# Assessment The Psychological Condition of Children Having Acute Lymphoblastic Leukemia Undergoing Chemotherapy

**Safa Ramadan Mohamed[1], Safy Salah Eldin Ibrahim Al-Rafay[2], Salma El-Sayed Hassan Mohamed[3], Taghred Mohamed Elshafi[4]**

[1] Accredited Provider Program Director at Children Cancer Hospital 57357, Cairo, Egypt.

[2] Professor of Pediatric Nursing Department, Faculty of Nursing, Ain Shams University, Cairo, Egypt.

[3] Professors & Head of Pediatric Nursing Department, Faculty of Nursing, Ain Shams University, Cairo, Egypt.[4] Department of Psychiatry, Faculty of Medicine, Al-Azher University

**Abstract**

**Background:** A cancer diagnosis can affect the emotional health of patients, families, and caregivers. Common feelings during this life-changing experience include anxiety, stress and depression. **Aim:** to assess the psychological condition of children having acute lymphoblastic leukemia undergoing chemotherapy. **Design:** Descriptive exploratory design. **Settings:** This study conducted at the In-Patient Pediatric Hematology Oncology Departments Children's Cancer Hospital Foundation- Egypt, Cairo (57357). **Sampling:** A purposive sample comprised of 100 children suffering from ALL undergoing chemotherapy. **Tools: Part 1:** An interviewing questionnaire to assess children sociodemographic. **Part 2:** Psychological assessment scale for children to assess (1) depression (2) anxiety (3) stress. **Results:** This study revealed that more than third of studied children were in the age range 6-<10 years while more than two thirds of children were males., more than third of studied children had moderate depression, while less than quarter of studied children had severe depression. **Conclusion:** from the findings of the current study it can be concluded that the anxiety, depression and stress of the majority of studied children were affected by cancer and chemotherapy. **Recommendation:** Design psychological assessment sheet regarding stress, anxiety and depression assessment among children with acute lymphoblastic leukemia and being a routine for nurses to apply.

**Keywords:** Acute Lymphoblastic Leukemia, Chemotherapy, Psychological Condition.

## Introduction:

All know how devastating the physical side effects of cancer are. But many people don't think about the psychological impact cancer has on patients. Like with any condition that impacts your ability to engage in daily activities, cancer causes many mental and emotional side effects as well. Depression is the most common psychological side effect cancer patients deal with. It's easy to see why, given the vast physical toll that cancer puts on the body. To deal with cancer effectively, you need to target all of the symptoms it causes **(Rock et al., 2022).**

Nurses are important members of a patient's care team. For children being treated for cancer, nurses perform a number of critical functions. Nurses often serve as a patient and family's first line of contact in and out of the hospital. An inpatient nurse acts as a primary care provider during a hospital stay **(Perry et al., 2022).**

Nurses use psychosocial support to help establish therapeutic relationships. These relationships are built through psychological, social, and spiritual care. Today, effective high quality cancer care is viewed as involving more than just the delivery of anti-cancer therapy. Increasingly cancer service providers are required to address patients supportive care needs (Harrison et al 2009). As hospital nurses we see the patient and their family throughout their cancer journey and are in a unique position to monitor a patients' psychosocial coping and distress. Empowering patients through support and education enables them to have some feeling of control **(Albal et al., 2021).**

## Significance of the Study:

Children with cancer must feel stressed and overwhelmed. It's normal for them to feel anxious, afraid, angry, or depressed. Cancer treatments also can cause them to have trouble concentrating or remembering things. These feelings and problems can make it hard for them to work or do normal daily activities.

## The aim of the study:

This study aims to assess the psychological status of children having acute

lymphoblastic leukemia undergoing chemotherapy.

**Research Design:**

Descriptive exploratory design was utilized to conduct the study.

**Subjects and Methods:**

**Technical design**

The technical design was included research setting, subjects and tools for data collection.

**Research Setting:**

This study conducted at the In-Patient Pediatric Hematology Oncology Departments Children's Cancer Hospital Foundation- Egypt, Cairo (57357).

**Research Subjects:**

A purposive sample comprised of 100 children suffering from acute lymphoblastic leukemia undergoing chemotherapy.

**Inclusion Criteria:**

The study subject was selected according to the following inclusion criteria:

Newly diagnosed children with ALL within one week from diagnosis, in the treatment phases (induction phase then consolidation phase), aged from 6 to 18 years (this age able to express themselves), from both genders at any educational level and from any residence area.

**Tools for data collection:**

**Data was collected using the following Tools:**

**1. Interviewing Questionnaire:** It dealt with sociodemographic of children which included: Age, gender, level of education, ranking, residence, medical diagnosis reason of admission and stage of treatment.

**2. Psychological Assessment for Children: which consisted of 3 scales as follows:**

**A. Hamilton Depression Rating Scale (HDRS) for children:** It was adopted from **Hamilton (1960)** to assess children's depression. It was consisted of 17 sentences about: Depression, feeling of guilt, suicide, insomnia, work and activities, retardation, agitation, anxiety – psychic, anxiety – somatic symptoms- gastrointestinal, somatic symptoms-general, genital symptoms, hypochondriasis, loss of weight and insight.

❖ **Scoring system:**

it consists of 17 sentences, 8 sentences scoring from 0:4 while the others 9 sentences scoring from 0:2. The total scores for HDRS are 50 scores. The scores of each child was summed and accordingly the total children depression was divided into:

- No depression: from zero to 7
- Mild depression: from 8 to 13
- Moderate depression: from 14 to 18
- Severe depression: from 19 to 22
- Very severe depression: from 23 to 50

**B. Spence Children's Anxiety Scale:** It was adopted from **Spence et al., (2003)** to assess children's anxiety. It was consisted of 45 sentences. The scale divided into six sub scale which include; generalized anxiety, panic / agoraphobia, social phobia, separation anxiety, obsessive compulsive disorder and physical injury fears.

❖ **Scoring system:**

it consists of 45 sentences, only 38 sentences were scored, the other 7 sentences did not score. Scoring from never (0) to always (3), The total scores for Spence children's anxiety scale is 114 scores. The scores of each child was summed and accordingly the total children's anxiety was divided into:

- Normal: from 40 to 60
- High: more than 60

**C. Perceived Stress Scale (PSS):** It was adopted from **White, (2006)** to assess children's stress. It was consisting of 14 questions

❖ **Scoring system:**

Each question scored from never (0) to a lot (3). The total scores of scale are 42 scores. Reverse your scores for questions 4,5,7 and 8. On these 4 questions, change the scores like this: 0=4, 1=3, 2=2, 3=1, 4=0. The scores of each child were summed and accordingly the total children's stress was divided into:

- Low stress: from 0 to 13
- Moderate stress: from 14 to 26
- High stress: from 27 to 42.

**Operational design:**

**Pilot Study:**

A pilot study was carried out on 5 (10%) of the sample size children to test the applicability and feasibility of the study tools which was used in data collection in addition to calculate the time that required to fill each tool. No radical modification was done in the study

tools after pilot study, so the studied children in the pilot study were included in the study subject.

**Field Work**

The study was carried out over a period of 6 months from beginning of July up to the end of December 2020 in Children's Cancer Hospital Egypt, In- Patient Department. The researchers were available in the study setting 2 days/ week (Monday& Thursday) from 9:00am. to 2:00pm.

**Validity:**

Tools of this study were judged by a panel of 3 expertise and they were professors of pediatric nursing. The necessary modifications were done according to experts' opinion to ensure validity of the content.

**Reliability:**

The reliability for tool was 0.74.

Using Alpha Cronbach Reliability Analysis of the Used Tool

**Exploratory phase:**

During this phase, the study tools were developed according to the needs assessment of study problems. After obtaining a permit from study team of the Children's Cancer Hospital Foundation- Egypt, Cairo (57357). It has been approved by the Scientific Medical Advisory Committee (SMAC) and Internal Reviser Board (IRB).

After permission the researcher started with introducing herself to the children according the criteria and explaining the aim of the study, assured that data collected will be confidential and will used only to achieve the purpose of the study.

**Administrative design:**

A letter was obtained and delivered from the dean of the faculty nursing, Ain Shams University directed to the information setting where the proposed study was conducted. After obtaining the approvals from the director of these setting for conducting the proposed study, the researcher was start to communicate with the study subjects and explain the aim of the study.

**Statistical Design:**

The data obtained was organized, analyzed, and presented in the form of tables and figures using the Statistical Package for Social Sciences (SPSS) Version 20. Qualitative variables were presented in the form of frequencies and percentages; quantitative variables were presented in the form of mean and SD. Qui square and Fishers Exact tests were used to test the significance of results obtained. Statistical significant difference was considered at $P < 0.05$.

**Ethical considerations:**

Informed consent was obtained from children and their parent prior to data collection. The studied children were informed about the purpose and the expected outcomes of the study and they were assured that, the study was harmless to children and they have the right to withdraw from the study at any time without given any reason. They were also assured that, anonymity and confidentiality will be guaranteed, as well the collected data will be used for the research purpose only. Ethics, values, culture and beliefs were respected.

**Results:**

**Table (1):** shows that, more than third of studied children were in the age range 6-<10 years while more than two thirds of children were males. Also nearly two third of the studied children had preparatory education and lived in rural areas.

**Figure (1):** This figure shows that more than third of studied children had moderate depression, while less than quarter of studied children had severe depression**.**

**Figure (2):** This figure table represent 88% of studied children had high anxiety, while 12% of children had normal anxiety.

**Figure (3):** This figure shows that 80% of studied children had moderate stress, while 20% of children had low stress.

**Table (1):** Distribution of Studied Children According to Their Characteristics. (n= 50).

| Characteristics of Children | No. | % |
|---|---|---|
| **Age** | | |
| 6 <10 years | 19 | 38 |
| 10 <14 years | 13 | 26 |
| 14 ≤18 years | 18 | 36 |
| **Gender** | | |
| Male | 34 | 68 |
| Female | 16 | 32 |
| **Level of education** | | |
| Primary school | 1 | 2 |
| Prep school | 31 | 62 |
| Secondary school | 13 | 26 |
| University | 5 | 10 |
| **Residence** | | |
| Urban | 20 | 40 |
| Rural | 30 | 60 |

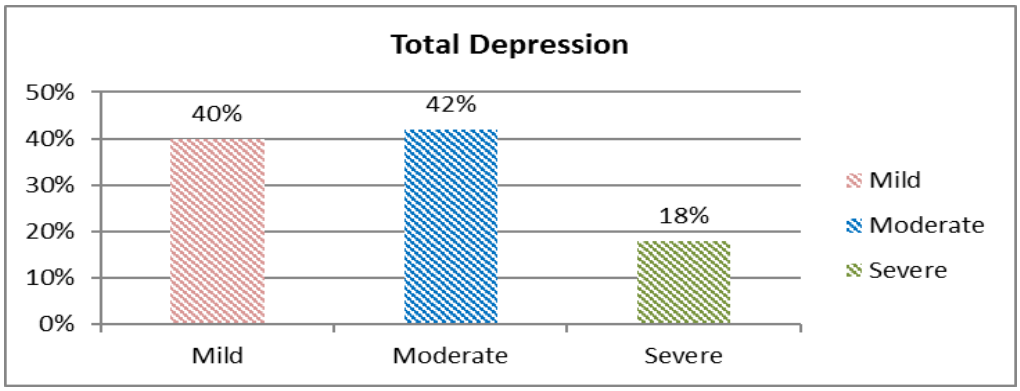
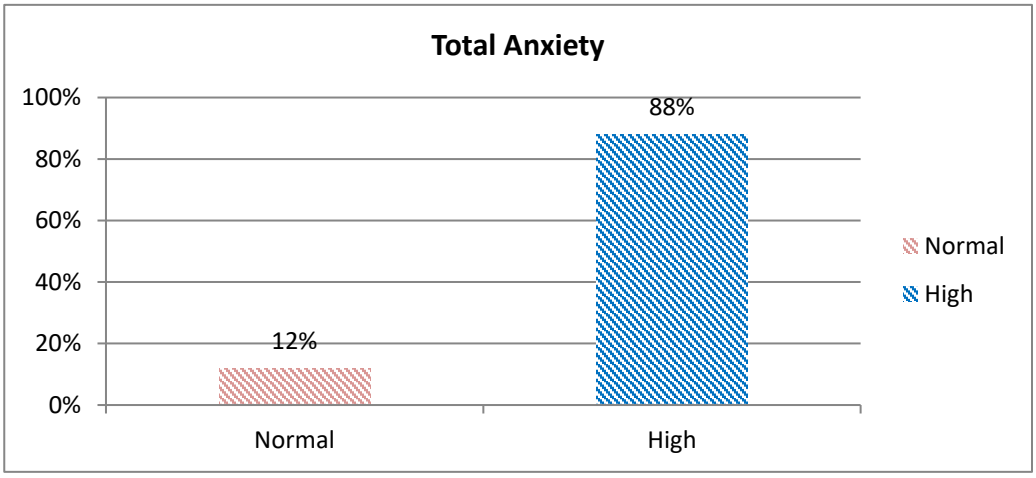



**Figure (1):** Distribution of Studied Children According to Their Total Depression (n= 50).

**Figure (2):** Distribution of Studied Children According to Their Total Anxiety (n= 50).



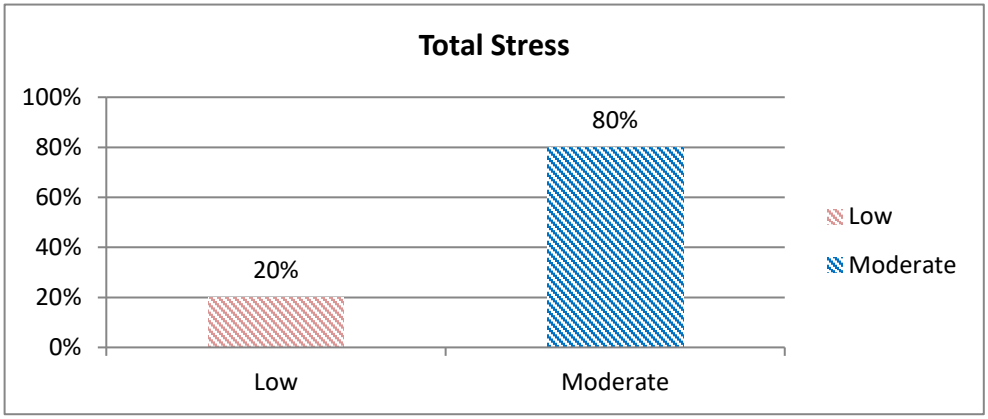



**Figure (3):** Distribution of Studied Children According to Their Total Stress (n= 50).

**Discussion:**

Cancer is a life-threatening and feared diagnosis, and is a source of great distress in patients. A cancer diagnosis generates a higher sense of distress than non-neoplastic diseases with poorer prognoses. High levels of mental distress for sustained periods of time in cancer patients may lead to anxiety, depression or both. This mixed symptomatology is very common, with two thirds of cancer patients with depression also expressing clinically significant levels of anxiety **(Dalton et al., 2019).**

The mental health needs of people with cancer, with or without a prior psychiatric history, are often given little attention during and after cancer treatment, which is primarily focused on monitoring physical health symptoms and side effects. Advances in the earlier detection of cancer and improved cancer treatments means that people are now living longer with cancer, presenting a significant global challenge **(Niedzwiedz et al., 2019).**

Depression, anxiety and stress can negatively affect the prognosis of cancer and increase hospital stays. Nurses are directly involved in providing care for cancer patients over the entire course of cancer prognoses. However, the nurse role in assessment and management of depression in cancer patients is not well-defined. Nurses should be aware of its risk factors. They should accurately assess patients' concerns and immediately report any suicide risk to the supervising psychiatrist. To better assess psychological condition in cancer patients, nurses should use specific and valid screening tools. Nurses can participate in different management modalities for pediatric oncology patients **(Marinelli et al., 2020).**

The findings of the current study showed that there was no statistical significant difference between characteristics of study and control groups regarding their characteristics namely; age, sex, level of education and residence. This result was in agreement with results of **Seitz., et al. (2014),** who carried out a study entitled "Efficacy of an internet-based cognitive-behavioral intervention for long-term survivors of pediatric cancer: a pilot study" and found that there were no statistical significant regarding demographic characteristics of study group.

The results of the present study illustrated that there more than third of studied children had moderate depression regarding their total depression. This result was in agreement with results of **Kheibari et al. (2014)**, who carried out a study entitled "The effectiveness of expressive group Art therapy on decreasing anxiety of orphaned children" and found that art therapy affects positively in child depression and anxiety with statically significant relation.

The findings of the current study revealed that there were 88% of studied children had high stress. These results were in agreement with results of **Khoolaee et al. (2016)**, who carried out a study entitled "Impact of painting therapy on aggression and anxiety of children"

The results of the present study showed that there were 80% of studied children had

high stress. These results were in agreement with results of **Reiche et al. (2004)**, who carried out a study entitled "Stress, depression, the immune system and cancer"

**Conclusion:**

In the light of the present findings it can be concluded that, the cancer disease and chemotherapy caused depression, anxiety and stress in children diagnosed with acute lymphoblastic leukemia and undergoing chemotherapy.

**Recommendation:**

Design psychological assessment sheet regarding stress, anxiety and depression assessment among children with acute lymphoblastic leukemia and being a routine for nurses to apply.

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