

Biopsychosocial Problems among School Age Children with Acute Lymphoblastic Leukemia

Thesis

*Submitted for Partial Fulfillment of the Requirement of
Master Degree in Psychiatric/ Mental Health Nursing*

By

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List of Abbreviations

Abb.	Full term
ALL	Acute lymphoblastic leukemia
AML	Acute myeogenous Leukemia
BMT	Bone Marrow Transplantation
CNS	Central nervous system
CT	Computerized Tomography
DNA	Deoxyribonucleic Acid
MRI	Magnetic resonance imaging
NCI	National Cancer Institute
SCT	Stem Cell Transplantation
USA	United States of America

Abstract

Background: *Acute lymphoblastic leukemia (ALL)* is a serious illness that affect school age children with pain, weakness, fatigue, anxiety, depression, nervousness, mistrust, fear, insomnia, and inability to concentrate. The present study **aimed** to assess biopsychosocial problems among school age children with acute lymphoblastic leukemia. **Setting:** The study was conducted at children cancer Hospital 57357. **Subjects:** The total number of the children was (50). **Tools:** Data were collected through; **A)** Socio-demographic interview sheet, **B)** Psychometric measures: they consisted of four scales, related to child as: (a) Social Anxiety Scale Children (SASC), (b) Children Depression Inventory (CDI), (c) Self- Esteem Scale (SES), (d) A tool of physical assessment. **Results.** Depression and social anxiety were higher for those who were previously hospitalized. Self appreciation was the highest for children who don't need help at home and the least for children who needs help. **Conclusion:** Children suffering from acute lymphoblastic leukemia (ALL) are facing biopsychosocial problems resulting from the chronic disease and its long lasting consequences. Biopsychosocial problems affect children development and social interaction between the children and all family members, and school environment. **Recommendations:** Continuous in-service educational recommended higher psychological care and guidance for children with ALL to raise their self appreciation and decrease their depressive symptoms and social anxiety especially for problems mentioned before.

Key words: Biopsychosocial problems - School-Age Children- Acute lymphoblastic Leukemia.

Introduction

Leukemia is a condition in which there is clonal proliferation of malignant stem cells in the bone marrow. Leukemia is present when >25% blast cells are present in bone marrow aspirate. In most cases acute leukemia develops for no known reason, but sometimes possible causes can be identified: ionizing radiation, cytotoxic drugs, oncogenic viruses, genetic factors, chromosomal instability, immune deficiency states, occasionally, acute leukemia presents as an aplastic anemia (**Khan, 2013**).

Acute lymphoblastic leukemia develops when a single lymphoid cell undergoes malignant transformation and proliferates uncontrollably. In the bone marrow of an individual with all the invasion of these malignant lymphoblast or immature white cells causes a "crowding out" of normal red cells, platelets and white blood cells, resulting in pancytopenia and immunosuppression (**Potts & Mandelco, 2012**).

The major treatment modalities for cancer include surgery, radiation therapy and chemotherapy. Chemotherapy plays an important role in the treatment of cancer. Whether utilized alone or in combination with other therapy, it can

achieve significant improvement in both the cure rate and the length of survival of cancers patients (**Petty & Yang, 2017**). Chemotherapy is a systematic intervention and it is appropriate when disease is white spread or when the risk of unpredictable disease is high chemotherapy administration was done through several routes. It may be given in inpatient department or in outpatient clinic (**Hinchliffe et al., 2013**). It has a several side effects, range from mild to severe. They have a negative impact on the patient functional states. So the management of those patients is greater challenge for nurses (**Smeltzer et al., 2008**).

Childhood malignancies can dramatically influence the psychosocial life of children and cause an involuntary change in the parents' attitude toward treatment and education of their child. On the other hand, in children who are treated for ALL, the overall functional capacity and quality of life is lower than healthy children and they seem to have less satisfaction and comfort (**Scanlon et al., 2014**). Combination of these changes may lead to an unpleasant life style or future behavioral or psychosocial complications for the survivors (**Berbis et al., 2015**). Depression, somatic distress, sleep disturbances, chronic fatigue syndrome, attention/concentration troubles, and visual

short-term memory, reduced speed of processing, lower scores in global and verbal IQ's and finally, learning disabilities are common neurocognitive manifestations due to both the disease and invasive treatment modalities like radiotherapy (**Van Litsenburg et al., 2014**).

Psychological problems among children with leukemia are the shock of diagnosis, discomfort, inconvenience of treatment and living with life threatening disease. On the fact, parents of cancer child have many different negative emotions, such as fear, guilt, sadness, anger and uncertainty. These are all normal reactions. And is part of the process that many parents go through at such a difficult time (**National Cancer Institute, 2008**).

Children with ALL might be vulnerable to depression and anxiety for many reasons: reactions to cancer diagnosis, the presence of unpleasant symptoms associated with ALL (such as pain, nausea and fatigue), and concerns about disease recurrence or progression. Besides, the physiologic effects of certain treatments (such as high-dose interferon therapy, radiotherapy and chemotherapy) that resulting in anxiety and depression (**Zhang et al., 2012**).

Depression may present with worthlessness, hopelessness, loss of energy and interest and suicidal preoccupation. And many children are also anxious, because anxiety is a response to a threat like cancer (**Jadoon et al., 2010**).

Anxiety is psychological and physiological states characterized by a collection of physical, emotional, and behavioral components (**Seligman et al., 2001**). It is common psychological disorders that can impair health-related quality of life (including physical, emotional and social dysfunction), significantly increase mortality rate and lead to a massive medical costs (**Cuijpers & Schoevers, 2004**).

Significance of the study:-

Acute lymphoblastic leukemia, the most common form of cancer in children, comprises approximately 30 percent of all childhood malignancies, with acute lymphoblastic leukemia The annual incidence is 3 or 4 cases per 100,000 caucasian children. ALL being five times more common than acute myeloid leukemia (AML). Each year in the United States (USA) approximately 2500 to 3500 new cases of ALL are diagnosed in children (**Ward, 2014**). Acute lymphoblastic leukemia represented 23.3% of all childhood

malignancies and 75% of pediatric leukemia's, are recently, the cancer registrations at NCI, Egypt, reported that acute lymphoblastic leukemia constitutes 19.6% of all childhood malignancies (**Muharram et al., 2010**) while the total newly diagnosed patients in 2012 with ALL were 150 children and 75 children diagnosed as having AML (**National Cancer Institute, 2013**). There for this study will aim to assess biopsychosocial problems among school age children with acute lymphoblastic leukemia.

Aim of the Study

To assess biopsychosocial problems among school age children with acute lymphoblastic leukemia.

Its will be achieved through answering the following questions:

1. What are the Physical problems among school age with acute lymphoblastic leukemia?
2. What are the Psychological problems among school age with acute lymphoblastic leukemia?
3. What are the social problems among school age with acute lymphoblastic leukemia?

Review of Literature

Part I. Overview of Childhood Cancer

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. These contrast with benign tumors, which do not spread to other parts of the body. Possible signs and symptoms include a lump, abnormal bleeding, prolonged cough, unexplained weight loss, and a change in bowel movements. While these symptoms may indicate cancer, they may have other causes (**Geoff et al., 2014 & Anguiano et al., 2012**).

Cancer cells interfere with the normal functioning of cells and are detrimental to the organism's survival. While some forms of cancer do not form a solid mass (such as leukemia), the most common quality associated with cancer is the ability to form an aggressive tumor (**Bergenmar et al., 2014**).

Acute Lymphoblastic Leukemia