

Diagnosis Case Project: Leukemia

Kyla Johnson

Texas Woman's University

Professor Cantrell

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Introduction to Patient and Family

The patient who was just recently admitted as an inpatient on the oncology floor of the children's hospital is a six-year-old, white, female. She is accompanied by her mother and her father. She has 3 other siblings who are currently staying with grandma and grandpa until the family gets a better understanding of their six-year-old daughter's diagnosis. The oldest sibling is female age 15, the second oldest is male age 11, and the third oldest is male 8.

The patient and her family are middle class. The father currently works as the owner of an electrical company where he is in charge of scheduling and providing work for their 10 employees. The mother currently works part-time as a hairstylist when her children are in school. The mother is responsible for school drop-offs in the morning as her children attend 3 different schools, high school, middle school, and elementary school. In this family's free time, they are actively involved in extracurricular activities and church. Each of the families' children is involved in an afterschool activity and involvement with the church's youth program and attends church regularly as a family. This family is Christian and seeks community in their church and beliefs.

This family's medical history does not present anything alarming. The patient still has both maternal and paternal sets of grandparents alive. None of the patient's siblings have been hospitalized prior to this current inpatient hospitalization. The patient's parents present as healthy individuals. The family is focused on a healthy lifestyle where the mother cooks nutritious meals as they avoid eating even with their busy lifestyle. This family is also very enthusiastic about physical activity to stay healthy. Health is a priority for this family. Until their youngest daughter's recent cancer diagnosis this family has had no prior hospitalizations that were not

birth related. This family will be heavily impacted by their daughters recent cancer diagnosis as they learn to juggle parenting their other three children, the financial burden from taking time off work with only one parent working full time, and will lean onto their church for support and prayer for healing.

Diagnosis

After their daughter presented with high fevers, random bruising, fatigue, dizziness, and an appearance of pale skin the mother decided to take her six-year-old daughter to her pediatrician to get her evaluated. After routine blood work up the patient presented with extremely elevated white blood cell counts and was advised to head straight to the emergency room for further testing where she was then later diagnosed with childhood leukemia, a type of blood cancer that is common in pediatrics.

Leukemia is a type of cancer that stems from individual bone marrow, the location in the body where blood cells are formed. When an issue arises in the bone marrow leukemia cells build up in the bone marrow and drive out the normal healthy cells. When this occurs a child produces abnormal amounts of red blood cells, white blood cells, and platelets (American Cancer Society 2022). When this occurs and the cells invade the body the child or adult who has leukemia will present with various different symptoms as there are different types of leukemia that are affected by different cells.

When a child presents as anemic, or with low red blood cell counts, a child might feel fatigued, weak, cold, dizzy, shortness of breath, or even present with a paler appearance. Because red blood cells carry oxygen to all of the different cells in the body, these symptoms are possible

when cancer invades these cells (American Cancer Society 2022). When cancer affects white blood cell counts the child can have infections that persist longer than normal or infections one after another. Patients might also present with fevers with or without an infection because the white blood cells are the cells that fight off germs that invade the body and with a high amount of these cells they cannot protect against infection (American Cancer Society 2022). When a patient presents with low blood platelet counts, the type of cell that helps stop bleeding, the patient might bruise easily, have frequent nose bleeds, and even have bleeding gums (American Cancer Society 2022). According to the American Cancer Society, other symptoms from leukemia that affect other areas of the body include; bone and joint pain due to the building up of leukemia cells in bone or inside the joint, swelling of the belly due to leukemia cells that collect in the liver and spleen enlargement these organs, loss of appetite and weight loss due to enlarged organs pressing against the stomach, swollen lymph nodes as the cancer cells often spread to these areas, coughing and difficulty breathing as the cells can obstruct the airways, swelling of face and limbs due to an enlarged thymus that presses on the superior vena cava, headaches seizures and vomiting due to cancer cells spreading to the brain, rashes from the cells spreading to the mouth, and lastly extreme fatigue and weakness when a high number of leukemia cells thicken the blood and slow circulation (American Cancer Society 2022).

When these symptoms are present and a child is brought into a clinical or hospital setting many different tests can be run to diagnose leukemia. Usually the first test that is done is a test to check blood counts and a blood smear to look at the sample of cells, this is typically called a CBC or complete blood count (American Cancer Society 2022). In pediatric cases of leukemia children will have either too many white blood cells or extremely low red blood cells or platelets.

When these tests show up abnormal in order to get the official diagnosis the bone marrow must be analyzed. In order to analyze the bone marrow a bone marrow aspiration and biopsy are conducted. In this procedure the child is under anesthesia or prescriptions to make them drowsy where a thin hollow needle is inserted into the back of the pelvic bones after it is numbed and cleaned, with the hollow needle it pulls liquid from the bone marrow to test as well a small piece of the bone marrow is taken (American Cancer Society 2022). After this procedure the samples are sent to pathology for testing. MRIs, ultrasounds, PET scans, and CT scans are also used to diagnose and obtain a prognosis as these tests can detect areas to where the cancer cells have metastasis or invaded to specific site treatments.

The prognosis for children with leukemia varies from patient to patient and how they respond to treatment. Thankfully with today's advances in health care and treatment options leukemia is a type of cancer that can be treated. After a diagnosis usually a treatment team and plan is established. The patient will work with an oncology team, hematology team, surgeons, doctors, nurses, physician assistants, psychologists, social workers, rehabilitation specialists, child life specialist, and many others. The most common forms of treatment for childhood leukemia is bone marrow transplant, radiation, chemotherapy, immunotherapy, stem cell transplant. For a bone marrow biopsy the child will activate donor bone marrow from a match where it is infused into the patient's blood stream for their body to adjust to healthy bone marrow. Chemotherapy is the main treatment for children with leukemia (American Cancer Society 2022). Chemotherapy can be given through iv, central lines, or surgical ports (most common). Chemotherapy is given at a high dose for six months to a year depending on the patient followed by lower dose chemo for a longer period of time like two to three years (American Cancer

Society 2022). Many of the higher dose chemos present with several side effects including hair loss, mouth sores, loss of appetite, diarrhea, nausea, vomiting, increased risk of infection, bruising, fatigue, and secondary conditions (American Cancer Society 2022).. Chemotherapy works to kill the cancer cells in the patient's body, killing all good and bad cells in its way to kill the cancer cells. Radiation therapy is not always used and can be helpful to patients whose cancer has spread. Immunotherapy is also becoming more common as with the help of medication it helps the patient's immune system recognize the unhealthy cells and kill them(American Cancer Society 2022). With the use of modern medicine treatment for leukemia has improved, although a long, growling process with countless terrible side effects the patient's team of healthcare professionals can use these treatment options to give the child the best chances to beat the cancer.

A cancer diagnosis can be hard on not only the patient but the entire family. Seeking support during this hard time is extremely important. Social workers, child life specialists, doctors, and nurses all work to provide psychological support to patients and the family's (American Cancer Society 2022). As a cancer diagnosis can cause anxiety, stress, depression, and many more psychological effects in both patients and families it is important to seek this support. Support through Advil city for financial help, education on how to come up with a cancer diagnosis and treatment, supportive counseling, psychotherapy, behavioral interventions, medication, and community support are all important following a diagnosis (American Cancer Society 2022). As many parents might have to travel to treatment, miss work, feel guilt, feel guilt from taking attention away from other children and the financial burden of treatment is something that all families will encounter. There are alot of emotions suborning pediatric cancer

diagnosis as many parents feel helpless and unable to protect their child. The child might also become stressed as they are unaware of the complexity of their condition, what is happening, how they are feeling, how they feel helpless, why they cannot go to school, why they are losing their hair, and many more. Providing support is critical for everyone to get through this hard time.

After talking about the psychological stressors it is important to acknowledge what a child life specialist can do to help in these situations. In pediatric cancer patient child life specialists can help normalize the hospital environment for the patient. Child life specialists also help the patient, siblings, and parents understand the diagnosis, treatment, and side effects of treatment (Bonar 2022). Surrounding the leukemia diagnosis a child life specialist might provide information about what this type of cancer is, what is chemo, how chemo will affect the child's body, explain how chemo makes hair fall out, or even counsel siblings on what their sibling will be going through. Child life specialists also make it important to familiarize the child and parents with the equipment used. A child life specialist might use a medical play doll to show a leukemia patient about the equipment needed to administer chemotherapy. For example, they might place a port in the doll, let the child see the port, see where it goes, and even show how it is accessed to give the medication. Child life specialists also try to keep normalcy in the child's life while keeping them educated (Bonar 2022). Doing projects like syringe paintings, photo books, games, and other crafts can be both fun for the child yet educational as it can provide learning opportunities through conversations and familiarize the child with certain equipment. Keeping children informed and a part of conversation is of utmost importance. A child should be aware of what is happening to them and be prepared for what the medication given to them will make

them feel. A child life specialist job is to help educate the child and answer any questions they have to make the experience less scary. Child life specialists can honor both the patient, sibling, and parents. They can prepare siblings and parents to what they might expect and offer additional support and legacy projects. Keeping the whole family involved in treatment is important to keep normalcy in the patient's life (Bonar 2022). Overall child life specialists can help through many different therapeutic play activities, educational opportunities, and legacy activities.

Families are also heavily affected as parents and siblings also need support. A leukemia diagnosis can be a burden to a family regardless of the prognosis or treatment that is recommended. In many instances parents feel a tremendous amount of guilt for their child getting sick although this was completely out of their control. Parents also have the strong desire to switch places with their children as they often wish they were sick and not their child (Nurjanah 2022). Financial probabilities, sibling competition, attention to family members, and the inability to cope with important child development are all issues that can arise (Nurjanah 2022). The stress of a diagnosis can weigh heavily. Siblings often are confused how to cope and deal with their parents pouring attention elsewhere, this can cause emotional distress, behavior issues, and emotional outbursts (Nurjanah 2022). Overall a cancer diagnosis is not easy on anyone. Leukemia is a type of cancer that has a harsh treatment option with a high dose of medication with many side effects. Children, siblings, and patients must be informed about this disease prior to treatment in order to fully understand the complexity of what their future might look like.

Dialogue

CCLS: Hello Smith family, my name is Kyla Johnson and I am a certified child life specialist. Do you mind if I come in and talk with your daughter about her recent diagnosis? I read in her chart as well that you have three other children, are they here today? I can also help answer any questions you may have about her Leukemia diagnosis and what her treatment like look like. I am here to help help everyone and keep everyone informed.

Parents: Hello, nice to meet you. Thank you so much for stopping by. We have told her that she is sick and will need to be in the hospital a lot but she doesn't really get it. She just keeps asking when she can go home and go to school. This is super hard on all of us. It's hard being around her with both of us being so emotional, poor girl is super confused. We would love if you would come in and talk to her. She is also super worried about getting her port placed, she doesn't want to go to sleep again. Her siblings are gone but we hope to maybe bring them by tomorrow afternoon after her port is placed to get some family time in. We did facetime them when we got her diagnosis but the two oldest were the only ones who really understood what leukemia was. This is definitely turning our world upside down.

CCLS: I am so incredibly sorry that your family has to go through this. I cannot imagine what you are going through as this time must be super confusing and challenging. Hearing that your child has cancer is something that no parent ever wants to hear, as she begins her treatment plan I would love to stay involved and help you, your other kids, and your daughter.

CCLS: Hello, my name is Kyla Johnson I'm a CCLS. I'm not a doctor, don't worry I'm not gonna give you any pokes or any medicine but I would love to talk and play with you today is that alright with you?

Patient: Yes of course! Why are my mommy and daddy so sad? They keep crying and talking to all of the different docorts that keep coming in. They said im going to have to be here a while and come back a lot but I just want to go home and play with my friends at school.

CCLS: Im sorry but your mommy and daddy are right, you are gonna be here just a little bit more. You know how you havnt been feeling good recentrly? Well, your teeny tiny cells in your body that help fight off all of the icky germs are really sick. The bad germs are fighting your good cells and there winning. When this happens and the bad cells get all over your body you need the docorts help to get better. You have something called leukemia where the bad cells are in your blood going all over your body, thats why you hav enot been feeling good and are so tired. The doctors here want to help you get better. But in order to get rid of all of the sick cells in your body you have to get medicine. This medicine is not like the medicine you can get at home, instead you have to get it hear at the hospital so the docotors can watch you. The medincine is really strong and will attack the bad cells inyour body to get rid of hte lukemia. Because this medicine has to work so hard you might feel more sick as your body receives the medicine. The medicning will also make you loose your hair because it attacks all the cells in your body, even the ones that make your hair. You might feel really gross, really tired, have a tummy ache, any even some more icky things but that means the medicine is working and you can get back to playing with oyur friends at school sooner.

Patient: So my body is sick? WHy are mommy and daddy so sad?

CCLS: Yes! But I will be with you the whole tome helping you, playing games, and showing you some really fun things while your hear. Mommy and daddy are really sad because

they hate to see you sick. They don't want to see you sick but know that you will be strong and get better.

Patient: How do the doctors give me the medicine? Will I have to get a shot?

CCLS: Do you know how you went to sleep to get your bone marrow tested when you came to the hospital? Well you're gonna get to go to sleep again. See this little tube right here (Show her port supplies and gather medical doll), this is called a port. This little tube right here is called a catheter. When you are asleep the doctor is gonna put this catheter right under your skin by your heart. This little tube here will give the medicine by your heart so it gets all over your body quicker. Look here at the doll, this is what it will look like. You will have one too!

Patient: Will it hurt?

CCLS: You will be asleep the whole time, remember the mask that smelled like bubble gum that made you take a nap. That is what's gonna happen again, you will be asleep the entire time and won't feel a thing. Mom and dad will be there with you when you go to sleep and when you wake up, and when you wake up you can have some popsicles and put a bead on your string. Do you want to put a bead on right now? Each time you go to sleep for a procedure here, get a poke, or get medicine we can put a bead on our sting. We can call them your bravery beads. Want to pick one out now?

Patient: Yes! So I can get a lot of beads since I will be here a long time and get medicined a lot!

CCLS: That's right! Aunty other questions before I go talk with your mommy and daddy!

Patient: Nope! Thank you Kyla!

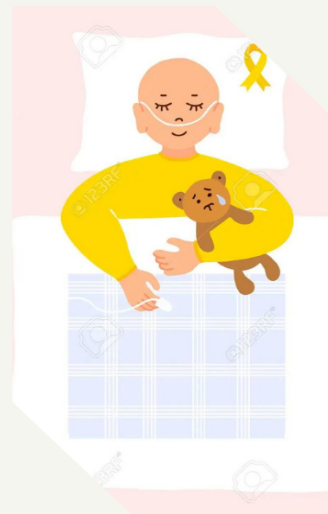
Visual Tool

CANCER:

- Is not your fault
- It is not contagious
- You might get sicker before you get better
- You might spend a lot of time in the hospital with different pokes and medicine
- The medicine might make your hair fall out
- It is ok to be sad and upset about how you feel and the things you miss

WHAT IS CANCER?

CANCER IS A TYPE OF SICKNESS THAT HAPPENS WHEN TINY CELLS IN YOUR BODY GET SICK AND ATTACK THE HEALTHY CELLS. WHEN YOU GET CANCER YOU MIGHT HAVE TO GO TO THE HOSPITAL TO FEEL BETTER. YOU MIGHT RECEIVE CHEMOTHERAPY A MEDICATION THAT KILLS CANCER, RADIATION, OR EVEN GETS PUT TO SLEEP FOR SURGERY



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Therapeutic Activity

Patient	
Age and gender identity:	Female age 6
Stage of Erikson's theory:	Industry v Inferiority
Stage of Piaget's theory:	Preoperational
Diagnosis:	Leukemia
Cultural considerations:	Christian upbringing, youngest of 4 siblings, 1 st grade student, activity involved in extracurricular activities, healthy diet.
Problem	
Psychosocial concern this activity will address:	This child will be undergoing countless treatment options that consist of many different procures, infusions, transfusions, pokes, harsh medication with side effects, and prolonged hospital stays. This child has expressed concern about fear of doing these things as anxiety has occurred surrounding these events. This activity will address the anxiety and encourage the child that they can get through these things.

Intervention	
Name of intervention:	Bravery Beads
Goals of intervention:	Provide children with bead after each procedure, medication administered, poke, etc.. The child will receive bead to symbolize how brave they were and get to carry their bead with them to remind them to be brave. Also symbolizes their journey and what they have had to go through.
Materials needed:	Yarn (child's choice), beads (assortment of many different beads of shapes, sizes, and textures), clip, tape
Overview and/or instructions:	Have child select favorite color of yarn. Cut piece 12 inch long (can tie more yarn on as treatment progresses), have bucket of beads ready (fun colors, shapes, sizes, letters for name, etc.). After each poke, procedure, medication, port access, etc. have child pick out bead and string on yarn. Tell child that they were very brave and this bead represents their bravery and what they have gone through. Allow child to clip beads on IV pole or on bed to show how brave they are and to remind them of their bravery. Make sure to tape off end of yarn so beads stay on.

Evaluation plan:	Observe the child's response to getting a bead. If the child is excited and refers to bravery beads during hard times you can evaluate if this is something that is helping the child. This activity is also a symbolic physical representation of their journey, When care is finished this is something the patient and parents can take with them to remind them of the bravery and strength to get them though all of the hard things that they have had to endure.
Discussion	
How is your intervention theoretically informed?	This activity lets children recognize their strength and bravery. Anxiety is a large psychological factor in pediatric
How is your intervention evidence-based? What advice do you have for others facilitating this activity? Citation here please.	cancer diagnosis. Many children worry about getting poked, getting their port accesses, how their medication will make them feel, ect. So telling the child how brave they are by allowing them to pick out beads to symbolize their bravery of getting though the poke, procedure, or medication is a great symbolic tool. This also can help reduce anxiety as when a child is feeling anxious you can refer to the beads and remind them of how their bravery got them though it last time, they can get though it again. Decreasing the distress during diagnosis and treatment is important to help the child become

aware of what is happening and make them comfortable. By using these beads, it is a fun way to represent this as well as allowing the child to look forward to getting a bead.

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Resources

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