

Psychological Care for Childhood Cancer Patients

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Introduction

Charlotte, age seven, is playing with the toys at the doctor's office. Meanwhile, her parents' minds have gone blank, and their ears are ringing with the news. Faces drained of color and painted with looks of pain and fear, they stare forward in a hypnotic state as the physician declares the diagnosis. Charlotte has cancer. The disease is not sparing of even the youngest in our world, cruel as it may seem to some. However, cancer does not discriminate between the children and the elderly, or anyone in between. Now, what does this mean for Charlotte and her parents? There are several aspects of care which must be planned out, inclusive of physical, mental, emotional and spiritual needs. Psychological care of cancer patients is one of the vital components in a plan of care. Psychological care involves treating the mind, as opposed to physical care which treats ailments within the body. Psychological treatment works to amend deficits in emotional, behavioral, or mental functioning (Psychological treatments, 2019). This form of care focuses on reducing the patient's symptoms, furthering the understanding of their mental illness, comprehending problems in their thought processing and working to resolve them, altering their current maladaptive behaviors, and improving their quality of life (Psychological treatments, 2019). Such care can be provided in an individualized setting, a group setting, and even online. There are subcategories of treatment that cater to an individual's needs depending on what they are grappling with, cognitively and behaviorally.

Cancer treatment for pediatric oncology patients is severe in nature and arduous to undergo. Children often have difficulties with the procedures involved in their treatment, rather than with the cancer itself. Children may be subjected to catheter implantation, punctures of their lumbar region, IV punctures and infusions, and bone marrow aspirations, to name a few possibilities. Catheter implantation involves the placement of a soft plastic tube into a large vein

to gain access for transfusions. If the catheter is completely covered by skin, then it is connected to a small disc referred to as a port (Catheters and Ports, 2019). During a lumbar puncture, a healthcare provider will insert a needle into the patient's lower back, or lumbar region. They will then either withdrawal cerebrospinal fluid from or inject medicine into the subarachnoid space (Lumbar Puncture, 2019). Intravenous punctures involve the placement of a needle into a vein, with the goal of utilizing such access for the infusion of medications (Techniques in the Behavioral, 1994). During a bone marrow aspiration, the patient is numbed with an anesthetic and then a large, wide needle is inserted into either the breast, hip, or thigh bone. Bone marrow is then removed via the syringe attached to the needle for assessment (NCI Dictionary, 2019). Individuals receiving the aforementioned treatments endure pain and anxiety in reaction to such extensive medical interventions (Weistein & Henrich, 2013). Therefore, due to the physical strain that cancer and its treatment have on the body, "young people with cancer... are at elevated risk of psychological difficulty..." (Reed-Berendt et al., 2019, p. 1). Young individuals are also at risk for psychological strain since their brains have not finished growing, and their cognition has yet to be developed upon. Their youth impedes mental capacity when evaluating and responding to a cancer diagnosis and treatment (Reed-Berendt et al., 2019). This is in contrast to an adult diagnosis, which may be interpreted with a fully developed brain and a higher functioning cognition. Thus, adults will react differently to cancer diagnoses than children, which in turn impacts the psychological intervention each age group receives. Adults and children also delegate importance to psychological needs based on their developmental stage. This also influences how young individuals and adults receive psychological care.

Erikson's stage of development for young adults is that of intimacy versus isolation (Amidon, Monroe, & Ortwein, n.d.). In this stage, individuals are developing close relationships

with others. There is a need to share one's life with another being, and if this does not occur, individuals may struggle to maintain close relationships with everyone. In the cancer population, young adults may suffer from isolation if they do not develop psychosocially. Isolation leads to poor support teams, which are vital for psychological wellness in cancer patients. Consequently, psychological care for young adults must focus on the developmental need to open oneself to others and form stable social and emotional ties. As young adults age into middle adulthood, they are tasked with preparing the next generation. This involves aiding the development of others through mentoring, volunteering, and raising children. If a middle-aged adult is experiencing treatment for cancer, they may not be physically or psychologically available to mentor and provide support to the younger generations. They may not be able to produce children as well due to infertility caused by cancer care. This can leave a person feeling stagnant in the world, and as though they have little importance or contribution to society (Amidon, Monroe, & Ortwein, n.d.). Psychotherapy must then be delegated to assist with these emotions, respectively. When people reach late adulthood, they are expected to reflect on their life with a sense of pride in all they have accomplished. If they view their life with the notion of having accomplished nothing, they may experience intense feelings of despair and depression. Cancer is a crippling diagnosis, and can eat away at a person's free time to explore and accomplish their lifetime goals. In late adulthood, cancer patients may need psychological therapy to aid in feelings of despair since they may not have lived what they deem to be a fulfilling life.

Childhood developmental expectations vary from those of adulthood, and therefore impact psychological treatment modalities and focuses. A child is expected to go to school and obtain information, as well as establish bonds with their peers. As a child creates friendships, they in turn grow their self-esteem. When children gain an understanding of how the world

works and why, they gain competency. This aids in a feeling of value within society, and produces a sense of pride in what the child has accomplished. If a child fails to thrive in comparison to peers, they will mentally measure themselves as inferior. These inferiority complexes will carry on into adolescence and adulthood (Amidon, Monroe, & Ortwein, n.d.). Therefore, it is vital for children, ages six to twelve, to grow self-esteem as they fulfill expectations and achieve success in relationships, school, and activities. As a child ages further into adolescence, they are expected to understand who they are and how they actively function within society. An older child, within the ages of twelve to eighteen, is expected to find personal interests, and identify what they believe in. Not only will they identify their beliefs, but they will also use them to problem solve in certain situations. These children begin the journey of discovering how they will establish themselves in the adult world (Amidon, Monroe, & Ortwein, n.d.). At this stage in life, futuristic identity gains importance along with current identity. If a child is suffering from a severe illness, they may not experience these stages at the expected times. This can negatively impact a child's mental wellbeing through feelings of inferiority and confusion of self-identity. Hence, the need for age considerations in treatment must be highlighted so that psychological intervention may address age related emotional responses.

Both adults and children need psychological intervention within their cancer treatment plan. Adult cancer patients are exposed to significant psychological stress, with 50%-85% developing psychological disorders (Fathi & Akhlaghifard, 2019). In all cancer patients, the psychological state should be evaluated for effective treatment modalities. Psychological factors play a large role in pain perception for patients with cancer (Fathi & Akhlaghifard, 2019). In both adult and childhood cancer patients, psychological factors impact the developmental course. Nonetheless, there are special considerations for working with the young patient population. In

most cases, if not all, a legal guardian will be making the medical choices, and will voice concern in place of the child. Parental figures become patients too, in the sense that they too are impacted by the diagnosis and respond accordingly. This is challenging as the nurse and health care providers must accommodate the needs of the parent into the child's plan of care. Studies often speak of parental opinions and emotional hardships following the diagnosis of a childhood cancer (Sulkers et al., 2014). Based on current literature, it can be synthesized that the voice of children concerning their own care is partially muted by the deafening questions and concerns of the involved guardian. Nonetheless, children are voicing their own needs for psychological guidance to aid them in comprehending new negative emotions, and their desire for "support for low mood to be accessible and available" (Ruccione, Yani Lu & Meeske, 2013).

Cancer treatment begins at the point of diagnosis, and continues until the individual has reached the point of physical and psychological stability. When remission occurs in children with cancer, psychological stability is not always achieved simultaneously. Rates of survivorship have increased over the past several years due to technological development (Weinstein & Henrich, 2013). As a child reaches the finale of the battle with cancer, emotional support must be considered for continuation. Relapse is a looming possibility, and survivors may be overwhelmed by this prospect. The hardships of intensive treatment may have yet to ease their grasp on the child's psyche as well. Adjustment to a cancer-free life is not free of psychological burden. Therefore, when making a plan of care for the patient, nurses and health care providers must not write patients off at the completion of physical treatment. Psychological intervention must be implemented from diagnosis and maintained until the patient is deemed mentally stable. The time period is not defined by numbers, but instead by milestones made to achieve psychological competency.

Frequently Used Terms

Quality of life (QOL) will be a phrase frequently utilized within the topic of childhood cancer patients. This refers to a certain standard of happiness, comfort, and physical well-being that an individual experiences. These domains add up to fulfill the requirements that make life worthwhile. Therefore, if the quality of life is low, a person is not receiving adequate care on both materialistic and intangible levels. Oncology is the study and treatment of cancer, and pediatric oncology is a division of this work that specifically deals with children. Chemotherapy is a medicinal treatment used in the course of cancer care. This form of treatment pumps powerful chemicals throughout the body to kill cancerous cells. Health care professionals will also be frequently discussed, and are people who devise health care to the general population. Primary care providers are practitioners who oversee the care of a population with similar medical needs. Psychology is the study of the mind and how it functions, as well as the behavior derived from said functioning. Psychological interventions are measures taken to influence the mind and how it functions. Psychosocial care is treatment that focuses on the relationship between social factors and a person's behavior and thought. Childhood cancer patients are a population of pre-adulthood cancer patients within the age range of three to eighteen.

Significance in Nursing

From start to finish, nurses play a vital role in holistic care. They are at the forefront of physical care in the reception and delivery of orders. A strong nurse-patient relationship lays the foundation for productive care and fortifies the patient's experience (Nadeau, Pinner, Murphy & Belderson, 2017). They attend to the emotional and spiritual needs of their patients and the patient's family members, and educate on vital topics pertaining to diagnosis and care plan. When dealing with children, nurses must be competent in how to deliver information and care,

so that the child comprehends what is happening, and why. The nurse must know how much information to divulge to the child, and when to provide updates to guardian figures. Nurses must also be aware of how to deal with mental health issues, and which interventions to carry out for a given issue. Interventions will depend on how anxiety and depression manifest themselves in this population, as well as any other psychological disorders. Not every child experiences the same emotional response to cancer diagnoses. Responses are dependent upon factors inclusive of environmental influences, personality type, and the type of cancer with which a pediatric patient has been diagnosed. Therefore, nurses must be able to assess for mental health abnormalities in pediatric oncology patients and respond in a therapeutic fashion.

Goal of Research

Research questions to address in this review of literature include: How do we collect information on the psychological wellbeing of children with cancer? How do we psychologically care for a child with a cancer diagnosis? How do we psychologically care for guardians and siblings of children with a cancer diagnosis? What is the degree of efficacy of current psychological interventions? How does psychological treatment of childhood cancer differ from diagnosis through remission? What do nurses specifically provide to children with cancer diagnoses in terms of psychological care? How may we improve psychological treatment options to adequately care for the psychological distress of childhood cancer patients?

The goal of this research is to compile current findings on the state of study relative to psychological care for childhood cancer patients. The purpose of this thesis is to conduct a literature review that examines the current evidence surrounding psychological care for children with cancer. The reviewed research will include how children respond to their diagnosis, as well as how their family members respond. Health care provider responses will also be checked for

competency and growth potential. The varying efficacy of current practices will be reviewed for success and feasibility. The nurses' role in pediatric oncology will be defined. The research will hopefully shape the need for future exploration of the subject, with the overall intention of building upon current weaknesses in findings.

Background

Prevalence of Childhood Cancer

Throughout the year of 2019, it is estimated that approximately 11,060 children will be diagnosed with cancer (Key Statistics, 2019). This number has been slowly rising over time, with notable increases in recent decades. In comparison to the total population of people battling cancer, children account for one percent (Key Statistics, 2019). In the childhood cancer population, there are a variety of types of cancers experienced. The predominant childhood cancers are inclusive of: Leukemia (28%), Neuroblastoma (6%), brain and spinal cord tumors (26%), Lymphoma (8%), Wilms tumor (5%), Rhabdomyosarcoma (3%), bone cancer (3%), and Retinoblastoma (2%). The frequency in which these cancers occur in childhood differs than that of adulthood (Key Statistics, 2019).

Prognosis

Cancer is the second leading cause of death in children. As childhood cancer populations are on the rise, so are our treatment methods. In recent years, treatment modalities have grown extensively, increasing survival rates in turn (Kiernan, Meyler & Guerin, 2010). Current survival rates of childhood cancer show that over 80% of children with cancer will survive for five or more years. This is a 22% improvement from the 58% survival rate experienced in the 1970s (Key Statistics, 2019). There is currently estimated to be 270,000 individuals in the United States who have survived childhood cancer. Therefore, 1 out of every 640 young adults, or 0.16% of

the population within the age range of 20-39, is a childhood cancer survivor (US Childhood Cancer, 2019). This survival rate is not the same across all forms of cancer, however. Many childhood cancers have a poor five-year prognosis (US Childhood Cancer, 2019). Acute Lymphoblastic Leukemia (ALL), the most common childhood cancer, used to have the highest mortality rates in the late 1900s. As mortality rates began to trend downwards due to technological advancements, Brain and ONS (Other Nervous System) cancers took the lead with the highest mortality rates of all childhood cancers (American Childhood, 2019). Mortality trends in 2010 showed significant declines rates for a variety of cancers. The most notable declines occurred in ALL, Hodgkin lymphoma, and non-Hodgkin lymphoma (American Childhood, 2019). Therefore, high survivorship can be expected in Leukemia and Lymphoma patients, while higher morbidity and mortality rates can be expected in solid and brain tumor, Wilm's tumor, and sarcoma patients (De Clercq, Fruyt, Koot & Benoit, 2004).

Remission rates, or late recurrence rates, for childhood cancer patients have received little research as survivorship has increased. Most recent studies have shown that childhood cancer survivors will experience "a cumulative incidence of recurrent disease of 4.4%, 5.6%, and 6.2% at 10, 15, and 20 years, respectively" (Wasilewski-Maskeret et al., 2004, p. 1709). If a child experiences a relapse, their chances of survival decrease as well. Nevertheless, there is an increase in survivorship with children who endure late recurrence. Life prolongation is also occurring at higher rates in childhood cancer patients who have relapsed (Grootenhuis & Last, 2001). Children who relapse furthermore rely on similar cognitive control strategies to adjust to diagnosis as children in remission. Therefore, despite differences in survival perspectives, psychological adjustment occurs similarly between patients who have relapsed, patients with secondary malignancies, and patients in remission (Grootenhuis & Last, 2001). Thus, childhood

cancer patients will require psychological care throughout the entirety of their battle with cancer, and into remission.

Racial/Ethnic, Age, and Gender Variations

In younger childhood years, males tend to have higher incidence and mortality rates of childhood cancer. Nonetheless, males and females experience similar survival rates during this time. As they age into adolescence, females have lower mortality rates and higher survival rates than males. During this time, males and females experience similar incidence rates (American Childhood, 2019). Along with age and gender variations, race and ethnicity has shown to heavily influence childhood cancer. Caucasian and Hispanic children have the highest childhood cancer incidence rates. Children who are black experience lower incidence rates of childhood cancer than Caucasian and Hispanic counterparts. However, Black children have similar mortality rates when compared to Caucasian and Hispanic children. Children who are Asian or from the Pacific Islands have lower incidence rates of childhood cancer, in comparison to Caucasian children. These children also have mortality rates that are similar in respect to Black children. The lowest mortality and incidence rates are found among American Indian and Alaska Native children (American Childhood, 2019). Incidence rate differences across ethnicities does not have a definitive explanation. The industrial development of a country may play a role in childhood cancer rates. Survivorship variations are due to several contributing factors, including “socioeconomic status, health insurance status, timely diagnosis and quality of treatment and supportive care, and genetic factors” (American Childhood, 2019, p. 26).

Prevalent Psychological Conditions

Younger individuals diagnosed with cancer are at an increased risk for psychological distress (Reed-Berendt et al., 2019). Each child handles diagnoses differently, which creates for a

variety of psychological outcomes. Childhood cancer patients often experience low mood symptoms, or depression, throughout the course of their treatment. They found it difficult to identify or label these low moods when they were experienced, since they often coincide with physical symptoms. Pediatric cancer patients nevertheless unanimously agreed that these depressive moods were challenging to manage (Reed-Berendt et al., 2019). As survival rates slowly begin to increase due to technology development and our understanding of how to treat childhood cancer, a pressing need for psychological treatment is developing (Kiernan, Meyler & Guerin, 2010). As a predominant psychological ailment, depression is often found among childhood cancer patients. This mental illness develops during the treatment process, and can continue into remission. Depressive symptoms are also similar to side effects of cancer and cancer treatment, which include drowsiness, lack of appetite, and deficits in attention and energy (Reed-Berendt et al., 2019). Depression pervasiveness reports show inconsistencies in percentages within this population. Rates have been presented from 5% up to 42%, and vary with the personal characteristics of the reporting child (Reed-Berendt et al., 2019).

Another common form of psychological distress among the pediatric cancer population is anxiety. Anxiety is a feeling of unease or nervousness produced in response to an external stimuli, and is a common response to a cancer diagnosis and treatment options. When anxiety is experienced in excess, it can be particularly harmful to the psyche. In the pediatric cancer population, there is a great deal of stress and anxiety stemming from procedures (Chen, Liu & Chen, 2017). Children do not always have the capacity to understand what is happening to them or around them, which can lead to discomfort. While there are communication techniques that foster a better understanding of procedures, children may not be able to comprehend fundamental medical assessments and could gain stress from complex treatment modalities. Furthermore,

death as a possible outcome can loom over the treatment process and create chronic stress within the pediatric population. Since coping strategies have not yet matured in childhood cancer populations, stressors may lead to the development of anxious and unhealthy coping mechanisms.

Cancer related fatigue may also be found within the childhood cancer population. This fatigue is multifactorial in nature, with physiological, biochemical, and psychological systems involved. Fatigue is not seen alone in one of the systems, and should be evaluated for its impact on the body as a whole. When cancer treatments such as chemotherapy are initiated, fatigue increases substantially. Cancer related fatigue may impact a child's quality of life. If fatigue is managed effectively, the recovery process is accelerated and a return psychological normalcy may be achieved. Fatigue may further the development of other psychological ailments, such as mood disorders and depression (Whitsett, Gudmundsdottir, Davies, McCarthy & Friedman, 2008). Therefore, recognition of fatigue early on in cancer treatment is essential in the care process of childhood cancer patients.

Upon remission, psychological distress does not disappear. It may manifest itself in the form of posttraumatic stress symptoms and posttraumatic growth patterns (Kamibeppu et al., 2010). Posttraumatic stress symptoms include flashbacks to the traumatic event, bad dreams, and pervasive, frightening thoughts about the occurrence (Post-Traumatic Stress Disorder, 2019). Posttraumatic growth refers to the time period after a traumatic event where a person surpasses developmental levels experienced prior to the event. In childhood years, cancer may cause mental trauma with lasting symptoms that continue past their treatment. This trauma may also cause a child to develop in an accelerated manner, which may then impact their psychological wellbeing (Kamibeppu et al., 2010). The significant difference in growth related to control

individuals may place childhood cancer patients at further risk for psychosocial development impairment. Such impairment would then show as incongruences between expectation and reality within Erikson's Stages (Amidon, Monroe & Ortwein).

Childhood Cognition and Innate Coping Strategies

When given a diagnosis, a child responds on a cognitive level to what their outcome possibilities are. This cognitive response then generates a coping process the child will use to deal with said diagnosis. Coping is thought to be a process involving "...behavioral and cognitive efforts to manage external and/or internal demands that are appraised as exceeding the person's resources" (O'Conner-Von, 2009, p. 232). The way a child responds to the stressful situation therefore gives rise to mental processes, coping strategies, and adaptation to available resources. These cognitive responses to a cancer diagnosis and treatment involve four control mechanisms (Grootenhuis & Last, 2001). Such control mechanisms include optimism about the situation (predictive control); giving health care workers power (vicarious control); wishing for miracles (illusory control); and obtaining knowledge to better comprehend the situation (interpretive control). Children who remain optimistic are more likely to give power to physicians and maintain wishful thinking. Children who respond with defensiveness tend to give less power to the physician and report less anxiety and depression. If a child has predictive control, they generate positive expectations pertaining to their prognosis. Children with predictive control, as well as defensiveness, show resilience in coping with the outlook of their disease process (Grootenhuis & Last, 2001).

Children also utilize problem-focused and emotion-focused coping mechanisms. In Eastern cultures, emotion-focused coping mechanisms are frequently seen in pediatric oncologic populations. These children calm themselves and work on self-control to deal with the issue of

cancer (William et al., 2010). They take an internal approach to dealing with external stressors. In western culture, children are more likely to take on a problem-focused approach when coping with cancer. These individuals will seek out the support of others to help them with their stress. The children who are problem-focused with coping will analyze the situation and attempt to alter the outcome. Core values of eastern culture may influence this differentiation in coping mechanisms. Confucianism, a popular philosophy in China, values the idea of accepting one's fate as solidified. In other words, they hold true to the belief that they cannot control their own situation and therefore should accept what will come (William et al., 2010).

Coping with cancer is an individual process, with each child taking their own approach to how they will handle the diagnosis. Young individuals with cancer learn how to process information throughout their treatment, and use personal strategies that may not be applicable to every situation. Abilities to cope with cancer fluctuate throughout the course of treatment as well. At times where it is more difficult to cope with the illness, a child with cancer may have experienced an increase in low mood (Reed-Berendt et al., 2019). This fluctuation makes the assessment of a child with cancer's coping abilities a vital component of their care. At some points in care, children will use avoidance as a coping mechanism. This strategy calls for the child to remain busy, and explore new outlets for their energy and concentration. Avoidance as a coping mechanism can have repercussions of low moods, or it can allow the child to remove themselves from the stress of rehashing what they are experiencing. At other times, children find it helpful to accept their realities and feel the full extent of the situation. These children relied on positive coping mechanisms, and used problem solving skills to decrease their depressive symptoms. Children also call upon humor to make the most of poor circumstances. In some cases, a child will cope by rationalizing difficulties as they appear (Reed-Berendt et al., 2019).

This they will do by themselves, as a natural process that alleviates stress from overwhelming circumstances.

One may look at coping as more than just an emotional process. When children cope with cancer, they mentally and behaviourally adjust to deal with the situation. These adjustments respond to the internal and external stressors of their environment. The overall process of coping can be distinguished as the cognitive recognition of a threat and the behavior response to said recognition. When a child recognizes a threat or stressor, they perceive it on an emotional level and use information processing to determine how to respond behaviourally. Thus, the coping process is heavily reliant on moods generated from a situation. This makes the evaluation of how an individual is dealing with a situation rather challenging, since coping is in part a reflection of emotional state. A child with cancer therefore may be assessed for how they are coping, so that possible consequences of the individualized coping strategies can be determined (Kush et al., 1999).

Gender Considerations

As a child develops mentally, they are also expected to develop physically within the defining characteristics of their gender. Female children have exceptionally high expectations in the eyes of society to look a certain way. These expectations involve “weight satisfaction, appearance orientation, body schema, and size perception accuracy” (Burg, 2015, p.18). While society establishes general expectations, each female child has varying emotional responses to bodily changes and development. Body image is a subjective experience that carries personal emotional responses into environmental interactions. As an adolescent patient receives a cancer diagnosis, their body image may be distorted by treatment options. Physical changes that can occur within the female adolescent cancer patient include weight loss, which appears in the form

of diminished breast size and a gaunt facial structure. The child could also experience weight gain or disfigurement, depending on the type of cancer and therapeutic treatment. Hair growth in female cancer patients may be compromised or lost, as well as nail strength. The child's skin may change in color and appearance, and they may lose some functional ability of their body. So, as other female children grow and mature into full figured young women with societally approved appearances, female children with cancer may struggle with their identity. Therefore, a central value to the female adolescent is compromised, which in turn compromises psychological and interpersonal development (Burg, 2015). Care considerations must take into account the gender of a patient so that specific identity alterations and their impact may be assessed.

In the assessment of male childhood cancer patients, body image is still a prevalent issue. Studies show that self-image concerns in childhood cancer patients does not differ across gender or age groups (Kopel, Eiser, Cool, Grimer & Carter, 1998). All oncology patients face treatments that will ultimately alter their physical appearance. Adolescents, both male and female, describe looking into the mirror and perceiving their image as looking out of the ordinary in an "ugly" or "sickly" way (Burg, 2015). This then creates a feeling of vulnerability within the population. Childhood cancer patients describe feeling exposed and feel as though they are being stared at (Burg, 2015). Adolescents generally desire to fit into certain crowds. With body image changes, they may not feel as though they are able to achieve this homogeneity among peers. Thus, social support systems may be compromised, which in turn impacts the body image of patients (Kopel, Eiser, Cool, Grimer & Carter, 1998). Physical modifications impact psychological functioning, adding to the existing emotional distress from the diagnosis and treatment (Burg, 2015). The chronic consequences of childhood cancer further influence psychological functioning of patients as their body image is distorted past the point of remission. Due to the impact of childhood

cancer on the body's functional systems, long-term physical complications can be expected (Kopel, Eiser, Cool, Grimer & Carter, 1998). Hence, psychological care focusing on body image must be delivered throughout the diagnosis and into the abeyance of cancer.

As children begin to reach the age where they plan for their futures, some may place personal importance in having a family. However, some cancer treatments, such as radiation, may lead to infertility (Forman, Anders, & Behera, 2010). Childhood cancer patients may or may not be at an age to even consider future children. If they are of pubescent age and can produce eggs or sperm to save for future reproduction, then they may wish to keep that option open. A pressing issue in survivors is that of family planning, and its great impact on quality of life. Preservation of this option has unknown impact, but studies have proven the importance to perceived value in life (Nagel et al., 2008). Communication of this matter must be done in a therapeutic way, and must cater to the child's level of comprehension. When considering psychological care for childhood cancer patients, their future social roles must be considered for current psychological and physical interventions.

Cultural and Ethnic Considerations

Variations in response to childhood cancer diagnoses may in part be due to a child's ethnicity and culture. Individuals of Chinese descent, for example, have notable cognitive differences in terms of processing and reacting to information. Chinese children with cancer are more submissive in nature, and pale to the creative reasoning of western thought. This nature is bred from the cultural importance of conformity and obedience to societal expectations. Chinese culture also dictates that one must accept their fate without question (William Li et al., 2010). The psychological care of these individuals must reflect cultural considerations. If a child practices a language that is not the primary language of a hospital, then their psychological

response may be that of stress due to barriers in communication. In Spanish speaking cultures, higher levels of anxiety and lower quality of life (QoL) were reported within the pediatric oncology population. This contrasts to English speaking pediatric cancer patients, who reported lower levels of anxiety. Parental response to childhood cancer across ethnicities varies too, and influences the response of the child with cancer. Psychological care for children whose primary language is not English may experience higher anxiety levels, influenced by higher anxiety levels in their parents (Wahi et al., 2016). Therefore, interventions must take into account the ethnicity, culture, and language of a child and their parents or guardians.

Familial Impact

In childhood cancer, parental involvement is very influential within the course of treatment and the child's mental processing of the diagnosis. When a child is diagnosed with cancer, they may not have yet reached an age where they can accurately comprehend the course of care. Furthermore, children and adolescents have difficulties understanding on how to communicate their quality of life (QoL) as well. For this age group, proxy reports can be made available to obtain data on children with cancer's QoL. Proxy reports are utilized in cases where the child is too young to understand the information on a questionnaire, or when they are too sick to complete one by themselves (Yeh, Chang & Chang, 2005). Nonetheless, this reporting method makes room for error. Discrepancies have been found in the comparison of child self-reports and parental proxy reports. Older children with less autonomy tend to report less consistently with parental findings, as opposed to younger children. Older children with more autonomy, on the other hand, tended to report more consistently with parental findings (Yeh, Chang & Chang, 2005). Parents have heavy influence on psychological care by voicing their opinion of how well

their child with cancer is mentally. They also impact children with cancer's reported wellness through their delegation of freedoms.

The bonding of a family also supports the psychological wellbeing of children with cancer. Increased cohesion in a family leads to optimistic child outcomes. Children with cancer who are receiving treatment are more likely to cope psychologically if they have a positive, cohesive family environment (Santos, Crespo, Canavarro & Kazak, 2015). When providing psychological care to childhood cancer patients, family functioning must be taken into consideration. There is a mutual care dynamic that occurs within families when children are diagnosed with cancer. This mutual care dynamic consists of the child with cancer and the parent worrying about how the other will emotionally handle situations, while trying to protect them from devastating truths (Weaver et al., 2016). This can lead to decreased communication between child and parent, thus creating a silent family environment. Psychological care is then impacted by the need for social change within the family.

Family support of a child with cancer is integral to the child's psychological functioning. When coping with a cancer diagnosis, support from family members is of central importance. Children, both young and old, desire support from their family members during cancer treatment. In turn, the diagnosis of cancer in children impacts the family as well. In some cases, the dynamics of families improve with a childhood cancer diagnosis (Hughes, Williams & Shaw, 2017). Family environment is influenced by and is influential towards the psychological functioning of childhood cancer patients. Part of the family environment involves siblings of children with cancer. Research indicates that siblings of children with cancer experience emotional distress, and require social support and therapy to manage such distress. Siblings of children with cancer undergo discomfort with changes in family dynamic as well (Hancock,

2011). This adds another dimension to the psychological care of a child, as their siblings' ability to cope with the cancer diagnosis further influences the family dynamic.

Final Thoughts

Psychological care of a childhood cancer patient must take into account several aspects of the child's life. The developmental age and functioning of a child lays the groundwork of what a child with cancer may need in terms of social support. The sex of a child influences how their treatment will influence psychological well-being based on body image. The core functioning of a child's psyche must be evaluated so that personality can be assessed and likely coping methods can be determined. Coping methods then lead to how a child with cancer will emotionally respond to the cancer diagnosis. If a child is from a different ethnic background, or speaks a different language, cultural competency must be utilized by the health care staff to improve psychological treatment. Health care workers may familiarize themselves with common childhood psychological responses to cancer diagnoses so that they can provide holistic care and implement therapeutic communication in everyday practices.

Health care workers must also recognize that the psychological care of childhood cancer patients does not only include the child with cancer, but also their family as well. The needs of a family whose dynamics have shifted with a child's cancer diagnosis must be addressed in a healthcare setting, for it will in turn impact the child with cancer. This provides strain on healthcare workers, as their patient load is increased by the extension of therapeutic care to family members (Nadeau, Pinner, Murphy & Belderson, 2017). By examining all participants and their respective roles within the psychological care of childhood cancer patients, this article will hopefully provide insight on the comprehensive care of childhood cancer patients.

Purpose and Main Research Points

After reviewing the literature for childhood cancer and psychological care, it can be concluded that there are areas in which improvement can be made. In many articles, the discussion of psychological repercussions occurs from the point of view of parents or health care professionals. The voice of children is lacking among current research pieces. Another area which can be elaborated on is the gender differences in psychological repercussions. Females are predominantly discussed in light of body image distortions, whereas male reactions are less discussed. Improvement for literature related to psychological reactions during both diagnosis and treatment is also necessary, as such findings pale in comparison to research done on survivorship. Furthermore, psychological wellbeing during remission and how it is cared for needs to be elaborated on in available literature.

We know what psychological reactions children have to childhood cancer, as well as how they may be treated during both their battle with cancer and in remission. We need to improve understanding of the varying types of childhood cancer psychological care available and how successful different types of care are for different children. We also must improve understanding on how psychological care is given from the start of cancer through remission. Research must be gathered for a comprehensive view of psychological care in childhood cancer, so that a better understanding of how individual components and personnel may be influential for increased efficacy and efficiency in care delivered. The goal of this research is to compile current findings on the state of study relative to psychological care for childhood cancer patients. Through a thorough literature review, current evidence will be examined for further clarification on how psychological care for children with cancer is delivered. By gathering information on what is practiced, this review also serves to discover limitations in research and suggest possibilities for future research pertaining to this topic. The main points that will be addressed in this literature

review include: the psychological care options are available to childhood cancer patients, familial involvement in the psychological care of childhood cancer patients, and health care worker involvement in the psychological care continued of childhood cancer patients.

Methods

A literature review was performed to identify the current psychological care options available to childhood cancer patients. The review was also inclusive of individuals partaking in the psychological care of childhood cancer patients, as well as the timeline of psychological care given during childhood cancer. Databases used for this review were CINAHL and Google Scholar. These databases were searched for peer reviewed articles, and the articles were published from the year 1995 to the year 2019. The manner in which relevant articles were extracted from the available research materials for this literature review was through the use of keywords. Keywords included *childhood cancer, childhood cancer patients, psychological care, childhood cancer survivors, male childhood cancer patients, female childhood cancer patients, parents of childhood cancer patients, childhood cancer health care workers, pediatric oncology, psychosocial care, psychological treatment, psychological therapy, nursing interventions, mental health, mental wellness, pediatric oncology, childhood neoplasms, psychotherapy evaluation, and psychological effects.*

The inclusion criteria for the articles that will be discussed in this systematic review are as follows:

- a. Articles must be peer-reviewed.
- b. Articles that are research studies must be IRB approved.
- c. Articles must be research studies or literature reviews.
- d. Articles about cancer patients must have focused data on childhood cancer

patients who fall within the age range of 1-18.

e. Articles are aimed at improving the psychological wellbeing and/or understanding the psychological care of childhood cancer patients.

f. Articles look at the psychological care of childhood cancer patients throughout the duration of treatment and into remission.

g. Articles must be in English or must be translated professionally.

The exclusion criteria for the articles that will be discussed in this systematic review are as follows:

a. Articles that focus on adult cancer patients who fall over the age of 18.

b. Articles that focus on a specific type of cancer.

c. Articles that focus on physiological treatment of childhood cancer.

d. Articles that focused on the psychological treatment of parents of children with cancer.

e. Articles that focused on the psychological treatment of siblings of children with cancer.

Articles taken from the databases were then reviewed for relevance. Abstracts extracted from applicable articles were also reviewed. Articles which met the inclusion criteria were then assessed to determine if they also incorporated sound methodological approaches. If so, the articles were utilized for this literature review. The final search resulted in twenty-seven articles to be reviewed.

Twenty-seven articles were utilized just for the introduction and background sections of this literature review. Nevertheless, twenty-seven articles were further reviewed for their information pertaining to the research questions in which this literature review aims to answer.

Of the twenty-six articles, the dates ranged from 2005 to 2019. Recently, within the past 10 years, twenty-one of the articles were published. Notably, there was no exclusion of articles which were not based within the United States. While articles included studies from other countries, these articles are still relevant to how children psychologically respond to childhood cancer. It is valuable to include how other countries may incorporate psychological interventions into childhood cancer treatment programs. After analyzing the technology and methodology utilized in foreign countries, it can be concluded that such resources are also available within the United States.

For this article, it is vital that the producers of available research have backgrounds in health-related studies. To understand the psychological care of childhood cancer patients, one must have an understanding of psychology, as well as the healthcare system. Nurse and doctor involvement within such research provides for information borne out of experience and points of view which can be adopted by the audience of medical professionals. Healthcare professionals understand how to treat a variety of patients physically as well as psychologically for an effective outcome.

Results

The literature review led to the compilation of twenty-six articles consisting of various outcomes and themes related to the psychological care of childhood cancer patients. Of the twenty-seven articles, four (15%) were literature reviews. All of the literature reviews were performed by surveying the literature. By using this method, writers were able to analyze relevant sources for pre-existing relationships in findings on the subject. After surveying published findings on the subject, the literature reviews comprehensively summarized existing knowledge on the topic of choice. The other twenty-three articles (85%) were research studies.

Of these twenty-three articles, eight (35%) utilized quantitative study designs, twelve (52%) qualitative study designs, three (13%) were mixed method studies. The mixed method studies utilized both qualitative and quantitative methods.

Of the twenty-seven articles, eleven (41%) were focused on the child with cancer. Four of these articles (36%) employed quantitative study methods consisting of descriptive, quasi-experimental, and randomized control test (RCT) designs. Three of the articles (27%) focused on the child with cancer were qualitative in nature, using exploratory and grounded theory designs. Three articles (27%) in this section were based on literature reviews, and one (9%) used mixed method study designs. These designs focused on the psychological care of childhood cancer patients. Psychological care was inclusive of time frames that extended into both the remission and recurrence of cancer among children. Four articles (36%) discussed the use of technology to psychologically care for the child with cancer. Three of the eleven articles (27%) discussed the importance of education as an influence on psychological well-being. Two articles (18%) focused on non-technologically based play and the importance of encouraging play in this population of patients. Two articles (18%) discussed CAM methods for the psychological care of children with cancer. Other articles discussed the impact of environment and even pets on childhood cancer patients.

Six of the twenty-seven articles (22%) primarily focused on health care workers and how they influenced the psychological care of childhood cancer patients. Three of the six articles (50%) are qualitative phenomenological studies. The other three articles consist of a quantitative descriptive study (17%) and two mixed method studies (33%). One article looks at how nursing assignments impact the psychological well-being of children with cancer and their families. Another article discusses how aware health care professionals are of their impact on the

psychological functioning of childhood cancer patients, and how they may provide interventions to their patient's benefit. One study describes the impact of play for children with cancer from the HCP perspective. A fourth article looks specifically at nurses and how they influence childhood cancer patients on a psychological level. This article provides insight into care options nurses may use to aid childhood cancer patients. Finally, there is an article in which the standardization of psychosocial care is reviewed by social workers. This article provides insight into how social workers influence the psychological wellness of children with cancer.

The remaining nine articles are focused on how childhood cancer influences the psychological functioning of families, and how care may be provided in these cases. Six of these ten articles (60%) are qualitative in nature. These articles employ phenomenological and grounded theory study methods. One of the ten articles (10%) is a literature review, and three (30%) are quantitative studies that use descriptive and quasi-experimental design methods. These articles report the quality of life of both the child with cancer and their respective family members. The mental wellbeing of the parents of children with cancer is discussed, and how this impacts the psychological care of the child with cancer. It is important to note that articles focused on the psychological care of childhood cancer patients, through the viewpoint of the parents, are included in this section. At this age range of three to eighteen years of age, a parental proxy may be designated to speak on behalf of the child (Yeh, Chang & Chang, 2005). Articles in this section also discuss psychological care that includes play and unique psychosocial intervention programs. One article discusses the palliative care interventions and how they impact psychological functioning of children with End Of Life (EOL) staged cancer.

Table I. Summary of findings: Children with Cancer

Author, Year & Article Title	Purpose	Study Design & Sample Size	Methods	Main Outcomes
<p>Post-White (2006) Complementary and Alternative Medicine in Pediatric Oncology</p>	<p>To describe a beginning approach to measuring outcomes of supportive CAM therapies in children with cancer.</p>	<p>Literature Review</p>	<p>Surveying of literature</p>	<p>For current cancer patients receiving treatment, CAM therapies can reduce procedural or symptom-related distress. CAM options offer empowerment to the patient.</p>
<p>Hughes, Ladas, Rooney & Kelly (2008) Massage Therapy as a Supportive Care Intervention for Children With Cancer</p>	<p>To assess the feasibility of integrating the body-based complementary and alternative medicine practice as a supportive care intervention for children with cancer.</p>	<p>Literature Review 70 Articles</p>	<p>Surveying of literature</p>	<p>Massage therapy may help with pain, anxiety, and depression. Massage therapy helps with psychological effects of anti-cancer treatment in children with cancer.</p>
<p>Nagel et al. (2008) Using Plain Language Skills to Create an Educational Brochure About Sperm Banking for Adolescent and Young Adult Males With Cancer</p>	<p>To make it easier for patients to read, understand, and make informed decisions about sperm banking.</p>	<p>Research study Males ages 14-18 years old *Sample size was not specified. “Several patients” were utilized for feedback. Small working group of 5 HCP</p>	<p>Qualitative grounded theory study with the implementation of education materials</p>	<p>Becoming educated about the process leads to patients possibly feeling less anxious to utilize this service.</p>

<p>O’Conner-Von (2009)</p> <p>Coping With Cancer: A Web-Based Educational Program for Early and Middle Adolescents</p>	<p>To focus on enhancing the adolescent’s knowledge of cancer, cancer treatment, and healthy coping strategies.</p>	<p>Research study 4 adolescents and their parents</p>	<p>Qualitative grounded theory study with content analysis</p>	<p>Patients wished to share their experiences. They claimed education concerning one’s cancer and the cancer treatment helps cope with hardships.</p>
<p>Li, Chung & Ho (2011)</p> <p>The Effectiveness of Therapeutic Play, Using Virtual Reality Computer Games, in Promoting the Psychological Well-Being of Children Hospitalised With Cancer</p>	<p>To examine the effectiveness of therapeutic play, using virtual reality computer games, in minimising anxiety and reducing depressive symptoms in Hong Kong Chinese children hospitalised with cancer.</p>	<p>Research study 122 children; 70 control and 52 experimental</p>	<p>Quantitative quasi-experimental study with a non-equivalent control group pretest–post-test, between-subject design</p>	<p>After one week of VR gaming, depressive symptoms decrease but anxiety symptoms remain unchanged.</p>
<p>Linder & Christian (2011)</p> <p>Characteristics of the Nighttime Hospital Bedside Care Environment (Sound, Light, and Temperature) for Children With Cancer</p>	<p>To describe nighttime patterns of environmental factors, sound, light, and temperature levels, at the bedside of children with cancer receiving inpatient chemotherapy.</p>	<p>Research study 15 patients</p>	<p>Exploratory, descriptive multiple-case study design Data was analyzed using a linear mixed model</p>	<p>The care environment was one of great noise, which impacts physiological and psychological stress levels. These levels increase, and may be adjusted by an increased effort to reduce bedside disruptions.</p>

<p>Chan et al. (2015)</p> <p>Feasibility of Psychoeducational Interventions in Managing Chemotherapy-Associated Nausea and Vomiting (CANV) in Pediatric Oncology Patients</p>	<p>To assess the feasibility of the two major components, namely, (1) relaxation, and (2) patient education, of a psychoeducational intervention.</p>	<p>Research study 20 patients</p>	<p>Quantitative quasi-experimental study with a pre-test post-test control group design</p>	<p>Statistically, relaxation and education did not heavily impact CANV. Techniques were appreciated by patients, and encouraged the intake of antiemetics.</p>
<p>Govender, Bowen, German, Bulaj & Bruggers (2015)</p> <p>Clinical and Neurobiological Perspectives of Empowering Pediatric Cancer Patients Using Videogames</p>	<p>To summarize clinical strategies for empowering pediatric cancer patients, as well as their relationship with developing a “fighting spirit” in physical and mental health.</p>	<p>Literature Review 107 Articles</p>	<p>Surveying of literature</p>	<p>Great emphasis is being placed on neurobiology-centered care. Interventions target neurocircuits which stimulate a sense of reward, pleasure, and empowerment. Videogames elicit these responses.</p>
<p>Keim-Malpass, Stegenga, Loudin, Kennedy & Kools (2015)</p> <p>It’s Back! My Remission Is Over: Online Communication of Disease Progression Among Adolescents With Cancer</p>	<p>To describe the experiences of adolescents with cancer who experienced disease progression through analysis of their online illness blogs</p>	<p>Research study 7 blogs of adolescents between 13 and 18 years of age</p>	<p>Qualitative exploratory study</p>	<p>Adolescents often normalize the news, face treatment failure, and deal with the finite concept of time.</p>

<p>McCullough et al. (2018)</p> <p>Measuring the Effects of an Animal- Assisted Intervention for Pediatric Oncology Patients and Their Parents: A Multisite Randomized Controlled Trial</p>	<p>To examine the effects of an animal-assisted intervention on the stress, anxiety, and health-related quality of life for children diagnosed with cancer and their parents.</p>	<p>Research study 106 children ages 3-17 years (46 control, 60 intervention) and 26 therapy dog-handler teams</p>	<p>Multicenter, parallel-group, RCT</p>	<p>The parents in the experimental group experienced a significant decrease in stress, while the control group did not. There were no significant differences between the groups.</p>
<p>Frygner-Holm et al. (2019)</p> <p>Pretend Play as an Intervention for Children With Cancer: A Feasibility Study</p>	<p>To develop and evaluate the feasibility and acceptability of an adult-facilitated pretend play intervention for children with cancer.</p>	<p>Research study 5 children with ongoing treatment for cancer</p>	<p>Mixed method study</p>	<p>Results indicate that there was an improvement in the child’s self-efficacy in care situations and an increase in QOL for children as well. During play sessions, there were no adverse events or an increase in worrying.</p>

Table II. Summary of findings: Health Care Workers

Author, Year & Article Title	Purpose	Study Design & Sample Size	Methods	Main Outcomes
<p>Kiernan, Meyler & Guerin (2010) Psychosocial Issues and Care in Pediatric Oncology</p>	<p>To investigate physicians' and nurses' perceptions of psychosocial issues in pediatric oncology, including their awareness of the psychosocial impact of childhood cancer on families and their knowledge and views of psychosocial interventions.</p>	<p>Research study 6 physicians and 4 nurses</p>	<p>Qualitative phenomenological study with semi-structured interviews</p>	<p>Nurses and physicians are aware of the psychosocial impact childhood cancer has on families. These medical professionals knew their individual roles in caregiving, but were not always confident on how to successfully give psychosocial care.</p>
<p>Eshelman-Kent et al. (2011) Cancer Survivorship Practices, Services, and Delivery: A Report From the Children's Oncology Group (COG) Nursing Discipline, Adolescent/Young Adult, and Late Effects Committees</p>	<p>To describe survivorship services, including the extent of services provided, resources, billing practices, and barriers to care. To describe models of care that are in use for childhood cancer survivors and adult survivors of childhood cancer.</p>	<p>Research study 179 COG Institutions</p>	<p>Qualitative phenomenological study with surveying technique</p>	<p>Survivorship services are growing in number. They may lack risk-based care. Transition to adult care with communication continuity is rare. Transitions to adult providers occur as often as keeping a patient at the initial COG facility. Patients prefer to remain at COG institutions.</p>

<p>Weistein & Henrich (2013)</p> <p>Psychological Interventions Helping Pediatric Oncology Patients Cope With Medical Procedures: A Nurse-Centered Approach</p>	<p>To explore whether psychological interventions are currently used by pediatric oncology nurses to help children cope with their treatment and, if so, which interventions were considered by oncology nurses to be the most effective.</p>	<p>Research study 60 Pediatric Oncology Nurses and CNAs</p>	<p>Descriptive quantitative methods using online surveys and statistics Qualitative methods with report narratives</p>	<p>The nurses spent a few hours each day answering pediatric oncology questions. Nurses explain procedures, provide emotional support, and distract patients both cognitively and physically. This allows patients to feel empowered and in control.</p>
<p>Soares, Silva, Santos, & Depianti (2016)</p> <p>The Importance of Playing for Hospitalized Children with Cancer in Palliative Care</p>	<p>To identify the importance of playing in the palliative care of hospitalized children with cancer in the perception of the nursing team.</p>	<p>Research study 11 HCP in a public hospital in Rio de Janeiro</p>	<p>Quantitative descriptive study and qualitative research Semi-structured interviews analyzed through thematic analysis</p>	<p>Nurses claim that playing promotes joy and wellbeing, as well as growth in the relationship between the child and the healthcare professional. This play also humanizes care.</p>
<p>Nadeau, Pinner, Murphy & Belderson (2017)</p> <p>Perceptions of a Primary Nursing Care Model in a Pediatric Hematology/ Oncology Unit</p>	<p>To evaluate patient/family and nurse perceptions of our current care model through assessing gaps in its operationalization and satisfaction.</p>	<p>Research study 59 Patients 57 Nurses</p>	<p>Quantitative descriptive study using a cross-sectional design</p>	<p>Patients and families prefer a primary nurse to care for them, and report increased satisfaction when they have the same assigned nurse. Nurses agreed that the primary care model is satisfactory. Nurses believe continuity of care leads to safer patient environments.</p>

<p>Jones et al. (2018)</p> <p>Psychosocial standards of care for children with cancer and their families: A national survey of pediatric oncology social workers</p>	<p>To explore, from pediatric oncology social workers' perspectives, staffing ratios and institutional practices, current social work practices in psychosocial supportive care, and barriers to implementing the Standards in their respective work settings.</p>	<p>Research study 107 social workers from 81 cancer institutions</p>	<p>Qualitative phenomenological study using an online survey</p>	<p>The article findings indicate what is found within cancer institutions in relation to several dimensions of psychological care. Institutions are lacking accessibility psychological care options for childhood cancer patients.</p>
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Table III. Summary of findings: Family of Children With Cancer

Author, Year & Article Title	Purpose	Study Design & Sample Size	Methods	Main Outcomes
<p>Yeh, Chang & Chang (2005)</p> <p>Evaluating Quality of Life in Children With Cancer Using Children’s Self-Reports and Parent-Proxy Reports</p>	<p>To examine the agreement on QOL measures between children’s self-reports and parent-proxy reports at different points in time, including at baseline and at 6- month follow up, as well as the change in scores between 6-month follow up and baseline.</p>	<p>Research study 252 Participants 126 Children 126 Parents</p>	<p>Quantitative descriptive study using a longitudinal design</p>	<p>Parents overestimated their child’s QoL at both baseline and 6 month follow up. Type of illness may influence parent’s perceptions of QoL. Patients are more mature than their healthy counterparts. The concept of understanding is vital to a child with cancer’s comfort.</p>
<p>Woodgate (2006)</p> <p>The Importance of Being There: Perspectives of Social Support by Adolescents With Cancer</p>	<p>To detail the degree and type of social support from the perspectives of adolescent participants with cancer.</p>	<p>Research study 39 Families</p>	<p>Qualitative grounded theory research study using a longitudinal research design</p>	<p>Adolescents report that “being there” is imperative to social support. Adolescents describe how certain people impact their well-being.</p>
<p>Penkman, Scott-lane & Pelletier (2008)</p> <p>A Psychosocial Program for Pediatric Oncology Patients</p>	<p>To systematically evaluate The Beaded Journey program, a program which eases the psychological burden of childhood cancer treatment.</p>	<p>Research study 39 families</p>	<p>Qualitative phenomenological method utilizing mail-out surveys</p> <p>Descriptive, correlational, and qualitative techniques were used to analyze data</p>	<p>The program was accepted as valuable by the children and the parents. Parents rated a higher value from the program than the children. The parents would highly recommend the program to others. It provides creative, unique, therapeutic opportunities for children with cancer.</p>
<p>Ellis et al. (2013)</p>	<p>To assess the feasibility and perceived academic/psychosocial outcomes of a pilot program using</p>	<p>Research study 8 Parents 3 Patients</p>	<p>Qualitative phenomenological design with semi-</p>	<p>The program was praised for its communication benefit, as well as a way to achieve a sense of normalcy. Teachers</p>

<p>Results of a Nurse-Led Intervention: Connecting Pediatric Cancer Patients From the Hospital to the School Using Videoconferencing Technologies</p>	<p>videoconferencing facilities to connect children with cancer to their home school.</p>	<p>5 Teachers</p>	<p>structured interviews</p>	<p>reported unanimously that the class became excited about the connectivity. No bullying occurred and children grew comfortable with the patient's appearance. Teachers reported educational benefits for healthy children as well.</p>
<p>Sulkers et al. (2014) Providing Care To A Child With Cancer: A Longitudinal Study On The Course, Predictors, And Impact Of Caregiving Stress During The First Year After Diagnosis</p>	<p>To investigate the course, predictors, and impact of caregiving stress on the functioning of primary caregivers of children with cancer during the first year after a child's cancer diagnosis.</p>	<p>Research study 95 Mothers</p>	<p>Quantitative descriptive study using a longitudinal design</p>	<p>Changes in stress varied throughout time and domain. Stress decreased notably three months post-diagnosis. Stress continued to decrease thereafter during a 12 month time period. Mothers cope well with the new diagnosis in a relatively short period of time, making for successful parental functioning.</p>
<p>Friedrichsdorf et al. (2015) Improved Quality of Life at End of Life Related to Home-Based Palliative Care in Children with Cancer</p>	<p>To compare the symptom distress and QOL experience for children who received con- current end-of-life care from a PPC home care program (PPC/Oncology) with that of those who died without exposure to the PPC program (Oncology).</p>	<p>Research study 60 bereaved parents of children ages 0-17 who died of cancer between 2002 and 2008 at a U.S. tertiary pediatric institution</p>	<p>Qualitative phenomenological retrospective survey study with statistical analysis</p>	<p>The outcomes of this study show that children with advanced stages of cancer who received concurrent PPC home services experienced better QOL outcomes at the EOL (end of life).</p>
<p>Santos, Crespo, Canavarro & Kazak (2015) Family Rituals and Quality of Life in Children</p>	<p>To explore the role of family cohesion and hope as mediators of this association in children with cancer and their parents.</p>	<p>Research study 389 Portuguese parent-child dyads</p>	<p>Qualitative grounded theory using consecutive sampling</p>	<p>The meaning of family rituals positively correlates with family cohesion. Family cohesion plays a significant role in children's QoL. The stronger a family's cohesion, the better the QoL.</p>

<p>With Cancer and Their Parents: The Role of Family Cohesion and Hope</p>				
<p>Silva & Cabral (2015) Rescuing the pleasure of playing of child with cancer in a hospital setting</p>	<p>To dimension spaces and people that act on playing of children with cancer in outpatient treatment.</p>	<p>Research study 22 family members of 7 children with cancer</p>	<p>Qualitative research developed with the creative sensitive method</p>	<p>Cancer influences the way in which a family interacts playfully with the child with cancer. Therefore, nurses and HCP must learn to facilitate play within a hospital setting in order to promote childhood development.</p>
<p>Weaver et al. (2016) Establishing Psychosocial Palliative Care Standards For Children and Adolescents With Cancer and Their Families: An Integrative Review</p>	<p>To develop comprehensive psychosocial palliative care standards for pediatric and adolescent patients with cancer and their families.</p>	<p>Literature Review 182 Studies 72 Included papers</p>	<p>Survey of literature</p>	<p>There is little data on patient reported outcomes. Mutual care was expressly important to the family dynamic. Primary goals included maintaining hope, giving and receiving honest communication, and relieving pain. Access to care, the cost of care, and social support were also necessary.</p>
<p>Grégoire, Chantrain, Faymonville, Marini & Bragard (2019) A Hypnosis-Based Group</p>	<p>To assess the acceptability and feasibility of a group intervention combining self-care and hypnosis for children with cancer and their parents. To further assess the efficacy of this</p>	<p>Research study 9 Children 13 Parents</p>	<p>Quantitative, quasi-experimental study</p>	<p>Results indicate that group intervention settings with hypnosis and self-care combinations produced a positive result for the psychological well-being of children and their parents.</p>

Intervention To Improve Quality of Life in Children With Cancer and Their Parents	intervention to improve quality of life, distress, fatigue, and coping.			
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Findings

The Patient

The setting of treatment.

The typical hospital environment is not conducive to a positive mental state for children with cancer. Children must not only learn to cope with their disease, but they must also cope with the environment in which they are treated (Linder & Christian, 2011). In many of the articles reviewed, the location of where a child was being treated was of great influence to their psychological state and the care of said state. Linder and Christian (2011) conducted tests to determine the light, sound, and temperature of a hospital nighttime environment for children with cancer. Data was collected over the course of three days as a child was admitted for chemotherapy. The sound measurements taken over night at their lowest levels were 46.4 dB, which was compared to WHO (World Health Organization) recommendations of 35 dB or less for adequate sleep (Linder & Christian, 2011). Light was measured to be within desired range for sleep to occur, and showed that nurses were able to perform their assignments without higher levels of light intensity. The average temperature measured on the floor was 75 degrees, which is on the higher end of recommendations for comfortable sleeping temperatures.

The study was able to view how these measurements varied across time and days, and concluded that sound levels were of greatest disruption to a healthy sleep environment (Linder & Christian, 2011). The research suggests that nighttime hospital environments for childhood cancer patients (CCPs) may be marked by high sound levels stemming from clinical activity. This disruptive noise can lead to interrupted sleep, and must be addressed for healthier care environments for children with cancer and their families. In turn, this disruption may lead to increased psychological stress for the patient (Linder & Christian, 2011). To address this issue,

recommendations for interventions include the evaluation and restructuring of unit based practices to limit sound conduction during the night. Specifically, chemotherapeutic medications may be administered during daytime hours instead of nighttime (Linder & Christian, 2011). In this population, routine sleep schedules are developed and aid in the facilitation of healthy sleep patterns. The setting of a childhood cancer floor, inclusive of loud noise at night, may lead to reports of stress and annoyance (Linder & Christian, 2011). Thus, interventions on behalf of the staff with providing nighttime care are necessary to the psychological care of childhood cancer patients.

Not all cancer care is provided within a hospital setting. Palliative care may be delivered at home to promote psychological wellbeing for childhood cancer patients and their respective families. Friedrichsdorf et al. (2015) conducted a study to determine how palliative care provided at home impacted distress and QOL in children with cancer during the EOL stages.

Administrative data at Children's Hospitals and Clinics of Minnesota (CHC) was accessed, and parents of children who had passed away between 2002 and 2008, who had received care at CHC for cancer, were sent bereaved parent surveys (Friedrichsdorf et al., 2015). The survey contained questions pertaining to the child's QOL towards the EOL, with half of the participants having gone through home-based EOL palliative care and half having received hospital-based EOL care. The results of this retrospective survey study yielded evidence that the home-based care and hospital-based care patients experienced similar levels of suffering from pain. However, when the two groups were compared for QOL differences, the home-based pediatric palliative care (PPC) parents reported that their child had fun, ranging from "some" to "a great deal" (Friedrichsdorf et al., 2015). At home, children were visited by teachers, attended events, spent time with friends, and even went on trips. These activities, parents noted, added meaning to the

child's life. Pediatric palliative care can be given in community centers, hospice facilities, tertiary care locations, and in children's homes (Friedrichsdorf et al., 2015). This study shows that both inpatient facilities and at home care have similar results with pain and symptom management. When it comes to quality of life and psychological well-being, palliative care results indicate improvement with home-based care. This data may be taken into account when determining where primary EOL care may be provided to obtain desirable psychological outcomes in childhood cancer patients.

Technological involvement in psychological care.

The use of technology as an intervention has aided in the delivery of beneficial health care to pediatric cancer patients. Children with cancer "...often experience mental fatigue and physical and mental deconditioning during and following chemotherapy treatments, contributing to diminished quality of life" (Govender, Bowen, German, Bulaj & Bruggers, 2015, p.362). To deliver patient-centered care, healthcare professionals (HCP) have turned to technology in order to empower their patients. Patient empowerment is provided through HCP, family, and friends, and allows children with cancer to remain optimistic mentally and behaviourally. Children who are empowered also maintain positive views about their health. In a literature review conducted by Govender, Bowen, German, Bulaj and Bruggers (2015), interventions were evaluated for their impact on the neurological functioning of childhood cancer patients. These interventions have the power to affect mental reward systems, which in turn impact a child's ability to cope with and remain hopeful in adverse situations. Through the use of interactive videogames, children can be stimulated neurologically to decrease chronic stress and increase resilience (Govender, Bowen, German, Bulaj & Bruggers, 2015). By accomplishing such, mental ailments such as anxiety and depression can be challenged, and those at risk may have an improved outlook.

Since videogames are growing in popularity as a means to empower individuals and promote self-management, health-related psychological issues may be buffered by having patients utilize such technology (Govender, Bowen, German, Bulaj & Bruggers, 2015). Due to the increased likelihood of children with cancer experiencing mental health issues and a decreased quality of life, psychological adjustment is necessary. For ideal outcomes in coping, patients must adjust to the situation instead of trying to change the outcome (Govender, Bowen, German, Bulaj & Bruggers, 2015). Therefore, empowering childhood cancer patients produces a more effective result since it allows the child to adopt positive mentalities about his or her health.

Li, Chung and Ho (2011) performed a quantitative, quasi-experimental study using a non-equivalent control group pretest–post-test, between-subject design to look at how children psychologically respond to virtual reality computer games. Children admitted to a pediatric oncology floor were invited to therapeutically play with videogames during their hospital stay. The control group received routine care from the nursing staff, while the experimental group therapeutically played with the videogames. Results indicated that the experimental group had notably less depressive symptoms than the control group. It was also noted that both groups remained similar in rates of anxiety (Li, Chung & Ho, 2011). This study shows that psychological care provided through therapeutic play in the form of virtual reality videogames positively impacts the mental wellbeing of children with cancer. While this study was performed in Hong Kong, the United States has the technological development and resources to replicate these interventions. Therefore, virtual reality videogames may be utilized in clinical practice to enhance the psychological care of children with cancer.

Other than videogames, this literature review resulted in findings about web-based educational programs as a form of technological intervention. In a study conducted by

O'Conner-Von (2009), the program Coping with Cancer is evaluated for efficacy. This program was created in response to the reaction of children and adolescents to health-related issues. Since adolescents use the internet as a quick way to obtain information on health subjects, this web program was designed to readily provide knowledge to adolescents with cancer. Coping with Cancer covers information about cancer while working to enhance knowledge of treatment options and coping strategies (O'Conner-Von, 2009). In a clinical setting, nurses may access the web-based program to enhance the education of patients. This study reviews how children with cancer respond physically to increased anxiety, nausea, nightmares, and rashes resulting in fear of anticipated procedures (O'Conner-Von, 2009). This heightened distress then impacts children's social lives, as well as their continued cancer treatment. Resulting from such distress are mental ailments such as posttraumatic stress, depression, and psychogenic reactions (O'Conner-Von, 2009). Through the use of web-based educational systems, nurses may provide their patients with a variety of resources which supply current and accurate information. Interviews were conducted with adolescent participants and their respective parent(s) about the cancer experience and what they would like to see in a web-based educational program. The program was then tailored to patient recommendations (O'Conner-Von, 2009). Panels of adolescents and parents were then created to review the content for validity and potential usage. Results of the study showed that the web-based educational program could improve the coping abilities of childhood cancer patients. Furthermore, the web-based education system can be used to promote increased self-care and ease transitions into adult care (O'Conner-Von, 2009). These outcomes indicate that web-based learning programs are effective as psychological care options for childhood cancer patients.

Care in recurrence.

Technology allows people to communicate within communities comprised of similar individuals. In research conducted by Keim-Malpass, Stegenga, Loudin, Kennedy and Kools (2015), a blog analysis was performed when looking at illness blogs of children between the ages of thirteen and eighteen. This exploratory qualitative study was performed so that disease progression experiences could be analyzed for nursing intervention development. The study results showed that children's response to remission can be categorized into themes. Adolescents normalize news they receive, face treatment failure, and contemplate time as being too short or needing more of it (Keim-Malpass, Stegenga, Loudin, Kennedy & Kools, 2015). Individuals who utilized the online communication platform discussed their recurrence with posttraumatic growth. They used positive coping strategies, such as the use of humor and reliance on support from friends and family. These individuals had greater posttraumatic growth than adolescents who use avoidant coping mechanisms.

For adolescents with cancer (AWC), developmentally they desire independence in spite of their health care status as a minor (Keim-Malpass, Stegenga, Loudin, Kennedy & Kools, 2015). In parent-child dyads, there is either a sheltered partner relationship or an engaged partner relationship. In sheltered partner relationships, parents withhold information from the child with cancer. In engaged partner relationships, each member is an active, informed participant in the care process (Keim-Malpass, Stegenga, Loudin, Kennedy & Kools, 2015). Engaged partner relationships findings show that they foster the development of shared goals and advanced care planning (ACP). With respect to the theme of time constraints, AWC who blogged were able to benefit from expressive writing. This therapeutic technique also impacted families as it left a legacy of their child in print. Ultimately, the blog was useful for grief expression by the patients and their families (Keim-Malpass, Stegenga, Loudin, Kennedy & Kools, 2015). Blog technology

has a unique psychosocial impact on childhood cancer patient communities, as the illness narratives facilitate positive coping strategies and further participation in care.

Complementary and alternative medicine.

In a study by Post-White (2006), a literature review was performed to survey what was known about the impact of complementary and alternative medicine (CAM) on children with cancer. This review states that healthcare workers in pediatric oncology often work to decrease illness symptoms and lasting effects, while also promoting holistic wellbeing in patients and families (Post-White, 2006). The reviewed literature looked at the effects of massage therapy and aromatherapy for childhood cancer patients, as well as their parents. Findings from the literature on massage therapy indicated that the developmental level and age of the child greatly influenced their response. Older children provided feedback that the massage had reduced anxiety and perceived stress levels. Infants unanimously responded negatively to the massage, while young children were more likely to be made anxious by the massage (Post-White, 2006). Parents of children with cancer responded positively to the massage, and even claimed that it helped get their minds off of the situation their child was in (Post-White, 2006, p.250). Use of essential oils was also reviewed, and it was discovered that peppermint, spearmint, and ginger had positive effects by lowering reports of nausea from children going through chemotherapy. While the article claimed that both test groups for sensory and touch therapies were limited in size, such pilot studies are indicative of successful alternative interventions (Post-White, 2006). These CAM options impact overall health and wellness, inclusive of psychological well-being, by managing stress related to symptoms. They also improve patient autonomy, which aids in the psychological development of children (Post-White, 2006). CAM therapies offer patient-centered care to both the body, and the mind, of children with cancer.

Hughes, Ladas, Rooney and Kelly (2008) performed a more focused literature review on massage therapy in childhood cancer patients. They claimed that massage therapy is the most popular CAM option used by Americans to help with health-related issues (Hughes, Ladas, Rooney & Kelly, 2008, p.431). The article reviews several forms of massage that may be applied to care, and conclude that all forms work to decrease psychological distress in children who are going through anticancer treatment. Following massage therapy, children reported a decrease in anxiety and depressive moods (Hughes, Ladas, Rooney & Kelly, 2008). The article further reports that pediatric massage and reflexology are techniques that should be used among children with cancer, along with the application of light to medium pressure. This form of CAM can be offered by licensed massage therapists, or even parents who have learned massage techniques (Hughes, Ladas, Rooney & Kelly, 2008). The availability of massage therapy makes it a very accessible and applicable psychological care option for children with cancer.

Education.

Of the thirteen articles focused on the child with cancer, three (23%) discussed education options as forms of psychological interventions. Nagel et al. (2008) conducted a research study with the application of educational materials. Researchers relied on qualitative research with a grounded-theory design in order to produce a “plain language” informational packet for male adolescents with cancer, about sperm banking opportunities (Nagel et al., 2008). The booklet was created and then distributed for feedback to males aged fourteen to eighteen years old. Titled, “Sperm Banking, Information for Teens with Cancer,” this educational tool received positive feedback from the target audience, with patients claiming that they wished they had known of this opportunity (Nagel et al., 2008). Patient education on this subject becomes a psychological issue when looking at the QOL of cancer patients. Since forms of cancer treatment

have the side effect of causing infertility, QOL among childhood cancer survivors is jeopardized. If cancer patients are well educated on the ability to preserve fertility, then they may in turn preserve future QOL. Nagel et al. (2008) does claim that pediatric oncology nurses and healthcare professionals report feeling unprepared for conversations involving fertility preservation (p.221). For this psychological education intervention, the training of HCP may be necessary to achieve an effective outcome.

A pre-test post-test control group study design was utilized by Chan et al. (2015) to look at how feasible a psychoeducation intervention was into the care of twenty pediatric oncology patients between the ages of four and eleven. This intervention was applied with the goal of aiding in chemotherapy-associated nausea and vomiting (CANV). CANV can result in child and parental anxiety, as well as a compromised QOL (Chan et al., 2015). The psychoeducational approach is meant to intervene with pathways that lead to stimulating the vomiting center of the brain, thus alleviating the need to vomit. Since children within this population are of pre-operational and concrete operational developmental stages, they are thought to be more responsive to methods involving imagination and distraction (Chan et al., 2015). When implementing the interventions, the researchers split the groups into a relaxation group and educational group. The relaxation group was introduced to progressive muscle relaxation (PMR) and guided imagery (GI) sessions. The educational group was given parent/patient educational sessions that focused on teaching how to plan meals, risk assessment, and the use of antiemetics (Chan et al., 2015, p.185). The relaxation group experienced a decrease in vomiting, and the educational group increased their use of antiemetics in response to their educational session. Caloric intake of the experimental relaxation group was found to be steady. Furthermore, intervention group parents were found to have had a significant decrease in anxiety over the

course of the applied interventions (Chan et al., 2015). The use of psychoeducational interventions was found to be effective when used preventatively, prior to chemotherapy. Due to the efficacy of these interventions, it can be concluded that they positively impacted the QOL of children with cancer, and were successful as psychological care options. It is important to recognize that, while this study took place in Hong Kong, resources in the United States are available to replicate these findings. Since these intervention strategies were discovered to be highly feasible, psychoeducational interventions may be used as psychological care options for childhood cancer patients (Chan et al., 2015).

The study conducted by O'Conner-Von (2009) focusing on a program called Coping with Cancer is also an educational intervention. This program was used to elaborate on the patients' knowledge of their cancer, cancer treatment options, and the coping strategies they may use throughout their course of care (O'Conner-Von, 2009, p.230). Resulting from this qualitative study, followed by a content analysis, were findings that adolescent patients positively responded to the educational intervention. This intervention allowed them to not only understand their cancer in depth, but also to cope with their cancer and the difficulties that came with the diagnosis (O'Conner-Von, 2009). The positive coping strategies that resulted from this study positively impact the psychological functioning of the adolescent, and make it an effective care option for children with cancer.

The vitality of play.

Of the twenty-six articles reviewed, three (12%) discussed the importance of play for children with cancer. Two of the articles focused on nursing and parental involvement in the care of children with cancer. Frygner-Holm et al. (2019) performed a mixed method study focused on five children, between the ages of four and ten, in two Swedish pediatric oncology units. These

children go through intensive treatments, which lead to psychological distress for the patients and their parents. Their QOL is then impacted by the aforementioned distressing symptoms, as well as depressive moods they endure throughout their care. The Pretend Play Project, an international collaboration, works to gain knowledge on how amplifying a child's ability to participate in play impacts their coping mechanisms with cancer (Frygner-Holm et al., 2019). The outcome from six to eight structured play sessions was measured in an immediate and delayed sense. Right after play sessions, children reported high well-being, and little to no worry. Parents also reported lowered anxiety levels. As time went on during the day, well-being scores remained elevated, and worry scores remained low (Frygner-Holm et al., 2019). Self-efficacy was also measured in the study, and was found to increase after play sessions. Parents stated that post-play sessions, children had an increase in communication abilities and were able to express their emotions freely. Children furthermore felt more secure in the hospital setting (Frygner-Holm et al., 2019). This study was deemed feasible, and had no unfavorable side effects or outcomes. Pretend play allows children with cancer to communicate what they are feeling while helping them to feel better. It is a safe and applicable psychological care option to the treatment of childhood cancer patients internationally.

Pet therapy.

McCullough et al. (2018) conducted a multisite randomized control trial to test how animals influence the psychology of newly-diagnosed children with cancer between the ages of three and seventeen years. The control group, consisting of forty-six patients, was given standard care without visitation from dogs. The experimental group, consisting of sixty patients, was given standard care, plus they were visited by a dog in frequent intervals (McCullough et al., 2018). Pet therapy for this given population has been known to influence anxiety and stress levels, social ability, and mood. In addition, young children are influenced cognitively and socio-

emotionally by animals (McCullough et al., 2018). Animals allow for children to grow in compassion and play abilities, while also supporting learning. When animals are put into a hospital environment, pediatric patients have reported that it normalizes the facility and creates for a more homey feel (McCullough et al., 2018). Participants in this feasibility trial experienced no difference in stress or QOL. To the surprise of the researchers, the experimental group was not influenced by the introduction of dogs into care. However, parents of the experimental group had decreases in stress over the course of treatment (McCullough et al., 2018). While prior evidence has shown that pediatric patients' psychological response to animal therapy is positive, this article's results show that it had no psychological impact. This form of therapy may not be considered for the psychological care of children with cancer.

Health Care Professionals

Kiernan, Meyler and Guerin (2010) performed a qualitative phenomenological study involving six physicians and four nurses, to look at their views on psychosocial issues in pediatric oncology. The researchers conducted semi-structured interviews to assess awareness of the impact of childhood cancer on families, as well as healthcare professional's knowledge on psychosocial care options available (Kiernan, Meyler & Guerin, 2010). The interviewed HCP understood the impact of childhood cancer on the family, as well as on the social lives of children. They discussed how developmental age in patients plays a role in perceiving the diagnosis and prognosis of cancer. The interviewed HCP also talked of their knowledge on psychosocial interventions. Results indicated that knowledge ranged from understanding what interventions were available, to not having any understanding of the role of psychosocial professionals (Kiernan, Meyler & Guerin, 2010). Nurses were able to provide input on how they performed psychosocial support. Since they are at the front of care delivery, nurses offer

emotional support and answer the questions of patients and family members (Kiernan, Meyler & Guerin, 2010). Social workers were mentioned by the HCP as vital to the psychosocial care of childhood cancer patients. Such psychological interventions were deemed to have greater effect when offered earlier in treatment. HCP also discussed how posttreatment support should be provided to families. Researchers found that HCP voiced how more psychosocial professionals should be hired in the hospital setting, and that psychological care should become a standard of practice (Kiernan, Meyler & Guerin, 2010).

Nursing involvement in psychological care for Pediatric Oncology patients.

In a study by Weinstein and Henrich (2013), the use of psychological interventions by pediatric oncology nurses was assessed, as well as the efficacy of such interventions. A total of sixty pediatric oncology nurses and certified nursing assistants participated in this mixed method study. The HCP answered survey questions online pertaining to care in pediatric oncology. Findings showed that nurses provided psychological interventions to reduce procedural anxiety and pain for patients (Weistein & Henrich, 2013). The most effective methods used for implementing psychological care were educating patients about procedures, emotionally supporting patients by listening to their fears, holding patients' hands, and distracting patients with other stimulating activities. Other strategies used by nurses to give psychological care were involving child life specialists and parents for distraction and soothing techniques, performing relaxing massages, giving their time to patients, and showing patients empathy (Weistein & Henrich, 2013). Nurses also emphasized that play was vital to the psychological wellbeing of children with cancer. Hypnosis was a less effective method of psychological care, according to nurse responses (Weistein & Henrich, 2013). This research article provided insight into how nurses utilize psychological care options to treat children with cancer.

Nadeau, Pinner, Murphy and Belderson (2017) also focused on how nurses influence the psychological wellness of children with cancer. Through the use of a quantitative, descriptive study with a cross-sectional design, these researchers looked at how patients and their families responded to the current model of nursing for children with cancer. Fifty-nine patients and fifty-seven nurses were surveyed for the purpose of this research (Nadeau, Pinner, Murphy & Belderson, 2017). Results indicated that patients most preferred to have the same nurse assigned to them when available. Patients also reported that their education was satisfactory. Nurses reported that they thought patients received better education and care continuity when they were assigned a nurse from their primary or secondary nursing team (Nadeau, Pinner, Murphy & Belderson, 2017). Eighty percent of the nurses who were interviewed discussed the lack of primary nursing teams as negatively impacting patient care. It was recognized that some units needed to increase the size of their primary nursing teams as well. Primary nursing models promote strong nurse-patient relationships, which increase the quality of patient-centered care (Nadeau, Pinner, Murphy & Belderson, 2017). This form of nursing promotes therapeutic bonds between staff and patients, allows for continuity of care, and increases overall satisfaction of patients and nurses (Nadeau, Pinner, Murphy & Belderson, 2017, p.29). Hence, primary nursing teams impact the degree of psychological care provided to childhood cancer patients.

The use of play as a nursing intervention.

Researchers Soares, Silva, Santos, and Depianti (2016) conducted a mixed method research study to see how the use of play impacted children with cancer who were receiving palliative care. The nursing team was interviewed, and eleven HCP provided their opinion on play as a therapeutic intervention. For children who are given palliative care, it is essential that nurses are informed of how to provide educational assistance, and provide interventions that

promote the welfare of those involved (Soares, Silva, Santos, & Depianti, 2016). Playing allows children to express how they are feeling, become comfortable with the environment, and increase their self-confidence. The HCP who were interviewed stated that playing impacts a child's psychological state. Children who partake in playing have increased happiness and well-being (Soares, Silva, Santos, & Depianti, 2016, p.1050). They also develop psychosocially, as they engage with other children in play. Children also show decreases in agitation and anxiety, and increases in interaction with staff members (Soares, Silva, Santos, & Depianti, 2016). This furthers the nurse-patient relationship, which can increase the efficacy of psychological care given by the nurse for children with cancer.

The role of Social Workers in the psychological care of children with cancer.

Jones et al. (2018) performed a qualitative phenomenological study through the use of surveying, and focused on how social workers provide psychosocial care to children with cancer and their families. A total of 107 social workers from eighty-one cancer institutions were involved in this study. It was discovered that psychological interventions were not consistent with patient needs throughout the course of treatment. Financially, hospitals only assessed for hardships at the beginning of treatment (Jones et al., 2018). The lack of follow up concerning the financial burden of treatment can lead to a decrease in the QOL and emotional wellness of parents of children with cancer, and can impact a child's prognosis. It was determined that social workers must find financial counselors to work with the family of the child with cancer throughout the duration of treatment and into remission. In terms of psychoeducation, one third of hospitals are not providing the standard of care (Jones et al., 2018). This lack of education and supportive guidance throughout treatment can negatively impact the patient and family's ability to cope with cancer. Social workers must work to make sure psychosocial care is delivered in a

culturally sensitive respect. They must also provide patients with the support for changes in lifestyle, education, social relationships, and employment. Furthermore, social workers can refer patients to psychologists or psychiatrists for counseling and pharmacological assistance (Jones et al., 2018). However, psychiatry is a practice that is often inaccessible to patients, impeding their ability to achieve necessary psychological aid and furthering their chances of chronic mental afflictions. Facilities do not always have psychiatrists on staff, and if they do, the patient's insurance does not always cover the cost (Jones et al., 2018). Social workers may influence the care team to consider palliative care for patients as well, which influences the psychological well-being of children with cancer in EOL stages. This form of care can decrease emotional and spiritual suffering of the child, facilitate communication between social work and the family, and increase the QOL of the family (Jones et al., 2018). Social workers are integral to the psychological care of childhood cancer patients, and may heavily influence the course of treatment for these individuals.

Psychological services offered in remission for children.

Eshelman-Kent et al. (2011) explored the type of care provided to survivors of childhood cancer. A total of 179 Children's Oncology Groups (COG) institutions completed surveys on their models of care provided to children survivors and adult survivors of childhood cancer. This qualitative phenomenological study yielded findings on how 87% of COG institutions provided late effect (LE) services, while the remaining 13% did not (Eshelman-Kent et al., 2011, p.346). Locations of LE care included a designated LE care facility, primary oncology clinics, oncology clinics with a non-primary HCP, and survivorship programs. There were also eligibility standards to gain access into LE groups which were either called for by a protocol, by clinical status, or by physician choice (Eshelman-Kent et al., 2011, p.347). Barriers in giving care to

pediatric survivors included the education of both survivors and their primary care providers on the topic of late effects of cancer. Programs may choose to provide education to patients in survivorship so that they may understand the lasting effect of treatments, as well as gain vital knowledge about their health (Eshelman-Kent et al., 2011, p.351). This study shows that survivorship practices have not yet formed a standard model of effective care delivery for survivors of childhood cancer. Care following remission is vital for the cancer patient due to its role in education about continued health and wellness. This care is not only physical in nature, but also focuses on the psychosocial needs of survivors (Eshelman-Kent et al., 2011). The childhood cancer patient continues to have psychological care needs into remission.

The Family

The role of family.

Woodgate (2006) studied thirty-nine families, while focusing on fifteen adolescents with cancer between the ages of four and eighteen years. These individuals were interviewed and observed to see how the emotional support they received impacted their experience with cancer. Results were separated into the subcategories of emotional support from family, from healthcare workers, and from special friends. Children stated that healthcare teams became second families during the treatment process, and that the support from special friends who continued to treat them the same was valuable (Woodgate, 2006). However, support from family members was reviewed as the most important form of support during treatment (Woodgate, 2006, p.126). Effective ways in which children with cancer were given emotional support consisted of various forms of “being there.” These included: being there to keep the child positive, being there despite everything, being there to help the child feel like they have a life, being there to hold the child’s hand, being there to comfort the child, and being there to keep the child from feeling lonely

(Woodgate, 2006, p.126). Consequently, the family bond often grew due to a child's cancer. Nevertheless, the most important supportive relationship also caused stress for children. Families provide psychosocial-emotional support for children both in person and in absence (Woodgate, 2006, p.130). Family presence further stressed children when it decreased time with friends and when the child with cancer began to feel like a burden to their family. Results from this longitudinal study indicate that a strong support system aids in a child's ability to cope with their cancer (Woodgate, 2006). Relationships with friends, HCP, and most importantly family, may impact a child's psychological wellness and may impact further psychological care they are given.

Sulkers et al. (2014) elaborated on the concept of how a caregiver may influence the care of a child with cancer. By conducting a quantitative descriptive study with ninety-five mothers, the researchers viewed how the stress of these parents influenced the care they provided during the first year after their child's diagnosis. Caregiver's stress influences the psychological care provided to children with cancer. If parents have difficulties adjusting to their child's diagnosis, parental stress may cause a decrease in perceived social support by the child (Sulkers et al., 2014, p.318). It may also negatively impact family functioning. If adequate psychological care is to be provided for children with cancer, it is necessary to consider the psychological wellness and support of the child's parents. The outcome of this study showed that caregiver stress decreased over the first year following their child's cancer diagnosis (Sulkers et al., 2014). The mothers involved in the study reported higher levels of functioning over time, which could contribute to the decrease in caregiver stress. Their self-efficacy when confronting cancer-related stressors increased as well. Factors that influenced stress included the ability to mobilize resources and coping strategies. Higher levels of stress were found in both single mothers and

mother's whose child with cancer was their only child (Sulkers et al., 2014). Interventions to manage caregiver stress may be imperative to positive psychological outcomes for both mothers and for children with cancer.

Family rituals and how they impacted the psychological wellness of children with cancer, were examined by Santos, Crespo, Canavarro and Kazak (2015). When adapting to cancer, child functioning and QOL is influenced by family rituals. This qualitative grounded theory study looked at 389 Portuguese parent-child dyads to determine the effect of family cohesion. Through the collection of self-reports, researchers determined that family rituals and cohesion increased the QOL of children with cancer and their parents. Family rituals also caused for an increase in hope among those involved (Santos, Crespo, Canavarro & Kazak, 2015). The depth of meaning in family rituals is positively correlated with the hope that they bring to the family and the child with cancer. Strengthening family cohesion in specific promotes an increase in QOL for parents, and may positively impact familial wellness (Santos, Crespo, Canavarro & Kazak, 2015). While this study was conducted in Portugal, the structure of this study may be replicated within the United States for further testing. Furthermore, family rituals, family cohesion, and hope are all universally recognized concepts. Creating, adapting, and activating family rituals to address psychological needs of children is therefore feasible across cultures (Santos, Crespo, Canavarro & Kazak, 2015). By understanding family rituals and functioning, interventions may be developed to positively influence psychosocial functioning of childhood cancer patients and their families.

Palliative care for children with cancer and their families.

A literature review performed by Weaver et al. (2016) looked at standardized methods of providing psychosocial palliative care to children with cancer and their parents. Researchers

reflected on the success of physiological care, and how standardized approaches to treatment allowed children to obtain personalized care. Standardized medicinal care aggressively fights cancer and complications of the disease (Weaver et al., 2016). The researchers who performed this literature review stated that the standardization of psychosocial palliative care may also have similar outcomes. By prescribing standard measures to treat children and their families, psychosocial interventions may be formulated and applied effectively. Within the childhood cancer age group, children and families have unique needs that do not reflect those of adult cancer patients (Weaver et al., 2016). Without standardization of this form of care, the psychological wellness of patients and families may be compromised. Findings from this study show that the goals of children, HCP, and families aligned with the maintenance of hope, honest communication, and relief from pain. Families and HCP also recognized that self-care was needed to better care for the child with cancer. Results concerning palliative care impact on child and familial psychological wellness indicate that, when integrated early in treatment, palliative care significantly improves mental wellness. Standardized interventions to address areas of psychological well-being in palliative care should focus on: communication, cognitive comprehension, symptom management, practical needs, and relationships (Weaver et al., 2016, p.220). This form of treatment is integral for patients and their families to achieve longitudinal psychosocial support and satisfactory EOL care.

A previously mentioned study by Friedrichsdorf et al. (2015) discusses palliative care as a parental choice for their child with cancer. Childhood cancer patients are limited by their age to make medical decisions for themselves. When considering palliative care for children, parents must review factors that contribute to the child's holistic wellness. A child's psychological, social, and medical health must be taken into account, as well as cultural beliefs. Parents must

also consider access to physicians, respite care, and financial resources available (Friedrichsdorf et al., 2015, p.148). The choice for palliative care is not permanent, and the oncology team remains available to the patient despite the location of treatment. This study discovered that parents preferred EOL PPC to be given in the home setting. Not only did this treatment improve patients' QOL, but parents reported increases in adjustment and healing, as well as family cohesion (Friedrichsdorf et al., 2015, p.146). Palliative care impacts children and parents in a psychological sense, but is a decision most often made by the parents of childhood cancer patients.

The parental voice in childhood treatment.

An issue previously mentioned within this review is how parents often make the decision regarding medical care for children with cancer. However, parents do not always know exactly how their child is coping with cancer. In a research study performed by Yeh, Chang and Chang (2005), the self-reports and parental proxy reports of children with cancer concerning the child's QOL were examined. Researchers aimed to look at how close in agreement these reports were, and did so through the use of a quantitative descriptive study. If proxy reports are not valid assessment tools for evaluating the QOL of children with cancer, then HCP may not be able to implement QOL interventions based on them (Yeh, Chang & Chang, 2005). Since assessing QOL in children is difficult due to developmental differences, measurements are challenging to attain directly from these patients. Instead, parents are utilized for input when children with cancer cannot comprehend questionnaires or are too sick to respond by themselves (Yeh, Chang & Chang, 2005, p.355). When it came to the psychological subscale, age and disagreement in reports had a positive relationship. "Patients reported a greater negative impact on psychological functioning than did proxies..." (Yeh, Chang & Chang, 2005, p.358). Parents in this study

also overestimated their child's QOL (Yeh, Chang & Chang, 2005). Results from this study aid in understanding barriers for effective psychological care among children with cancer. Age and disease progression may inhibit accuracy when reporting the psychological functioning of this patient population.

Care options that include the patient and the family.

Many articles involved mental health findings on both the patient and the family post-intervention. It has been previously noted that family coping abilities influence the mental wellness of children with cancer (Sulkers et al., 2014). In a study using descriptive, correlational, and qualitative methods, Penkman, Scott-lane and Pelletier (2008) looked at how children with cancer and their parents responded to The Beaded Journey. Psychosocial programs provide unique therapeutic care options to patients and families. These options allow children to express themselves through art, musical activities, and creative writing sessions. These activities further help children to increase self-efficacy and provide an outlet for emotional release (Penkman, Scott-lane & Pelletier, 2008, p.106). The Beaded Journey program specifically allows children and parents to communicate their experiences and obtain tangible creations symbolizing perseverance throughout treatment, all while validating their emotional response to the situation (Penkman, Scott-lane & Pelletier, 2008). This program features a rope in which children add beads that signify certain treatments as they experience them, along with a journal to record medical care received. The journal is valued by parents as a way to honor their child's journey in cancer treatment. The rope may provide therapeutic effects for children and parents, and allows children to take pride in what they have endured (Penkman, Scott-lane & Pelletier, 2008). This psychosocial care option was reviewed by participants of the study as more valuable to parents than to children. Nonetheless, this care option was successful in providing children with a deeper

understanding of the difficulties they face (Penkman, Scott-lane & Pelletier, 2008). Not only does this psychosocial program provide valuable coping mechanisms to children with cancer and their parents, but it also creates comforting keepsakes for family members.

Parents of children with cancer often report more difficulties when adjusting and adapting to the diagnosis. With 10-30% of children experiencing psychological troubles due to cancer, one can deduce the extent of psychological impact that childhood cancer must also have on parents (Grégoire, Chantrain, Faymonville, Marini & Bragard, 2019, p.118). Hypnosis as an intervention has shown to reduce procedural anxiety and pain in children with cancer. Due to the nature of the population, the inclusion of family members in treatment is vital to the outcome. The whole family is impacted by the diagnosis of cancer in children, and kids often rely on parents for support and guidance (Grégoire, Chantrain, Faymonville, Marini & Bragard, 2019). By providing hypnosis as an intervention to children and their families, psychological wellness of those involved may improve. Furthermore, this group intervention style allows parents to improve coping strategies and adjust to both the disease and the distress they may feel (Grégoire, Chantrain, Faymonville, Marini & Bragard, 2019, p.119). Findings of this quasi-experimental study indicate that the combination of self-care with hypnosis provide for a positive psychological outcome in children with cancer and their families. This intervention was deemed feasible, and while conducted in Liège, Belgium, has potential to be replicated within the United States.

Play interventions inclusive of family dynamics.

As previously discussed, play as an intervention is vital to the psychological wellness of children with cancer. Play within a Rio de Janeiro public hospital setting was assessed by Silva and Cabral (2015) through the use of qualitative research and the creative sensitive method.

Twenty-two family members of seven children with cancer were selected for participation. These family members discussed how children with cancer are taken out of school and home life for treatment, leading to decreases in important socialization between peers and family members. Siblings are unable to play with their ill counterparts at home, and development in relationships with teachers and classmates is compromised at school (Silva & Cabral, 2015). When children are given home support for cancer treatment, social interaction is maintained and child development occurs. When children play with other children in the hospital environment, they continue to develop and take the play skills home with them (Silva & Cabral, 2015). It was found utilizing the hospital's playroom as an intervention improved children's quality of life on a psychological level, as well as physical (Silva & Cabral, 2015, p.341). Furthermore, through the learning of new games that are compatible with their cancer diagnosis, children are able to developmentally grow. Researchers in this study deemed the "rediscovery of the pleasure of playing" as biopsychosocial beneficial for children and for family members (Silva & Cabral, 2015, p.341). Hence, playing promoted an increase in energy to continue the fight against cancer among family members (Silva & Cabral, 2015). Play as a psychological care option impacts the child within the hospital, home, and school setting. It is effective for both the patient and the family as a psychological treatment.

Educational interventions for children with cancer.

It is valuable for families and HCP to consider the educational needs of developing children. Ellis et al. (2013) looked at the results of connecting children in pediatric oncology settings to their school classrooms. This nurse-led intervention involved the use of videoconferencing technologies for connection purposes. Ellis et al. (2013) reviewed the feasibility and psychological impact of this intervention using semi-structured interviews.

Teachers, parents, and patients were questioned about their experience. This intervention successfully allows for patients to maintain relationships with their peers and teachers (Ellis et al., 2013). Children were also excited to engage in this technological program. The intervention further promoted socialization of children with cancer, which can reduce anxiety and increase happiness. Children in the study reported improvements in mood, and achieved a sense of normalcy in connecting to their home school. The connection facilitated positive psychosocial outcomes, but had mixed feedback concerning academic benefit (Ellis et al., 2013, p.338). The connection of children with cancer to their school via videoconferencing is an effective psychosocial care option that depends on the teamwork of parents, children, and nurses. Nevertheless, access to technology may make this care option more difficult to integrate into standard care (Ellis et al., 2013). Further education of classmates, patients, and families must be given to increase the feasibility of this intervention.

Discussion

The Childhood Cancer Patient Receiving Psychological Care

Childhood cancer patients are a population with unique considerations for treatment options. They have developmental differences throughout the population, with varying social needs that must be acknowledged (Amidon, Monroe, & Ortwein, n.d.). Therefore, interventions that may work for younger childhood patients may not be successful with older childhood patients. This was especially applicable when utilizing CAM interventions, such as massage therapy (Post-White, 2006). Nevertheless, both massage therapy and aromatherapy had positive results on the wellness of patients. Furthermore, the environment of a childhood cancer patient plays a role in the efficacy of their treatment. If conditions are not within desired limits for adequate sleep or comfort, children may become stressed, which then adds to the psychological

burden of their illness (Linder & Christian, 2011). Children may be provided with care in the comfort of their own home, which positively impacts the QOL of both patients and their families. At home PPC was discovered to provide both the patient and the family with an increase in QOL (Friedrichsdorf et al., 2015).

Another finding pertaining to the psychological care of childhood cancer patients pertains to how technology may influence mental wellness. Due to the popularity of technology in society, technological interventions are an effective choice for psychological care (Govender, Bowen, German, Bulaj & Bruggers, 2015). Such interventions are implemented through videogames, educational websites, and blogs. The influence of technology on mental wellbeing has been directly observed, showing that virtual stimulation increases resilience and can decrease chronic stress (Govender, Bowen, German, Bulaj & Bruggers, 2015). Real life play, as opposed to online play, is also vital to the psychological wellness of children with cancer. This care option allows children to express their emotions in a comfortable environment (Frygner-Holm et al., 2019).

The educational needs of children in this population must also be considered for their impact on psychological well-being. Procedural anxiety is often seen among the pediatric cancer population (Chen, Liu & Chen, 2017). Increased awareness of the child's disease, as well as medical procedures that would be used to treat their condition, can decrease psychological distress for the childhood cancer patient (Chan et al., 2015). This care can be provided through the use of websites, informational packets, and in-person teaching sessions. If HCP take the time to provide adequate information regarding a childhood cancer to a patient, in a manner that the child will comprehend what is being discussed, the results could affect the mental outcomes of the patient's battle with cancer.

The child's psychological care needs are not complete when they go into remission. Care in recurrence of childhood cancer is vital for patients as well. While the dynamic of patients and parents can fluctuate, there are two dyads to be observed. Sheltered parent-child dyads, in which parents withhold information from the ill child, foster for negative psychological outcomes. Engaged parent-child dyads improve psychological wellness of the patient, as they allow for the development of shared goals and futuristic care planning. This relationship allows for the child to retain their independence, and have their voice heard in medical decisions (Keim-Malpass, Stegenga, Loudin, Kennedy & Kools, 2015). Thus, engaged dyads encourage positive coping mechanisms and participation in care.

HCP Involved in the Psychological Care of Childhood Cancer Patients

The healthcare team is aware of their role in the psychological care of children with cancer. However, their knowledge on how to act in order to better the psychological functioning of CCPs can be limited in cases (Kiernan, Meyler & Guerin, 2010). Nurses and social workers were noted for being frontrunners of psychological care delivery. Nurses have the power to give education, to comfort patients through emotional support, and by playing with children as a means of distraction (Weistein & Henrich, 2013). These, among other psychological interventions, proved to be effective forms of care. Nursing assignments also influenced the psychological wellness of patients. Continuity of care showed to benefit patients mentally, and results in positive feedback from both the family and the nurse (Nadeau, Pinner, Murphy & Belderson, 2017). Social workers, on the other hand, provide a different array of care options. These HCP have the ability to find financial counselors to work with the family, assess psychosocial and psychoeducational care, recommend psychiatrists, and foster discussions on

palliative care (Jones et al., 2018). Both nurses and social workers provide integral skill sets that can facilitate effective psychological interventions for children with cancer.

Health care providers are also responsible for providing care to cancer survivors. Nevertheless, barriers to this care were discovered in this review. Patients are not always given sufficient education on the late effects (LE) of cancer (Eshelman-Kent et al., 2011, p.346). Furthermore, survivorship practices do not provide a standardized form of care. This can lead to an educational deficit in survivors about the LE of cancer, as well as continued health and wellness (Eshelman-Kent et al., 2011, p.346). Therefore, HCP should provide care into remission, so that survivors of childhood cancer may continue to receive psychological care.

Familial Involvement in the Psychological Care of Childhood Cancer Patients

The support families give to their children with cancer is valued as the most important form of support by CCPs (Woodgate, 2006, p.126). Family members provide support best by “being there” for children with cancer (Woodgate, 2006). However, family presence can affect CCPs negatively when children with cancer feel as though they are a burden to their families, or when it takes away from time with the friends of CCPs. Strong support systems within the family, friends, and HCP of CCPs impact the psychological wellness and care options of CCPs. The stress of caregiver must be evaluated for the impact on CCPs psychological functioning. Parental distress may cause children to perceive a decrease in support. However, well-adjusted caregivers provide for an increase in self-efficacy in CCPs (Sulkers et al., 2014). Family rituals also impact psychological wellness of childhood cancer patients. Through the creation, adaption, and activation of family rituals, the psychological needs of CCPs may be addressed (Santos, Crespo, Canavarro & Kazak, 2015).

Another way in which family members influence the psychological treatment of children with cancer is that they may play an active role in the CCPs palliative care. Not only do they as guardians make the medical decisions for their child, but they too reap the psychological rewards from this treatment choice (Friedrichsdorf et al., 2015). The palliative care that a child with cancer is given focuses on communication, cognitive comprehension, symptom management, practical needs, and relationships (Weaver et al., 2016, p.220). This care not only elevates CCPs psychosocial support, but also improves upon that of the families. Furthermore, families and patients undergo the enhancement of EOL care by incorporating palliative care (Weaver et al., 2016). It must be considered that, with the parental voice in decision making, guardians do not always correctly interpret their child's QOL and psychological functioning (Yeh, Chang & Chang, 2005). Thus, interpretations from guardians of CCPs mental wellness may need to be reconsidered when looking at treatment options.

Psychosocial programs, such as The Beaded Journey, are also beneficial for families of CCPs. These programs provide psychosocial skills, such as coping mechanisms, to patients and family members. They also allow for patients to create tangible keepsakes for their family members, which aids them emotionally (Penkman, Scott-lane & Pelletier, 2008). Another intervention that includes both family and patient is hypnosis. The effects of hypnosis as a group intervention are effective in improving parental coping mechanisms, which in turn has an effect on the support and guidance they can provide to CCPs. Thus, hypnosis in combination with self-care can positively impact the psychological well-being of psychological children with cancer and their families (Grégoire, Chantrain, Faymonville, Marini & Bragard, 2019).

As play is important to the psychological wellness of children, so is it to the psychosocial functioning of a family. Play as an intervention strategy within the home environment promotes

the development of relationships among CCPs and their siblings. When children with cancer are given home support for cancer treatment, these relationships are supported and cognitive development is furthered (Silva & Cabral, 2015). The use of play within the hospital environment allows for children to develop and retain necessary play skills. These skills benefit the children and their family on a biopsychosocial level (Silva & Cabral, 2015, p.341). Therefore, play is a successful psychological care option which can be implemented in various settings to stimulate mental wellness.

Implications in Nursing Practice

Nurses have acknowledged their part in the psychological care of children with cancer. They know that the relationship they can develop with CCPs and families is unique to their field. However, some nurses are not aware of the extent of care options they can provide to their patients. This research paper addresses behavioral expectations that nurses who work with childhood cancer patients must uphold. It also discusses specific nursing interventions that can be applied in the treatment of CCPs. The material provided can inform nurses on the specific considerations that can be taken into account based on patient characteristics. This research also highlights how nurses can utilize hospital resources to further the care of their patients. The knowledge synthesized from experts within the field can shed light on what to expect with this patient population, common issues that could arise, and possible solutions that can be applied. New nurses, as well as those with years of experience, can use these findings and incorporate them into practices that care for children with cancer.

Implications for Policy

This literature review did not focus on policy development for the psychological care of children with cancer. However, the collected findings indicate that policy development could

improve the efficacy of psychological care given to patients. The aforementioned parties involved in the psychological care of childhood cancer patients play active roles in the betterment of CCPs psychological wellness. However, mandated psychological screening and standardization of psychological care must be incorporated into the care plan of this patient population. HCP have an obligation to prevent or detect early psychological distress in diagnosis and treatment of patients. An ideal plan of care for CCPs would incorporate screening tools at both diagnosis and throughout care to check psychological wellness. Screening for guardians of patients may also prove beneficial, as their psychological wellness impacts the mental health of CCPs as well. Then, standard forms of psychological care must be provided to the population, as to decrease risk of psychological distress within the population.

Ideally, the most successful interventions from evidence-based practice (EBP) would be applied based on an assessment of patient needs and individual circumstances. Inclusion of these practices should be trialed over the span of multiple hospitals, and then incorporated nationwide in the delivery of health care. Following the standardization of psychological care for CCPs should be the standardization of care continuity into remission and/or recurrence. Thus, the same level of care would be received by all children with cancer. However, the current issue is that no one model exists for psychological care delivery to CCPs. Researchers can take the initiative to trial this standardization of care on a grand platform, with expansion to multiple sites for in depth testing. The information from this review may be used by these researchers to determine which approaches to take for the most desirable psychological outcome. The suggestions outlined in this paper not only highlight forms of care, but also those involved in care delivery, and methods to delivering care. Policy enactment may take years to implement, especially when current

findings are pulled from smaller trials that must be developed upon. Nonetheless, the demand for the delivery of leveled care to all CCPs is evident from the results of this review.

Limitations of Study

The focus of this paper, psychological care for childhood cancer patients, is subjective in nature. People respond to situations in an individualistic manner, granting room for differentiations within the population. What may work for one person does not guarantee a successful result with another. The data collected is from the general CCP population, and focuses on findings from the early 2000s through findings from 2019. Findings from intervention implementation in the early 2000s may be inconsistent with findings from present day usage of interventions. Furthermore, some tests reviewed utilized a small patient population, furthering the need for future testing. The type and severity of cancer may cause a variation in psychological response mechanisms as well. While this research did not focus on one type of cancer, it must be recognized that patient response may be subject to change based on diagnosis.

This research was performed through a review of literature. Therefore, this article is unable to contribute new data to the subject of study. Instead, the research within is a collection of data, compiled from several studies, and condensed into one article. It is appropriate to encapsulate the current status of psychological care for children with cancer. This research should not be used in judgement of new concepts within the field. Newly formed ideas must be researched further to prove their functionality within practice.

Conclusion and Implications for Research

As we push to improve care for CCPs, we must consider the psychological care we are currently providing. From start to finish, HCP must consider the educational needs of a child with cancer. Education has proven to be a vital source of psychological care, as obtaining

knowledge on aspects of cancer care works to calm anxieties. However, it is not always provided in adequate amounts throughout care. The gaps in continuity of care for children with cancer from diagnosis into remission can cause harmful psychological consequences. As children are learning about their treatment, so are the guardians or parents. Communication and education of all parties involved leads to an informed, empowered patient population. It also can aid parents to develop necessary coping strategies, so that they may provide the support that their child needs. If education is not provided, and parents lack understanding on how to cope with CCPs situations, then a poor psychological outcome can be expected.

Communication between patients, families, and interdisciplinary teams, can work to provide children with cancer effective psychological treatment. The patient, although not yet able to make their own medical decisions, is the only individual who comprehends exactly what they are experiencing. Their needs may be interpreted by parents and HCP, but such interpretations are not guaranteed to be accurate. Thus, the patient must be personally addressed when considering treatments. Planning for futuristic events is also beneficial, and should involve the patient, care team, and parents. This allows the coordination of care that will satisfy all parties while giving the patient the care they require.

Future studies should focus on what interventions are most successful among the varying developmental groups that are seen in the childhood cancer population. Due to the age range, children with cancer do not cognitively respond to their diagnosis identically. In the future, HCP should also standardized psychological care so that it may be available to everyone in a similar format. As society begins to acknowledge mental wellness as being of similar importance as physical well-being, HCP should place emphasis on the required evaluation and treatment of psychological eudemonia among CCPs.

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