretty sure they're a pink color." Our roles switched as she assisted me by identifying and placing some of the bones. When the puzzle was

completed she held it up, turned it around and noticed the different sides. I explained this was due to the skeleton having a front and back side (See Appendix E: 9).

An example of using the health care play materials for *arts and crafts* was demonstrated when a child looked at the new materials and stated that he was going to make a hovercraft. He said I could build a castle beside him and he began using the tongue depressors. He arranged them in a square, creating the body of the hover craft, and drew wheels on the plastic board below the tongue depressors to create wheels and finish his hovercraft.

Making a diagnosis. Children demonstrated knowledge in their health care play as diagnosing patients was common when examining others. Children made statements about problems found in the mouth and ears, about each other's temperatures, chicken pox and broken bones.

Typically children took on the role of a healthcare professional while giving their patients a diagnosis. One child playing doctor used a small flashlight he brought from home as well as the otoscope as his examination instruments. He told his peer that he needed to check his ears. He put the otoscope up to the boy's ear with the flashlight behind it and said, "Okay, now I have to check your other one." He then used these instruments to check the boy's mouth, "Say ahhh!" The boy opened his mouth, said "Ahhh!" and allowed him to look inside. The boy playing the doctor picked up the thermometer and said, "This will tell me if you are warm... or not." He poked the tip of the thermometer in his peer's ear and diagnosed his *temperature* as, "You're warm!"

The *mouth* was a common body part that the children continually wanted to examine during their play. A child told me to lie down so she could check me over. Using the otoscope

she looked at my eyes and ears, told me everything looked okay but now she had to look at my teeth. I sat up for this examination. She had a dental mirror in her hand and told me to show my teeth as she imitated what I needed to do (wide, closed teeth smile). She said, "I see cavities!" She began sharing a personal story about oral hygiene as she put the dental mirror down. She said, "I brush my teeth, but, I have a secret. My sister and brother do not brush their teeth every day." I asked her if she flossed her teeth and she responded, "Yes!" I told her that was good and also important to do every day. She nodded and smiled.

Children demonstrated their prior knowledge of *chicken pox* by incorporating it through their play diagnosis. For example, a child went to the shelf, took the doctor kit and packed it full of supplies. He took the thermometer and began pressing it against his leg over and over. I sat down beside him and he began doing this to my arm saying it was giving me pimples. I said, "Oh no, are they itchy?" He said, "Yes, you have chicken pox" and continued to do it over and over. He said he had pills and told me I had to take them, they were bad pills. I asked him where the pills were located. He picked up the pill organizer and placed it on the table with all his other doctor supplies.

Not all diagnoses were of external conditions. *Broken bones* were sometimes mentioned during patient care. A child picked up the commercially made plastic band-aids and tried to put them on my arm and shoulders. They would not stay on me, so he put them on my fingers and wrist. He told me to keep them on. This was important to do. I asked him why I had such a big band-aid. He told me it was because my arm was broken.

Communication. Children shared their ideas creating new play and modifying it as they went along as more children joined in, or they had different ideas. This was observed through the means of cooperating, directing play, replicating actions and the correcting play behaviours.

Communication played a large role in the cooperation of play scenarios that were carried out daily.

An example of *cooperation* was demonstrated when one child turned to another and pointed a syringe closely to his peer's face. The boy pressed his lips together, and the boy holding the syringe said, "I'm not going to put it in your mouth for real." He relaxed his lips and responded, "It's a needle!" He opened his mouth, and the boy holding the syringe pressed down on the top of the syringe, the play continued as he pretended to give him medicine.

Cases of children *taking charge* of the play, or directing others were demonstrated most often after children tried to join in on play that had already begun. Two children were engaged in doctor/patient play when another child joined the play area. He picked up the thermometer as he tried to engage in this play as a doctor and check the other child's temperature. The child in the doctor role, wearing a doctor's coat, told him he needed a coat to be a doctor and then pointed to the table. The boy went over to the table and picked up a doctor's coat along with the pager, came back to the loft area and began playing doctor as well. With one child directing the other to wear a coat if he wanted to be a doctor, the child did so without any hesitation.

Replication of play activities was observed when children would first view a behaviour and then immediately repeat this behaviour in their play. An example of replication occurred when a child creating medicines and potions by placing tongue depressors inside the plastic bottles watched an ECE apply sunscreen to the children. His play changed as he said that these bottles could all have sunscreen in them and began pressing down on the tops. He aimed the bottle over my arm, I rubbed my arm and asked him if he could spray my other arm as well. He sprayed my other arm, my hands, face and legs.

Correcting play behaviours of others was another aspect of play demonstrated when children displayed confidence about the purpose of specific materials. One child told another that she would play as a patient after observing one of their peers engaging in a doctor role. Her peer had the mirror, thermometer and plexor in her hand and took on the doctor role. As the doctor, she aimed the thermometer at the patient sitting down. The patient opened her mouth and let the doctor examine inside with the mirror. They did this a few times going back and forth between the mirror and thermometer. The doctor picked up the plexor and tapped the patient's knee. She then said, "Make your knee go like this," as she demonstrated her leg kicking out. She tapped the patient's knee again but she didn't move. *Correcting* the patient, she said, "No, you have to do this" and demonstrated again. This time the patient did kick her leg out while smiling and looking down at her leg and the play continued.

Varied use of materials. Each day, new materials were added to the health care play environment. Some materials were employed for alternative to their primary purpose (health care), some materials were used to create new materials, non-health care related materials were used for health care purposes and health care materials were used in non-health care purposes.

The thermometer was used in alternative ways. The child held it upside down clicking the tip of it with her thumb and aiming the bottom part over my arm. She explained to me that it was a cream. She continued to click the tip and aimed it all over me. I pretended to rub it in. While she put the cream on my face and chest she told me to rub it in because I was sore all over.

Children combined supplies to create new play materials out of the available materials. A child engaged as "Dr. Germs" picked up the otoscope, stuffed a cotton ball into the back opening pretended to load it with germs. He explained this was his germ shooter and I had been shot at with germs. He placed a cotton glove on his head and said, "This is my germ blaster! It is

blasting germs right inside of you!” Another child, “Dr. Badness” incorporated the stethoscope into the play as a means of giving me bad feelings. He pressed the stethoscope button, it made a loud beeping noise and he moved it around my belly area. He told me they were bad doctors and were making me sicker.

Open ended, non-health care related materials, were used in health care related ways. The toy dolls were popular and used in multiple health care scenarios as patients. While caring for their doll patients, two children, utilized a shoebox as hospital beds, one for each doll. One child used the bottom of the box and the other child used the lid to place the dolls in bed.

Health care related materials were also used in non-health care related play. A child picked up a large piece of gauze bandage wrap and started wrapping his hand, his wrist and thumb. I asked what happened to his hand. He said it was not a band-aid, this was his batman costume. He ran over and showed the room director. She asked if he had been playing with knives again because she would not know what to tell his dad this time. He put his hands down straight by his hips, threw his head back and laughed. He replied with no, he had not been playing with knives, this was his batman costume.

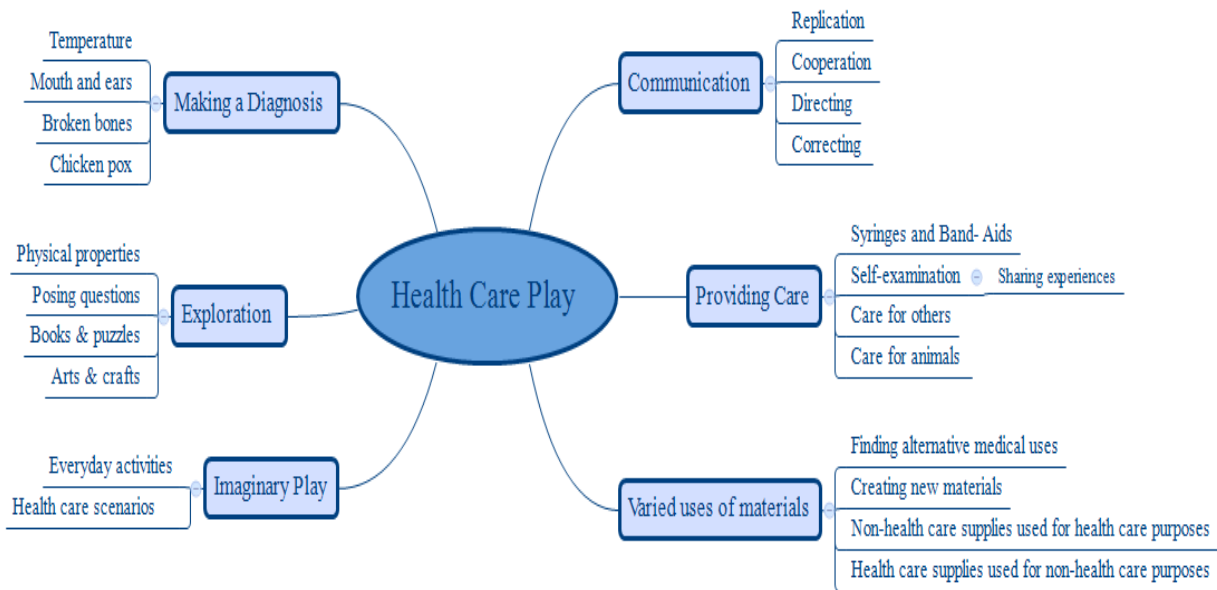


Figure 3: Structure of a thematic network: From Attride- Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, 1, 385-405.

Interviews

Interviews were conducted by the researcher using the method described by Bogdan & Biklen (1992). Two ECEs of the child care center were interviewed, separately, at the end of the 10-day observational period. Interviews ranged from 3- 10 minutes. The researcher transcribed the audio recordings and then through a systematic process coded the transcripts for themes. The global theme identified, Perceptions of Health Care Play, was supported with three organizing themes created from an analysis of six basic themes (Figure 2: *Thematic Network*). The first steps involved reading the dialogue segments in their entirety followed by a review to code basic themes in the margins. Next, the six basic themes were sorted and organized into sections allowing the researcher to compare data across subjects.

Organizing and Basic Themes

Materials and Environment. Materials and Environment is an organizing theme comprised of two basic themes demonstrated: *Children's Responses* and *Contributions*. Introducing the health care play materials into the child care center not only provides new materials for the children's play but influences their play environment as these materials may not be found in their typical everyday play. *Children's Responses* obtains a perspective from the child care centre ECEs as they had interpreted the children's responses to the materials and environment. *Contributions* includes any additional comments shared by the ECEs

Interpretations of the *Children's Responses* were stated throughout the interviews and incorporated in multiple questions. Statements such as, "They were so open to the materials" or "There was an appreciation of the new materials" demonstrated an observation of the children's curiosity with these new materials. Another example, "You (the researcher) were a supportive part of the play so they felt comfortable with you being there" demonstrated that with this change in their play environment with new materials and a new individual, the children were observed responding to this change with acceptance.

Contributions indicate the benefits highlighted by the child care centre ECEs throughout the interviews regarding the addition of health care related materials to the child care centre. An example, "There was flexibility of materials... the new materials provoke new questions and things." The interviews also brought up the ECE's ideas about opportunities that are available during free play periods carried out each morning, "Reminded us as staff too about how deep you can actually go, because the days are busy but, that's not really an excuse to not capture a moment."

Learning Stories. Learning Stories is an organizing theme comprised of two basic themes demonstrated: No Response and Response. These two basic themes capture the influence the Learning Stories had as a new Learning Story was added at the child care center each day. These themes include the ECEs perceptions of the Learning Stories as well as their observations of the children's responses to them.

No Response was obtained when one interviewee was asked about the Learning Stories and how they may have illustrated the children's knowledge or experiences over the observational period. The interviewee responded, "On the wall, yes! Sorry, I, I don't really have a comment for that either. I'm sorry in all fairness I didn't, I didn't really notice."

With a *Response* from the other interviewee, a few different angles towards the Learning Stories were discussed:

The documentation panels gave insight. It was almost like clues to us as to where to go next, um, which I totally saw, yours from beginning to end... The panel 'termites in my mouth' was intriguing as I wouldn't even know they would know what a termite was and I don't know where, or what context they had heard that before, but it was kind of interesting that it carried over into that medical play... The children did talk about the pictures and I heard during lunch time a couple comments being made.

Extending Health Care Play. Extending Health Care Play is an organizing theme comprised of two basic themes demonstrated: Beyond Free Play and Into the Centre. As the children demonstrated interest in the materials provided during the free play periods, the Beyond Free Play theme provides the ECE's perceptions and observations of the children's responses to

these materials throughout the day beyond the free play time. Into the Center provides the ECE's opinions about this research and how, if at all, it influenced the centre.

Children were said to be engaging with the health care related materials throughout the day and *Beyond Free Play*. One example of children engaging in health care related play after the morning free play period was explained:

On Friday afternoon I was over there with them and they were still playing with it (the materials) and wanting to make notes and you know, asking me questions about it and there was a lot of conversation amongst themselves, but that's all typical.

In the Centre demonstrated how this research has been received by not only the children, but the child care centre ECEs as they too were in this environment and observed the new materials and additional Learning Stories that were displayed each morning. One interviewee had ideas of how the health care play could be continued in the centre:

We have a porch area (outside the child care centre) with some blocks and things there but we could put some of the things you brought, out there and see what happens... I was thinking too, in terms of doctor, you know kind of expanding to vet, dentist, because we have children starting to lose teeth now so it might be nice that they're familiar with some tools and medical supplies... We can add too if they seem to have questions or would like some more materials cause I have a feeling it may go on a little bit longer.

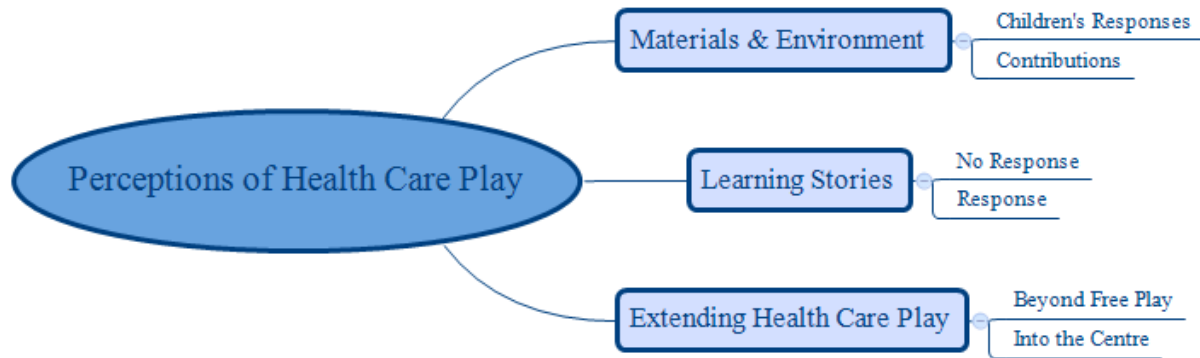


Figure 4: Structure of a thematic network: From Attride- Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, 1, 385-405.

Chapter 5

Discussion

The purpose of this study was to provide health care related materials for children's play in the child care setting to provide opportunities to observe and document the children's health care play. Although play-based child care programs offer opportunities for the development of a variety of play scenarios with children, the documentation of health care play specifically has been minimal. In order to address this gap in the literature, the researcher undertook a research study using participant observation to support the introduction and documentation of health care play activities. The researcher was immersed in the health care play environment as a way to gain insight and document specific play segments related to health care play. The immersion in the setting also allowed the researcher opportunities to build rapport with the children in the health care play corner. Although staff were present during the child and researcher play interactions, the researcher encouraged the children to share their stories and create their own play, without adult direction by engaging in child directed play as a player when the situation presented itself. The study was designed to provide the children with new materials daily and to observe the play as it presented over the observation period. The introduction of the researcher and materials was planned to be enjoyable for the children as well as provide children with opportunities to share their knowledge and experiences through play with health care materials.

In an effort to understand how health care related materials influence the children's play environment in the child care setting, four research questions are discussed below.

How do children play with the health care materials?

The incorporation of simple health care related materials into a child care classroom provided a wide variety of play behaviours for observation. Children demonstrated a range of play behaviours during the observational period. Children engaged in pretend play, interacted with their peers, incorporated props and materials and demonstrated a range of emotion.

Children engaged in pretend play, often demonstrating health care professional roles. The children were observed to organize their play around replications of reality (Johnson, Christie & Wardle, 2005). The children demonstrated their knowledge of health and health care situations as they took on the roles of health care professionals. As most children have encountered some form of medical experience, the behaviours they have experienced were demonstrated through their play. For example, the children replicated caring for their patient by putting a bandage on a booboo. MacGrath and Huff (2001) suggest that prior experiences have an influence on children's play with medical equipment, the previous experience with health care observed in the pretend play demonstrates everyday health care experiences.

The children interacted with each other as they played out health care scenarios. Children's ability to communicate effectively was observed as scenarios unfolded from each other's ideas and experiences. Children used the medical materials to connect ideas between the classroom and the real world. Children's use of dialogue and medical procedures communicated their understanding of the social interactions that take place and physical actions common in a typical visit to the doctor's office. Rushton & Larkin (2001) suggest developmentally appropriate practice requires an understanding of learning as a social activity. The social nature of the observed play, "I need to check your temperature" and "When I tap your knee, make your leg kick out like this" was apparent across the observational period.

Johnson, Christie and Wardle (2005) describe supportive environments as providing children with a safe place to carry out meaningful and representative play. The inclusion of a range of health care materials including dolls, doctor kits, and other paraphernalia support children's engagement in different play scenarios. The health care materials provided during the observational period encourage children to take on the health care professional roles to make diagnoses of their patients and conduct medical examinations. Children were observed using health care related materials as they took on health care professional roles and diagnosed their patients with multiple illnesses: temperature, abnormalities in areas of the mouth and ears, broken bones and chicken pox. Consistent with Solomon & Castimatis (1999), children demonstrated knowledge of tools, words and behaviours as they played through the scenarios.

The curiosity of children as they played was revealed when they asked questions of adults about unfamiliar materials. Children were familiar with many of the objects but showed curiosity towards unfamiliar objects through inquiries with others. They observed others using the materials, and asked questions about the materials before they proceeded to engage in play particularly in the early days of the observation. Health care play provides opportunities to become familiar with medical experience, relationships and equipment. Children learn together. For example, one child learned about the plexor from an adult; the child then began to use the plexor in a doctor scenario with other children and shared his knowledge with them. Solomon and Castimatis (1999) found children needed time to become familiar with the environment and develop rapport with staff and other children as they became familiar with new materials.

As children integrated their previous knowledge with their new knowledge they came up with creative scenarios to enact. Schierhold (1994) suggests that higher level thinking skills are fostered as children make decisions about characters, plot and setting through the

reenactment of their stories. This was observed for example when a child faced with a situation she did not want to engage in took on the role of good doctor and used medicine in the form of fairy dust to deal with and counteract the behaviours of two boys playing bad doctor. In the discussion of developmentally appropriate practice Rushton & Larkin (2001) assert that good learning environments empower learning and encourage children to explore their ideas and feelings. This supports children to use play as a means to make sense of the world around them.

Play provides an opportunity for children to express feelings and regain a sense of control and competency as they create the play scenario (Bolog, 2005). Children integrated their medical experiences into the health care play as they shared stories about themselves and their families in medical situations. Jessee et al., (2000) described the negative feelings that can be associated with medical play if the play becomes overwhelming due to unfamiliar environments or painful expectations of a future procedure. By providing health care related materials in a designated area of the child care classroom, the materials were introduced into a familiar and supportive environment. The materials were used by children who were curious and led the play scenario entirely.

Jessee et al., (2000) emphasized that opportunities to provide health care play in early childhood settings enhance children's positive experiences and allow them to play out negative experiences in a safe and nonthreatening manner. Opposing roles of health care professionals were carried out with two children acting out as bad doctors and another child joining the play as a good doctor. The children communicated with one another describing their play actions as they took turns examining and treating the patient. Although the majority of play carried out in doctor roles was in support and nurturance of the patient, this play demonstrated a different angle.

Although this play incorporates negative themes (i.e., 'bad' pills, germs, and doctors) it was carried out with high energy and smiles from the children, suggesting enjoyment in the play.

In what ways does the children's play change over the experience?

From the first to the last day of play observations children were drawn to the health care related materials. Over the play experience, children took the opportunity to build upon prior health care related experiences. The children extended their play to include a variety of different players, materials and to carry out health care related play in other areas than the health care table. Children related to their play scenarios. This was demonstrated as they began sharing stories of personal medical experiences related to the materials used in the play scenarios.

Health care related materials remained in the child care classroom each day and additional materials were added to the play environment daily. This provided the opportunity for children to experience repeated exposure to the health care themed play and materials. Bolig (2005) outlined that materials are influential to a child's emotional and physical response. Symbolic objects including health care items, are more likely to elicit unique expressions of feelings and experiences than typical toys and games. Provided with this exposure, the children were observed extending their play by building upon play experiences carried out days prior.

It was common to observe children engaging in a doctor role treating patients to feel better. As two boys carried out a 'bad doctor' play scenario by giving bad medicine to the patient and making them sicker, this same play scenario was again enacted but also extended on subsequent days. On day 8, a child began incorporating the toy animals into her doctor care. One of the boys engaged in bad doctor play went over to her and explained, "I'm a good doctor and give good medicine to the animals. I am only a bad doctor to humans." This demonstrated the

children's affection for animals as they did not want to play 'bad' with the animals. After engaging with the animals the boys came back to their human patient and continued as good doctors. This play extended from caring for a patient as a bad doctor, to caring to animals and humans as a good doctor. This play demonstrated sensitivity towards animals as it changed to positive care giving which, in turn, carried back over to the original patient.

The extension of the children's play was not observed only through the transforming role play but also in the areas in which health care related play was carried out. Each day, additional materials were placed on the same table that soon became referred to as the health care table. Health care play was not limited to the introduced materials or to the area where they were placed. Children were observed playing with the health care related materials in other areas of the classroom (e.g., the loft). Children brought materials from other areas of the classroom to the health care table to incorporate in their play along with the health care related materials (i.e. plastic toy animals).

As role play was most commonly observed in doctor play scenarios, this role did change throughout the play experience as the children began relating to the role of a patient. On day 3, the children were provided with band-aids and one of the children explained that, "Band-aids go on booboos." The children began self-examining and sharing stories about personal experiences they had had, or were currently experiencing with booboos by pointing to current bandages or injuries and explaining what happened. This is similar to Rushton & Larkin (2001) as they explained that use of familiar objects can facilitate connections between the classroom and the real world.

Rushton & Larkin (2001) explained that learning and memory are strongly connected to experienced play emotions, and thus, having a play environment that is both stimulating and safe

provides learning opportunities. Learning opportunities were demonstrated as the focus of the questions asked by the children changed over the observational period. Initially, it was common for the children to ask the researcher whether the health care related materials belonged to them and what the materials were used for. As time passed, children's curiosity continued about the materials but they began taking control of the play. Although, the occasional question arose about materials, children were typically already engaged with the materials and simply seeking information about the material to incorporate it in the play. For example, as a child was caring for a patient by using a stethoscope, questions about the numbers on the thermometer were asked prior to checking the patient's temperature.

What categories of medical play described by McCue (1988) are observed through children's play?

A medical play model was used as a base for observations for this research. McCue (1988) highlighted four play categories that were commonly carried out during medical play, role rehearsal/role reversal, medical fantasy play, indirect play and medical art. As this research included health care related materials and props similar to those that may be used in medical situations, which of these categories would also be observed in a child care classroom was of interest.

McCue (1988) described role rehearsal/role reversal as the most traditional reenactment of medical events on models such as dolls, puppets or stuffed animals. This non-threatening role play brings attention to misconceptions children may have towards medical environments as well as health and illness. This allows misconceptions to be addressed by the child care workers as children have demonstrated comfortably expressing their emotions and understandings when engaged in this play (Burns-Nader, & Hernandez-Reif, 2014). This category of play can be

demonstrated in, *Termites in My Mouth, Kitty Doctor, Band-aids and Booboos, Good Doctor Bad Doctor, and Animal Doctor.*

McCue (1988) expressed medical fantasy play to involve medical themed role play and fantasy without any model or medical equipment being used. Children do not need real equipment to engage in imaginative play situations as they can transfer their imaginative thoughts on to nonmedical toys. She described dramatic play and standard fantasy play to be all that is required to support this play. This play provides an opportunity for children who may be avoidant at first to engage in a less direct manner and later progress to incorporating these materials. Medical fantasy play is carried out in, *It's Medicine to Protect you* and "*What's on the Health Care Table Today?*"

Indirect medical play provides opportunities for children to engage in exploration and familiarization and to obtain information about medical equipment or situations from an adult (McCue, 1988). This can be done through the use of puzzles and games with hospital themes, or medical equipment used in non-fantasy, nonmedical ways. This play is evident in *Skeleton Puzzle* and *X-rays are cool.*

As adults, we may watch a child draw or create something from craft supplies, trying to figure out what it is that they have designed. Children are more invested in the actual activity of the process than the final outcome. The opportunities for children to express, create and control this activity are limitless and can be carried out with any type of craft supplies or may even incorporate medical materials. McCue (1988) discussed medical art to give opportunities to children to express their understanding of, and psychosocial reactions to, their medical experiences. Medical art is shown in, *Cotton Ball Volcano.*

All categories of play were observed during the 10- day observational period. Role rehearsal/ role reversal was dominant as it was the only category of play observed on each of the days. This category of play was also recognized through ECE interview responses as one ECE responded to this question with, "There was definitely some role playing going on and negotiating with, um, who was doing what," the other ECE stated, "Role play for sure. They were actually pretending to be the doctor's and have the sick people."

The categories of play elicited unique expressions of feelings and experiences during the children's play consistent with Bolig (2005). The role reversal/ role rehearsal play observed demonstrated their knowledge of healthcare professionals as well as their experience with health care materials as they used these in their play to treat patients, which in some cases involved themselves.

What can Learning Stories tell us about children's prior understanding and knowledge about health and health care (e.g., health literacy)?

Ten Learning Stories were developed to provide narrative accounts of the children's learning situations. The stories presented included play scenarios around dental examinations, animal doctors, caregiving, medicines and creative art. Photographs included in the Learning Stories were selected to represent the children's play and the story content. In particular, the content of the children's play related to their prior understanding and knowledge about health and health care and included the child's voice, dialogue and behaviours to reflect their unique perspective. In addition to the play activity as organized by McCue's framework of medical play, discussed above, the learning stories provide insight into health literacy. Health literacy refers to the abilities to access, understand, evaluate and communicate with health care information (Canadian Council on Learning, 2008). The observed variety of the children's play was

presented daily to the children and teaching staff in the form of Learning Stories posted on the wall above the health care play corner.

Understanding about the roles of health care professionals' role rehearsal/ role reversal was described by McCue (1988). The pretend play involved dramatic scenarios supported by the health care props and the children's understanding of health and health care (Johnson, Christie & Wardle, 2005). The most common health professional scenario involved the children engaging as a doctor (see *Good Doctor/Bad Doctor*). Children's demonstration of their understanding of the role of a dentist was described in *Termites in My Mouth*. Additionally, the role of the animal doctor was observed in the play.

Similar to that observed by McGrath and Huff (2001), children demonstrated prior knowledge of health care related materials; toy medical instruments from the commercial medical kit were used daily across the observation period, e.g., stethoscope, thermometer, syringe and band-aids. Children demonstrated their knowledge for most of the instruments and asked questions about novel items. Band-aids were used regularly to care for booboos. One child stated, "If someone broke their arm you would put this on it," as he held up a band-aid. Additionally, a basic understanding of the use of medicine was observed in the play. This was most evident in the scenario, *Good Doctor/ Bad Doctor* where doctors dispensed pills. The use of fairy dust by one child was a creative response to the effects of bad medicine that has been labelled as a poison used to make people sick. Syringes were used to distribute a variety of medicines, for example for animal care or sunscreen application. The Learning Story *What's on the Health Care Table Today* illustrates the knowledge of topical medicine as it was sprayed from plastic bottles over the patient as a sunscreen. Band-aids were seen in multiple Learning Stories as a treatment to heal patient's wounds. As well, medicine was used in a preventative

way. This is illustrated in *It's Medicine to Protect You* as the child used non-health care related materials, transformed them into medical bandages and explained they were for protection, rather than as a treatment. The use of oral and topical medicine and bandages as both treatment and prevention reveals children's basic knowledge differentiating a range of uses and applications for medicine.

Prior knowledge about the parts of the body was demonstrated through their play. In the Learning Story *Band-aids and Booboos* the child lists parts of her doll's body that need band-aids. In *X-rays are Cool* the child can recognize x-ray images as bones. As well the child was capable of distinguishing the different bones and aligning them with his own. The *Skeleton Puzzle* is another representation of children being able to recognize the human skeleton in an abstract and less realistic depiction. For example, the child named the part of the body they were about to place in the puzzle, and also responded appropriately to prompts suggesting where to place pieces in the puzzle. Apparently some bones were more familiar to the children than others because questions about the ribs, spine and pelvis were raised as the puzzle was completed.

The opportunity to observe children's play with health care materials allowed documentation of the children's prior knowledge and understandings of health and health care. Knowledge of the roles of health care professionals was demonstrated as this was often observed in pretend play where role rehearsal/ role reversal play was common. Knowledge of the materials and instruments used in health care scenarios, using medicines and identifying parts of the body were documented as a result of the opportunity to observe the health care play. An important aspect of health literacy is a comfort and ability in seeking health care information. The children in this setting appeared comfortable and curious around health care topics and were interested in seeking more information from the adults and their peers. When children were unsure about a

particular material (e.g., medicine cups), they were curious about the materials and did not hesitate to ask about the material. Children also asked questions about the health care themed books. A child picked up a few of the books flipping through the pages and opened one to a page where the doctor was examining a patient's throat and belly. She asked, "Why is he poking her and, what is that thing he is using on her tongue?" Children displayed health literacy as they engaged in seeking out unfamiliar medical information (Canadian Council on Learning, 2008). Health literacy was demonstrated also through the previous play experiences as children understood health care related materials and communicated with one another with health care information as they engaged as doctors and cared for their range of patients (self, each other, animals).

The documentation of the children's health literacy has the potential to be shared with children, educators, staff and family members. In this study, children were observed to make passing comments about the Learning Stories posted on the wall. Parents did not have an opportunity to observe the Learning Stories as they typically did not enter the classroom but rather remained at the entrance of the centre at drop off and pick up times. The two ECEs interviewed had a mixed response: one did not note the Learning Stories while the other saw value in both the creation and sharing of the information provided. In contrast to ways in which Learning Stories can be used in early childhood settings, the full value was not achieved in this preliminary study (Nyland & Alfayez, 2012).

Implications

This research study is unique as elements from the child life profession and the field of early childhood education have been integrated. Perhaps overlooked in health care settings, the field of early childhood education in fact has much to offer relative to child life play-based

approaches. Observation is a primary tool for documenting how children engage in the learning process (Rushton, Juola-Rushton & Larkin, 2010). An integral part of the practice of most professionals working with children, the purpose and function of observation and documentation may differ across fields. Although the educational foundations of early child life leaders were closely tied to child development and early childhood education, a shift has occurred as education and training have specialized along career pathways resulting in a separation between preparation of early childhood educators and child life specialists (Turner & Brown, 2014). The results of this study brings together areas of interest to both professions: play-based learning, health and wellness as well as observation and documentation.

From a child life perspective, group play in health care settings provide opportunities to observe children's activity, interests and perceptions of health, illness, and health care encounters. Assessment and documentation in child life practice typically follow a medical model with specific attention to assessment, intervention and outcomes from the perspective of the professional and documented in the patient record (Turner & Fralic, 2009). In contrast, advocates in early childhood education practice a developmentally appropriate approach to assessment and documentation centered on the learner in play-based programs. The Learning Stories documented in the study allow for elements, in particular health care play, from both areas to be made visible and open the door for future collaboration across professions.

The move toward authentic assessment proposes a recognition and response to the learning taking place that includes the child's voice (Jones, 2004). Learning Stories represent one approach whereby children are active contributors and decision makers in the assessment process resulting in the documentation of tangible evidence of the value of play (Kline, 2008; NZ Ministry of Education, 2010; Nyland & Alfayez, 2012). Indeed, through the inclusion of

dialogue, photographs, children's work and their voices, Learning Stories are a form of documentation created to make learning visible. As in early childhood education learning environments, the implementation of Learning Stories within hospital group play programs has the potential to enhance the observation and documentation of children's prior knowledge, engagement in investigation, challenges and motivation as well as to promote extended opportunities for learning, collaboration and engagement with families.

As health care play is typically carried out and researched in a health care environment, this research demonstrates how health care play can be integrated into the early child care setting. Evidence of ways in which children create opportunities to share and extend their knowledge and understanding of health care related topics through play was documented in the thematic analysis as well as the Learning Stories. Bolig (2005) explained the importance of paying attention to children's expression of knowledge and understanding, thoughts and feelings behind children's medical experiences that may be brought into their play. Observing how children responded with health care related materials may be a new area for early childhood educators to consider as valuable to the overall learning and well-being of children in their care. Providing materials such as stuffed animals and dolls in conjunction with the health care materials offers the opportunity for children to explore and practice medical procedures in a safe, non-threatening environment as previously suggested by Jessee et al., (2000).

Although this 10-day observational period is short, it did allow for the demonstration of ways in which children respond to health care related materials in a play-based setting and ways in which the play is extended over the time period. Play behaviours did change over the observational period in the child care setting. This data is informative for the field of child life as it continues to grow and expand on practices beyond the walls of the hospital and into the

community. Opportunities to view play scenarios over an extended time period provide opportunities to assess children's prior knowledge and feelings around health related topics and children's responses and experiences. This broader view of children allows insight into levels of health literacy – a skill necessary across the life span.

Identifying the categories described by McCue (1998) brings medical play knowledge to early childcare educators. For those educators who may not be aware of this framework, the field of child life offers a new perspective on how children incorporate health care play into a variety of types of play, e.g., indirect medical play, medical art. Finally, this research brings insight for early childhood educators, play-based researchers, students, as well as academics who educate both Child Life Specialists and Early Childhood Educators on the importance of learning from other disciplines.

Limitations

Although this research was carefully prepared, there were some limitations related to the study design and the inexperience of the researcher.

Design limitations include a range of elements. First, the observation period each day was limited to the morning free play period. Therefore, health care related play activities that developed over the day were missed. Extended observation periods or observations scheduled across different periods of the day could have enriched the documentation of observed play. Second, the presentation of the Learning Stories to the children, staff and families was limited and remained undocumented for the most part. A more directed effort to include the children, staff and families in discussion around the Learning Stories would have provided better insight into children's responses and displayed knowledge demonstrated throughout the day and at

home, enriching the data analysis to better include multiple perspectives. Finally, although the researcher had the consent of parents of all the children in the specific child care classroom, no background information on children's prior medical knowledge, experiences or exposure was collected. As stated by MacGrath and Huff (2001), children's prior experience and exposure to medical experiences has an impact on their play. Without this child and family background information analysis was restricted to the observations in isolation. As a final thought, the professions represented in the parent population may be of interest as knowledge and experience gained within the family was not evaluated as a factor of interest.

The inexperience of the researcher acts as a limitation in regard to the data collection and analysis. The semi-structured interviews with the early childhood educators resulted in limited data. The interviews could have been enhanced if the researcher was better prepared to probe and ask follow-up questions to engage the interviewees in further dialogue. As a result, the data were not as rich as they might otherwise have been with greater rapport and perhaps a more frequent connection with the classroom teachers. Additionally, the Learning Stories were not used to engage the children, staff and families in dialogue around the play-based health care play experiences and learning. Intentional emphasis on the Learning Stories as a facilitator of sharing and leaning would be of benefit to future researchers and provide further evidence of the impact of the documentation in the classroom.

Despite these limitations, this study offers valuable insight into children's responses to health care related materials. While not all health care play may have been observed and documented during the 10- day experience and some details may not have been obtained due to limited interview questions, this study provided the children who participated with exposure to health care related materials and opportunities to engage in a play not commonly experienced

outside of medical environments. It also demonstrated the abundance of play behaviours children carry out when given the opportunity to explore these materials.

Future Research

Although the results of this study provide observations of preschoolers' health care play in the early childhood classroom, future study could include a broader perspective of the activities in the child care classroom and the influence of past experience and family on the children's experience and learning. Three suggestions are viable next steps. First, future research can include a focus on involving the parent or guardian of the child to provide background information and insight into the child's play. Including the parents or guardians through the interviews and observations of Learning Stories would offer additional perspectives on the observed play. Second, the observational period and play materials could be extended to enrich the data collected to inform practice of both child life specialists and early childhood educators. Finally, interviews could be developed and repeated across the intervention period to gain greater insight and knowledge about the play and changes in play over time.

References

- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research, 1*, 385-405.
- Baker, B. R. (1996). Drama and Young Children. *Early Childhood Education, 2-17*.
- Bibace, R., & Walsh, M. E. (1980). Development of Children's Concepts of Illness. *Pediatrics 66*(6), 912- 917.
- Bogdan, R. C., & Biklen, S. K. (1992) *Qualitative Research for Education. An Introduction to Theories and Methods (2nd ed.)*. Boston, Ma: Pearson Education Group.
- Bolig, R. (2005). Play in Children's Health-Care Settings. In J. Rollins, R. Bolig & C. Mahan, *Meeting Children's Psychosocial Needs Across the Health-Care Continuum* (pp.78-107. Austin, TX: Pro-ed.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research Psychology, 3*, 77-101.
- Burns-Nader, E. (2011). *Effects of Medical Play on Reducing Anxiety, Fear and Procedure Distress in School-Aged Children Going to Visit the Doctor*. Unpublished doctoral dissertation, University of Alabama, Tuscaloosa: AB.
- Burns-Nader, E., & Hernandez-Reif, M. (2014). Facilitating Play for Hospitalized Children Through Child Life Services. *Children's Health Care*. Doi: 10.1080/02739615.2014.948161

- Canadian Council on Learning. (2008). What is Health Literacy. In Canadian Council on Learning, *Health Literacy in Canada: A Healthy Understanding* (pp. 7-14). Ottawa: Ontario.
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada. *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*, December 2014.
- Depoy, E., & Gitlin, L. N. (1998). *Introduction to research. Understanding and Applying Multiple Strategies* (2nd ed). Mosby, St. Louis.
- Gariepy, N., & Howe, N. (2003). The therapeutic power of play: examining the play of young children with leukaemia. *Child: Care, Health & Development*, 29(6), 523-537.
- Jessee, P. O., Wilson, H., & Morgan, D. (2000). Medical Play for Young Children. *Childhood Education*, 76(4), 215- 218.
- Johnson, J. E., Christie J. F., & Wardle, F. (2005). *Play, Development, and Early Education*. USA; Pearson/Allyn and Bacon.
- Jones, J. (2004). Framing the assessment discussion. *Young Children*, 59 (1), 14-18.
- Kister, M. C., & Patterson, C. J. (1980). Children's Conceptions of the Causes of Illness: Understanding of Contagion and Use of Immanent Justice. *Child Development*, 51(3), 839-846.
- Kline, L. (2008). Documentation Panel: The "Making Learning Visible" Project. *Journal of Early Childhood Teacher Education*, 29, 70-80.

- MacGrath, P., & Huff, N. (2001). 'What is it?': findings on preschoolers' responses to play with medical equipment. *Preschoolers' responses to play with medical equipment*, 27(5), 451-462.
- McCue, K. (1988). Medical Play: An Expanded Perspective. *Journal of the Association for the Care of Children's Health*, 16 (3), 157-161.
- New Zealand Ministry of Education. (2010). *Why Should Children Contribute to Assessments?* Retrieved from <http://www.educate.ece.govt.nz/learning/curriculumAndLearning/Assessmentforlearning/KeiTuaotePae/Book4/WhyShouldChildrenContributeToAssessments.aspx>
- Nyland, B., & Alfayez, S. (2012). Learning Stories- crossing borders: introducing qualitative early childhood observation techniques to early childhood practitioners in Saudi Arabia. *International Journal of Early Years Education* 20(4), 392-404.
- Rushforth, H. (1999). Practitioner Review: Communicating with Hospitalised Children: Review and Application of Research Pertaining to Children's Understanding of Health and Illness. *Journal of Child Psychology*, 40 (5), 683-691.
- Rushton, S., Juola-Rushton, A. & Larkin, E. (2010). Neuroscience, play and early childhood education: Connections, implications and assessment. *Early Childhood Education Journal*, 37, 351-361.
- Rushton, S., & Larkin, E. (2001). Shaping the Learning Environment: Connecting Developmentally Appropriate Practices to Brain Research. *Early Childhood Education Journal* 29(1), 25-33.

Schierholt, C. G. (1994). Enhancing Creative Dramatic Play and Story Reenactments In a Primary Grade Classroom. *Young Children and Literacy*, 2-24.

Solomon, G. E. A., & Cassimatis, N. L. (1999). On Facts and Conceptual Systems: Young Children's Integration of Their Understandings of Germs and Contagion. *Developmental Psychology*, 35(1), 113-126.

Sluss, D. J. (2005). *Supporting play Birth through Age Eight*. Canada: Thomson, Delmar Learning.

Thompson & Snow (2009). Theoretical Foundations of Child Life In R. H. Thompson (1st Ed.), *The Handbook of Child Life: A Guide for Pediatric Psychosocial Care*. (pp.378). Thomas, Charles C. Publisher, Ltd.

Turner, J. & Brown, C. (Editors) (2014). *The Pips of Child Life: Early Play Programs in Hospitals*. Kendall Hunt Publishers: IA

Turner, J. C. (2006). Representations of Illness, Injury, and Health in Children's Picture Books. *Children's Health Care*, 35(2), 179-189.

Turner, J. & Fralic, J. (2009). Making explicit the implicit: Child Life Specialists talk about their assessment process. *Child and Youth Care Forum*, 38 (1) 39-54.

APPENDIX A: Permission Request for Research Study at the Child Study Centre

DIRECTOR

(Letterhead)

I request your permission to invite your staff and families of the Child Study Centre to participate in a research study *Observations of Children's Health Care Play*. This research study will be conducted by Graduate student Victoria Dempsey, in fulfilling the requirements of the Department of Child & Youth Study Master's Thesis, and as approved by the Research Ethics Board at Mount Saint Vincent University. Dr. Joan Turner, Associate Professor Child & Youth Study is the supervisor for my research project.

The purpose of this research study is to extend health care play opportunities into the child care setting and observe and document children's play with health care related materials.

This research study aims to address the following questions:

How do children play with health care related materials?

What categories of medical play can be observed?

In what ways does the children's play change over the observational period?

What can Learning Stories tell us about children's prior and new knowledge about health and health care (e.g., health literacy)?

Should you agree to participate in this research study, you, your staff and children may be involved in the following way:

The Child Study Director will obtain the Informed Consent as parents/guardians drop-off and pick up their children from the centre. The researcher will be available with information on the research study and the informed consent process for parents and guardians.

The preschool classroom teachers will be approached with information on the research study as approved by the Thesis committee and the UREB and asked to provide informed consent for their participation in the classroom activities and the interview at the end of the observation period.

The researcher will be available to meet the parents/guardians as the Director informs parents/ guardians about the research study. The intention is to obtain informed consent for all children attending the morning period in the preschool classroom.

Should you agree to allow the research study in your centre, while in the classroom or play area children may be involved in the following way:

Children in the child care centre will go about the normal activities of the day. The researcher will enter the classroom as a guest to introduce health care related play materials and document children's play over a 20-day period. The focus of the study is the children's play and not the response of individual children. The researcher will make notes, take photographs and collect artifacts of the children's play. Assent from the children will be ongoing as the researcher will ask for permission to document, e.g., can I take a photo of the stethoscope on the doll while you listen to her heart? Can I make notes on what you said about the medicine cup? Is it okay to take a picture of your creation of band aids and tape?

At the start of each new day the researcher will post a learning story for the children, teachers and others to see. The learning story is a visual representation of the child's play assembled with notes, photographs and artifacts from the previous day. Though engagement with the learning story, children often express opinions, extend their ideas and make suggestions for new materials to be added to the health care play.

Additionally, classroom educators will participate in an interview at the end of the observation period to share their perspective on the health care play, learning stories and children's knowledge and understanding of health care related ideas.

The use of the health care related materials and learning stories in the classroom introduces variations to standard early childhood education activities where materials in the classroom are adjusted to address the emerging needs and interests of the children and where the open display and documentation of the children's activities are a part of the curriculum. As you know, the children in your center are accustomed to teachers documenting their activities through notes, photographs and collection of artifacts (e.g., art work, scribbles/writing, creations). The children are also accustomed to engaging with new adults in the environment with the support of their caring and responsive teachers.

Should you choose to participate in this research study, the staff and children's identity will be protected in the following way:

- All field notes collected will focus on the play and not the individual's engaging in the play.

- Photographs will be taken intentionally to avoid the inclusion of identifying features (e.g., face, name tags)
- Pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.
- Only the primary researcher student, her Thesis supervisor and committee member, will have access to the field notes, photographs and artifacts collected as data.
- All paper and digital data will be located in files on password protected laptop or computers.
- Data will be deleted after a maximum of five years.
- Learning stories will be displayed in the Child Study Centre, may be used for teaching in the department of Child and Youth Study and will be included in future publications.

If you give consent to participate in this research study, please sign the accompanying *Consent Form* and return it to me. Your signature on this form indicates your understanding of this research study and its procedures, and that you give your informed consent to participate. Please keep this letter and a copy of the consent form for your own information and records. A summary of the final results of this study will be made available to all participants who provide an email address on the consent form.

If you have any questions about this research project or your child's involvement, please contact **Victoria Dempsey** victoria.dempsey@msvu.ca. You may additionally contact my Thesis supervisor, **Dr. Joan Turner** at (902) 457-6750 or by email at joan.turner@msvu.ca. If you have any questions or concerns about the ethics of this study or would like to speak to someone who is not directly involved, you may contact the chair of the University Research Ethics Board c/o MSVU Research and International Office at (902) 457-6350 or through email at research@msvu.ca.

Thank you in advance for your consideration of this research study and for considering your participation.

Sincerely,

Victoria Dempsey, Master of Arts (CYS) student

Bachelor of Applied Arts (CYS)

Mount Saint Vincent University

Observations of Children's Health Care Play

INFORMED CONSENT

By signing this consent form, you are indicating that you have fully read and understand the above information and agreed to allow the researcher to conduct the study in your centre, invite the Early Childhood teachers to participate, and approach parents for permission for their child to participate in this study. You will be given a copy of the consent form for your files.

Participant Signature

Date

Researcher Signature

Date

Email Address of the Study Summary

Please provide an email address if you are interested in receiving a summary of the research study after it is completed. _____

**APPENDIX B: Permission Request for Research Study at the Child Study Centre
ECE TEACHERS**

(Letterhead)

I request your permission to participate in a research study *Observations of Children's Health Care Play*. This research study will be conducted by Graduate student Victoria Dempsey, in fulfilling the requirements of the Department of Child & Youth Study Master's Thesis, and as approved by the Research Ethics Board at Mount Saint Vincent University. Dr. Joan Turner, Associate Professor Child & Youth Study is the supervisor for my research project.

The **purpose** of this research study is to extend health care play opportunities into the child care setting and observe and document children's play with health care related materials.

This research study aims to address the following questions:

How do children play with health care related materials?

What categories of medical play can be observed?

In what ways does the children's play change over the observational period?

What can Learning Stories tell us about children's prior and new knowledge about health and health care (e.g., health literacy)?

Should you agree to participate in this research study, while in the classroom or play area yourself and the children may be involved in the following way:

The preschool classroom teachers will be approached with information on the research study as approved by the Thesis committee and the UREB and asked to provide informed consent for their participation in the classroom activities and the interview at the end of the observation period.

Children in the child care centre will go about the normal activities of the day. The researcher will enter the classroom as a guest to introduce health care related play materials and document children's play over a 20-day period. The focus of the study is the children's play and not the response of individual children. The researcher will make notes, take photographs and collect artifacts of the children's play. Assent from the children will be ongoing as the researcher will ask for permission to document, e.g., can I take a photo of the stethoscope on the doll while you listen to her heart? Can I make notes

on what you said about the medicine cup? Is it okay to take a picture of your creation of band aids and tape?

At the start of each new day the researcher will post a Learning Story for the children, teachers and others to see. The learning story is a visual representation of the child's play assembled with notes, photographs and artifacts from the previous day. Through engagement with the learning story, children often express opinions, extend their ideas and make suggestions for new materials to be added to the health care play.

Additionally, classroom educators will participate in a digitally recorded interview at the end of the observation period to share their perspective on the health care play, learning stories and children's knowledge and understanding of health care related ideas. Quotes may be used in future presentations and publications. However, pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.

The use of the health care related materials and learning stories in the classroom introduces variations to standard early childhood education activities where materials in the classroom are adjusted to address the emerging needs and interests of the children and where the open display and documentation of the children's activities are a part of the curriculum. Children are accustomed to teachers documenting their activities through notes, photographs and collection of artifacts (e.g., art work, scribbles/writing, creations). Children are also accustomed to engaging with new adults in the environment with the support of their caring and responsive teachers.

Should you choose to participate in this research study, the staff and children's identity will be protected in the following way:

- All field notes collected will focus on the play and not the individual's engaging in the play.
- Photographs will be taken intentionally to avoid the inclusion of identifying features (e.g., face, name tags)
- Pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.
- Only the primary researcher student, her Thesis supervisor and committee member, will have access to the field notes, photographs and artifacts collected as data.
- All paper and digital data will be located in files on password protected laptop or computers.
- Data will be deleted after a maximum of five years.
- Learning stories will be displayed in the Child Study Centre, may be used for teaching in the department of Child and Youth Study and will be included in future publications.

Your participation in this study is completely voluntary. You are free to withdraw from this study at any time, with no negative effect or consequences to you. Should you decline to participate during an observation session, or interview the researcher will immediately respect your wishes. If an ECE teacher withdraws from the interview prior to the researchers thesis defense, the data will be excluded from the researchers analysis. However, once the thesis is approved and deposited into the e-commons, the data cannot be removed. You will not at any point during this study be made to feel uncomfortable or put at risk.

If you give consent to participate in this research study, please sign the accompanying *Consent Form* and return it **to me**. Your signature on this form indicates your understanding of this research study and its procedures, and that you give your informed consent to participate. Please keep this letter and a copy of the consent form for your own information and records. A summary of the final results of this study will be made available to all participants who provide an email address on the consent form.

If you have any questions about this research project or your child's involvement, please contact **Victoria Dempsey** victoria.dempsey@msvu.ca. You may additionally contact my Thesis supervisor, **Dr. Joan Turner** at (902) 457-6750 or by email at joan.turner@msvu.ca. If you have any questions or concerns about the ethics of this study or would like to speak to someone who is not directly involved, you may contact the chair of the University Research Ethics Board c/o MSVU Research and International Office at (902) 457-6350 or through email at research@msvu.ca.

Thank you in advance for your consideration of this research study and for considering your participation.

Sincerely,

Victoria Dempsey, Master of Arts (CYS) student
Bachelor of Applied Arts (CYS)
Mount Saint Vincent University

Observations of Children's Health Care Play

INFORMED CONSENT

By signing this consent form, you are indicating that you have fully read and understand the above information and agreed to allow the researcher to conduct the study in your classroom, and to participate in an interview at the end of the observational period. You will be given a copy of the consent form for your files.

Participant Signature

Date

Researcher Signature

Date

Consent to Digital Record the Interview

I understand the interview will be digitally recorded and that quotes may be used in future presentations and publications. However, pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.

Participant Signature

Date

Email Address of the Study Summary

Please provide an email address if you are interested in receiving a summary of the research study after it is completed. _____

**APPENDIX C: INFORMATION: INVITATION TO PARTICPATE IN A RESEARCH
STUDY
PARENT/GUARDIAN**

(Letterhead)

I invite your child to participate in a research study *Observations of Children's Health Care Play*. This research study will be conducted by Graduate student Victoria Dempsey, in fulfilling the requirements of the Department of Child & Youth Study Master's Thesis, and as approved by the Research Ethics Board at Mount Saint Vincent University. This project has additionally been cleared by the Child Study Centre Director. Dr. Joan Turner, Associate Professor Child & Youth Study is the supervisor for my research project.

The purpose of this research study is to extend health care play opportunities into the child care setting and observe and document children's play with health care related materials.

This research study aims to address the following research questions:

How do children play with health care related materials?

What categories of medical play can be observed?

In what ways does the children's play change over the observational period?

What can Learning Stories tell us about children's prior and new knowledge about health and health care (e.g., health literacy)?

Should you agree to participate in this research study, while in the classroom or play area your child may be involved in the following way:

Children in the child care centre will go about the normal activities of the day. The researcher will enter the classroom as a guest to introduce health care related play materials and document children's play over a 20-day period. The focus of the study is the children's play and not the response of individual children. The researcher will make notes, take photographs and collect artifacts of the children's play. Assent from the children will be ongoing as the researcher will ask for permission to document, e.g., can I take a photo of the stethoscope on the doll while you listen to her heart? Can I make notes on what you said about the medicine cup? Is it okay to take a picture of your creation of band aids and tape?

At the start of each new day the researcher will post a learning story for the children, teachers and others to see. The learning story is a visual representation of the child's play assembled with notes, photographs and artifacts from the previous day. Though

engagement with the learning story, children often express opinions, extend their ideas and make suggestions for new materials to be added to the health care play.

The use of the health care related materials and learning stories in the classroom introduces variations to standard early childhood education activities where materials in the classroom are adjusted to address the emerging needs and interests of the children and where the open display and documentation of the children's activities are a part of the curriculum. Children are accustomed to teachers documenting their activities through notes, photographs and collection of artifacts (e.g., art work, scribbles/writing, creations). Children are also accustomed to engaging with new adults in the environment with the support of their caring and responsive teachers.

Should you allow your child to participate in this research study, your child's identity will be protected in the following way:

- All field notes collected will focus on the play and not the individual child.
- Photographs will be taken intentionally to avoid the inclusion of identifying features (e.g., face, name tags)
- Artifacts collected will have any identifying information removed (e.g., name, initials)
- Pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.
- Only the primary researcher student, and her Thesis supervisor and committee, will have access to the field notes, photographs and artifacts collected as data.
- All paper and digital data will be located in files on password protected laptop or computers.
- Data will be deleted after a maximum of five years.
- Learning stories will be displayed in the Child Study Centre, may be used for teaching in the department of Child and Youth Study and will be included in future publications.

Your child's participation in this study is completely voluntary. You are free to withdraw your child from this study at any time, with no negative effect or consequences to you or your child. Data associated with your child will not be collected subsequent to your withdrawal from the research study. Additionally, should your child decline to participate during an observation session, the researcher will immediately respect your child's wishes. Your child will not at any point during this study be made to feel uncomfortable or put at risk.

If you give consent to participate in this research study, please sign the accompanying *Consent Form* and return it to the Child Study Centre Director who will pass it on to me. Your signature on this form indicates your understanding of this research study and its procedures, and that you

give your informed consent for your child to participate. Please keep this letter and a copy of the consent form for your own information and records. A summary of the final results of this study will be made available to all participants who provide an email address on the consent form.

If you have any questions about this research project or your child's involvement, please contact **Victoria Dempsey** victoria.dempsey@msvu.ca. You may additionally contact my Thesis supervisor, **Dr. Joan Turner** at (902) 457-6750 or by email at joan.turner@msvu.ca. If you have any questions or concerns about the ethics of this study or would like to speak to someone who is not directly involved, you may contact the chair of the University Research Ethics Board c/o MSVU Research and International Office at (902) 457-6350 or through email at research@msvu.ca.

Thank you in advance for your consideration of this research study and for considering your participation.

Sincerely,

Victoria Dempsey, Master of Arts (CYS) student

Bachelor of Applied Arts (CYS)

Mount Saint Vincent University

Observations of Children's Health Care Play

INFORMED CONSENT

By signing this consent form, you are indicating that you have fully read and understand the above information and agreed to allow your child to participate the research study. You will be given a copy of the consent form for your files.

Name of Child _____

Participant Signature _____ Date _____

Researcher Signature _____ Date _____

Email Address of the Study Summary

Please provide an email address if you are interested in receiving a summary of the research study after it is completed. _____

APPENDIX D: Early Childhood Teacher Interview Questions

(Teachers will be provided with the learning stories to review as the interview is completed.)

Reminder: I understand the interview will be digitally recorded and that quotes may be used in future presentations and publications. However, pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.

1. What did you notice about ways in which children engaged with the health care play materials in the classroom over the observation period?
2. Did you notice the health care play materials being used for a) role rehearsal/ role reversal, b) medical fantasy, c) indirect medical play, and/or d) medically related art activities?
 - a. If yes, can you give me some examples?
3. Do any of the play activities of the children's in response to the health care play materials stand out for you? Was there anything remarkable about the play or the children's responses to the materials over the three week period?
4. What do the learning stories tell you about children's knowledge and understanding of health and health care related ideas?
5. Is there anything else you would like to add or comment on that we have not discussed?

Reminder: I understand the interview will be digitally recorded and that quotes may be used in future presentations and publications. However, pseudonyms will be used in narratives composed for the Master Thesis, as well as any future presentations or publications.

Thank you

APPENDIX E:1 Termites in My Mouth

The boy in green was the first child to come over and begin engaging with the health care materials. He picked up the doctor's kit supplies observing each instrument. He was soon joined by a boy in orange.



Taking an Interest - The two boys began talking about their roles. Boy in green, "Were the doctor's right? We got plenty of stuff." Boy in orange, "If someone broke their arm you would put this on it," he said as he held a plastic band-aid (toy).

Being Involved - The boy in orange asked the boy in green, "We're doctor dentists right?" The boy in green nodded. The children brought the materials to the loft area. I became the patient as they placed the plastic band-aids on me and looked in my mouth using the otoscope and the dental mirror.

Persistence through difficulty – The boy in orange would use his flashlight with the otoscope, place it down and then pick up the dental mirror as he looked in my mouth. I asked him if he saw anything but, he did not respond.

Expression of ideas and Feelings - He explained he was, "looking for little bugs," he paused, and said, "I am looking for termites and you have some inside your mouth."

Taking Responsibility - He explained that termites were little bugs that live inside teeth and I had gotten them from not brushing my teeth, while continually checking my mouth. Other children joined the loft area watching the boy and replicating some of his actions as they would pick up instruments he put down and begun looking inside my mouth as well.

Thoughts – The boy in orange displayed health care knowledge by carrying out the roles of health care professionals. He explained his play behaviours with enthusiasm and the children around him became interested and involved. Pretend play was demonstrated as the medical instruments were used to find the termites in my mouth. He demonstrated incorporating the health care related materials in real life health care situation.

“What is next?” – Today’s play demonstrated children’s interest in engaging in role play as health care professionals. Tomorrow I will provide additional materials to support this role reversal/ role rehearsal described by McCue, as well as provide stories related to these roles.

Appendix E:2 Kitty Doctor

Two boys carried the doctor kit to the loft. A boy in blue laid on his back and his peer, in red, began examining him with the supplies. The boy in red put on a doctor's coat and began constructing a patient bed, the boy in blue told said he was a kitty and his peer was a kitty doctor.



Taking an Interest – A blond boy came up to the loft, he observed the boys playing and picked up a piece from the medical kit.

Being Involved – The 'kitty doctor' told him that he needed to go put on a doctor's coat if he wanted to play, and pointed over to the table. The blond boy left the loft, put on a coat and came back saying, "I'm a doctor too."

Persistence through difficulty – The blond boy was not bothered by this play rule. He began engaging with the supplies, picked up the plexor and asked me what it was for.

Expression of ideas and Feelings – Immediately the kitty doctor expressed his knowledge about this instrument as he had asked the same question the day prior.

Taking Responsibility – The kitty doctor explained as well as demonstrated that this was used for the knees.

Thoughts - The kitty doctor demonstrate medical knowledge confidently through his play and explanation of a medical instrument to his peer. These play roles were continued from the day prior as well as expanded as a new patient was involved, as well as a rule developed in this play. The children communicated and engaged in cooperative play as they agreed with each other's ideas without any conflict.

“What is next?” – As the children have demonstrated some knowledge towards the roles of health care professionals. I would like to incorporate materials they may be familiar with outside of the doctor’s office, supplies they may be treated with at home.

Appendix E:3 Band-Aids and BooBoos

The health care table had four children engaged with the band-aids. As most children placed the band-aids on themselves, one child cared for her doll.



Taking an Interest – A girl in grey came over to the table when all the band-aids had been used. She looked at the doll, pulled it in to her, and gave it a squeeze.

Being Involved – I handed her the band-aids that had been placed around my fingers. She placed one on top of the other on the leg of the doll. She placed a girl cut out on the body of the doll and then scrunched up the hospital dress placing it on top and used the doctor shirts to cover the doll completely. She explained the doll was under there until she felt better.

Persistence through difficulty – She removed the doll from under the shirts and looked in the empty band-aid box for more. As there was none left she said, “That’s okay, we can use pretend band-aids!”

Expression of ideas and Feelings – Having a solution for the band-aids, she smiled and continued with her play.

Taking Responsibility – A boy had joined the table and wanted to use the doll. She continued with her band-aid play as she pointed to, and listed, different parts of the body on the boy cut out that needed band-aids: “The belly, the eye, the nose, the arm the leg, the back.”

Thoughts - Through this experience I observed a child not only demonstrate knowledge towards the anatomy of the body, but demonstrate nurturing characteristics to a doll which she provided care for. She cooperated with the other child who wanted a turn with the doll, and when the

band-aids ran out, she thought of solutions by suggesting the use of pretend ones. She demonstrated play providing care with the use of imaginary props.

“What is Next?” – Today’s play demonstrated the children’s interest in providing care with the health care related materials. Open- ended materials (shoe box, bed sheets, pillow cases) will be added to the materials to view if children continue with this type of play with non-health care specific materials.

Appendix E:4 “It’s Medicine to Protect You”

I was playing the role of a patient for two girls who were checking my eyes, ears and fixing my broken arm. They each had a doll and were the doctors as well as the mothers of their dolls.



Taking an Interest – A third girl joined the table, observing the girls who were playing doctor together, and joined in with treating me as her patient.

Being Involved – She picked up a plastic pill bottle, tipped it upside down, and held the cap underneath the hole in the bottle to catch the medicine. She then said I needed, “Half a mil,” and handed me the cup to take.

Persistence through Difficulty – The gauze pads and tape were being used around her as band-aids. She looked around the table to have some for herself but they seemed to be all used. She picked up the purple cloth and asked me if I could help her cut a small square. These were going to be used as her bandages.

Expression of Ideas and Feelings – She did not ask for more supplies but simply started creating her own. Every time I would cut a square for her, she would nod when it was big enough. She was always pleased with the bandages we made.

Taking Responsibility – She wrapped up my wrist in a long piece of the purple material. She handed me a piece of foam and asked if I could cut out a heart. She placed it on another piece of foam, cut out around and tucked it under my purple wrist wrap. She said, “It’s medicine to protect you from getting hurt.”

Thoughts - The girl created her own bandages out of non- health care related materials. The girl engage in pretend play similar to the other girls but with a sense of independence in that she created her own story and materials (e.g., purple cloth became a bandage, foam became protection).

“What is next?” - The introduction of additional open ended materials, non- health care specific may extend or enhance the health care play. Providing more of these materials may allow the children to express themselves individually in their play using experiences inspired through exposure to a variety of general materials.

Appendix E:5 What's on the Health Care Table Today?

Today there were fewer children than usual, around eight. Initially, no one seemed attracted by the health care related materials. Children were all located at the other play tables and areas in the classroom. A boy in orange came up to me and asked, "What's on the health care table today?" He and I went over to the table and began playing with the different materials.



Taking an Interest – A boy in blue joined the table and began looking at the materials and observing myself and another boy.

Being Involved – He started placing tongue depressors in different bottles and he explained they were different bottles of medicine.

Persistence through Difficulty –

Expression of Ideas and Feelings – He explained one of the bottles of medicine was so a person could never get sick. He also explained how the bottles could all have sunscreen as he saw a teacher apply sunscreen to the other children.

Taking Responsibility – Aiming the bottle over my arm, he used one hand to hold the bottle and the other to press with his index finger down on the top. I pretended to rub in the sunscreen. He would then pull back the bottle, wait, and continue to spray again.

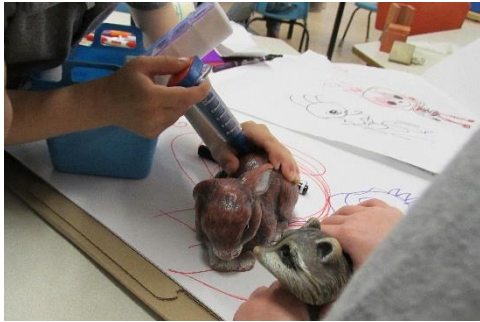
Thoughts – There was not any attention given to the health care table at the beginning of free play. It was after exploration with the children posing questions to me about the materials when

they began to get involve. Once they were involved they had no problem engaging in crafts. I am starting to notice certain children engaging in some form of health care play each day.

“What is Next?” – Additional open-ended materials (cotton balls, medicine cups, coloured paper) will be provided to observe the play behaviours, ones that may be more familiar to the children. Including these materials along with past day materials they have played with prior will hopefully encourage them to engage with the materials even if they are a bit unfamiliar.

Appendix E:6 Animal Doctors

A boy in grey, a boy in black, and the researcher were engaging in doctor play with the toy medical kit materials. They were playing “bad doctor” and the researcher was their patient.



Taking an Interest – A girl in grey, who was originally at the table with us observing the boys’ doctor play, went to the table beside us and picked up two miniature plastic animals, a squirrel and raccoon.

Being Involved – She brought them back over to the table with us and told me their names were Squirrely and Sarah. The boy in grey began treating the squirrel by giving it a needle and some pills.

Persistence Through Difficulty – When the boy in black asked, “Do they need a needle?” She said, “No” at first but almost immediately corrected herself saying, “Yes actually they do.”

Expression of Ideas and Feelings – After the needle was given to the squirrel, the girl placed the squirrel inside the blue plastic tub. They continued using the cardboard, paper and bristol board to create a place for the sick animal.

Taking Responsibility – She told a teacher at her table that her animals were not sick anymore. The teacher replied, “It must be because you are being so gentle with them.” The girl smiled and nodded.

Thoughts - Originally, I thought the girl was not interested in the doctor play when she left the table. But she brought the animals to the table and continued the doctor play with the boys as they began to treat the squirrel and raccoon. She began to treat the animals herself: she checked

their eyes and ears with the otoscope and dabbed them with cosmetic pads from the table beside us. Bringing the toy animals into the play facilitated a shift in the role of the boys from bad doctors to good doctors.

“What is next?” - Observations of the children as they extend their play with the animals demonstrates the importance of responding to the daily activity of the children with new materials.

Appendix E:7 Cotton Ball Volcano

Open ended materials presented on the table today included coloured paper, cotton balls and glue bottles. Once the children had their hands on the glue bottles, each took turns squeezing the glue all over the coloured paper.



Taking an Interest – The first boy at the table, holding two cups in his hands asked, “What are the cups for?” I said, “Use them however you like.”

Being Involved – The boy asked, “Do you want to build a rocket ship?” but once he got the glue bottle his plan changed, He glued two cups face-down, filled the bottom rim of the cup up with glue saying: “This is a volcano” and added a cotton ball on top. He continued to squeeze the glue on the top of the cotton ball until it began to pour down the sides.

Persistence through Difficulty – Once his play started, he created many ideas with the materials. One after another, different ideas were expressed: a volcano, a cup of coffee.

Expression of Ideas and Feelings – He began to shout at his friend, “Look quick before it melts!” He repeated, “Look, look!” Still trying to get his friend’s attention while he continued to squeeze the glue bottle. His voice was loud and enthusiastic as he tried again to get his friend to look.

Taking Responsibility – He continually talked through his play as it changed. Using a tongue depressor he began stirring inside the cup, “The coffee is getting low, I think I’m going to run out!” The glue now symbolized coffee instead of lava.

Thoughts – Some of the health care related materials are being used in a non-health care theme. Imagination was demonstrated through the boy's play as he continually changed his ideas using only a few simple materials. He engaged in his play with energy and excitement that attracted other children into his play.

“What is Next?” – Today, the health care related materials used in play included cotton balls and tongue depressors represent examples of medical art described by McCue. Tomorrow will involve materials with commonly expressed themes (booboos, doctors) but incorporate materials that invite a more indirect method of play to the table.

Appendix E:8 Good Doctor/ Bad Doctor

A girl was bandaging my arm when two boys joined her. The children found scars and broken bones and began to treat me with medicine and medical procedures. Eventually, the girl determined the boys were 'bad doctors' as the medicine they were giving me made me worse.



Taking an Interest – The girl who had been treating my arm observed the boys as they began their treatments. She stated they were being 'bad doctors.' She told me that she could help me with her good pills and her bottle of fairy dust.

Being Involved – The girl pressed down the top of the bottle aiming it over me and at the boys as she tried to heal me and make the boys into 'good doctors' again.

Persistence through Difficulty – One boy called himself Dr. Germs and insisted that the fairy dust would never work until he ran out of poison, "I still have lots left." Although the other 'doctors' did not go along with her approach, she continued to spray me with fairy dust when the other children were not looking.

Expression of Ideas and Feelings – The girl raised her hand in the air and placed the other on her hip and said, "Well, I am Dr. Goodness and I can make her all better!" She continued pressing down on the top of the bottle aiming it all over me.

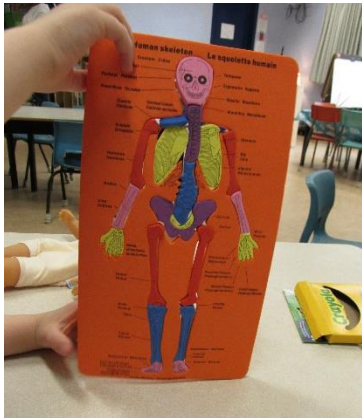
Taking Responsibility – The girl engaged confidently in her dramatic play. She expressed her belief in the power of her fairy dust and good pills with helping me feel better. She announced her role to the boys even though they did not want her to prevent their poison from working.

Thoughts – Communication throughout the role play demonstrated the positive relations among the children. The use of language and good communication skills was observed as children talked about the purpose of the medical instruments and the effect of the medicine. Each child engaged in a role. There was cooperation between the ‘good’ and ‘bad’ doctors as they carried out their play.

“What is Next?” – Today the materials used in play represent examples of role reversal/ role rehearsal described by McCue. Tomorrow, majority of materials will be open-ended. This will be done to observe if health care play will develop from less distinctively themed materials.

Appendix E:9 Skeleton Puzzle

Materials added to the health care corner today included a foam puzzle of a diagram of the human skeleton on both sides, health related picture books and blank index cards. A girl and boy explored the new materials while sitting at a table.



Taking an Interest – The girl and boy asked if they could put the puzzle together.

Being Involved – Together, they started by placing the head, feet and hands.

Persistence through difficulty – Sometimes, the girl would say, “I can’t do it,” or “I don’t know where this goes” even when the pieces were fitted in place. The girl asked for help as she worked through a trial and error sequence. She completed the puzzle multiple times eventually sharing it with me, then playing a supportive role.

Expression of Ideas and Feelings – When the puzzle was complete the girl held it up and said, “His body is now put back together.” She and the boy passed it back and forth as they smiled and looked over both sides of the body. This is when the girl noticed that the skeleton had two different sides: “This side looks different.”

Taking Responsibility – As she gave the puzzle to me to take a turn, I asked if she could help. The girl said yes and assisted just as I had done for her. When we got to the arms, she said, “I am pretty sure these were a pink colour” as she picked up the pieces to try.

Thoughts - Cooperative play was observed as the children worked together and with me.

Knowledge was demonstrated as well as curiosity around body parts: bones, the spine and hips.

Although the girl occasionally voiced frustration she showed persistence in completing a task eventually taking on the role of helper.

“What is next?” - Reintroduce some of the open-ended materials e.g., cotton balls, gauze pads along with new materials and watch for the extension of new activities as the range of available materials is expanded.

Appendix E:10 X-rays are Cool

After spending a few moments at the health care table, a boy in blue walked over to a small table that had a light in its table top and pictures of x-rays on it.



Taking an Interest – The boy in blue turned the light on for the table and saw the light shine through the x-rays. When the bones became lit up he said, “Cool!”

Being Involved – He picked up a large x-ray of the ribs and placed it up to his body, on top of his chest area. He walked around holding this image up to him showing myself, his peers and a teacher.

Persistence through difficulty – He was joined by another child. The child pointed to an x-ray saying, “Leg bone”. The boy in blue quickly corrected him. He traced his finger along both bones of the lower arm and told the boy this one had to be the arm bones.

Expression of ideas and Feelings – The boy in blue looked down at the x-ray images and saw a small image of the entire skeleton. It had highlighted sections representing the bones of the skeleton it represented. He pointed out this image to the other boy and they agreed this was an arm bone.

Taking Responsibility – The boy in blue placed one of the arm x-rays on his arm saying he needed the hand one too. As I placed it over top of his hand, he explained how he had now made an x-ray version of his lower arm and hand.

Thoughts – Recognition of the human skeleton was demonstrated during today's free play.

Between the boys, communication was carried out as one boy corrected the other when he misidentified an x-ray image but also pointed out how he know this.

“What is next?” – Being the last day of observations I want to contribute a variety of materials both open-ended and health care related. Giving a range of play opportunities and seeing how the children use these materials after multiple days of exposure to health care themed materials.