

Quality of Life (Physical Domain) of Children age from 13- less than 18 years with Acute Lymphocytic Leukemia Undergoing Chemotherapy at Hematology Center in Medical City

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ABSTRACT

The goal of the study is to assess the quality of life (physical domain) of children aged from 13- to less than 18 years with acute lymphocytic leukemia undergoing chemotherapy as well as to find out the relationship between the quality of life (physical domain) of children with acute lymphocytic leukemia undergoing chemotherapy and socio-demographic characteristic (gender, residence, level of education, and family income) and their illness history. A descriptive study design was performed on children having acute lymphocytic leukemia who were between the ages of 13 years to less than 18 years. The study started from the period of 20th November 2020 to 1st January 2022. A non-probability purposive sample of (45) children diagnosed with acute lymphocytic leukemia undergoing chemotherapy was chosen from the Baghdad teaching hospital. The researchers adopted the study instrument (questionnaire) based on: Adopted quality of life scale from the world health organization scale (WHOQoL, 1995) that included 2 parts. The study's findings are that the majority of the children 53.3% are diagnosed with acute lymphocytic leukemia at age 16 years and more also, 46.7 of them are diagnosed at age 11- less than 16 years. 60% most of the children taken chemotherapy treatment are within (1- less than 7) months, 77.8% of the children didn't have any relatives with the same disease. Regarding the relation of inflicted family members, the highest percentage of the study sample 15.6% is among third-degree relatives. The study concluded that children aged from 13 to less than 18 years of acute lymphocytic leukemia undergoing chemotherapy have moderate to low effects on physical domains of the quality of life. The study recommended that Counseling sessions and education programs for all Acute Lymphoblastic Leukemia children and their parents on leukemia, medical management, attempts to overcome side effects, nutrition, and support systems, all of which contribute to enhancing the children's quality of life.



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1. INTRODUCTION

QoL is a wide and contentious topic for which there has been no universally recognized definition. The term "health-related quality of life" (HRQoL) has been used as a synonym for a person's perception of their health state, with the goal of determining when a disease or chronic disease and its symptoms start to interfere with a person's everyday living [1].

The concept of nursing care has been influenced by fast scientific advancements in the twenty-first century. Nurses are now expected to assess the children's present life, the domains where the disease impacts the child's life, how the existing disease affects the child and family, and the children's quality of life [2]. The primary premise of children's cancer therapy used to be to guarantee that child's survival, but today the goal is to ensure that the child lives a quality life. As a result, for nurses dealing with children afflicted with cancer, the idea of the quality of life has become increasingly crucial [3].

The mortality rate of children with cancer has dropped by over half. Over the same period, the 5-year survival rate for ALL children younger than 15 years has climbed from 60% to almost 90%, and for adolescents aged 15 to 19, it has increased from 28% to more than 75%. Chemotherapy side effects can last months or years after treatment, thus survivors of childhood and adolescent cancer need to be closely monitored [4]. Survival rates are improving as a consequence of more aggressive therapies, raising concerns about the QoL and also amount and length of survival. The pain of disease and treatment, a lack of energy to enjoy ordinary activities, and worries about the future are all likely to affect a child's quality of life [5].

In children, ALL treatment is based on very intensive multi-drug chemotherapy regimens given over long periods in hospitalization. Despite the very positive results of ALL treatment in children, the major negative influence of multiple adverse effects, drug overdose, and long-term hospitalization on the quality of life of patients must not be ignored [6].

The impact of disease and health on an individual's quality of life was characterized as health-related quality of life. It was operationally defined as the outcome measure of physical, emotional, psychosocial, and illness-related domains [7]. Several factors can affect the quality of life (QoL) of adolescents with acute lymphocytic leukemia, including problems in spouse and familial relationships, changes in body image, difficulties adapting to these changes, changes in social support systems, psychological problems, loneliness, isolation, financial struggles, and Fatigue is one of the most prevalent problems that keep individuals from doing their daily activities by hurting all aspects of their quality of life (QoL) in connection to the treatment they are receiving and the dread of death and illness recurrence [8].

2. Objective of the Study

1. To assess the quality of life (physical domain) of children age from 13- less than 18 years with acute lymphocytic leukemia undergoing chemotherapy
2. To find out the relationship between the quality of life (physical domain) of children age from 13-less than 18 years with acute lymphocytic leukemia and socio demographic characteristic (gender, residence, level of education, family income).
3. To find out the relationship between the quality of life (physical domain) of children age from 13-less than 18 years with acute lymphocytic leukemia and their illness history which include (age at the onset of illness, duration of chemotherapy treatment).

3. Methodology

A descriptive study design (non-probability purposive sample) of (45) children diagnosed with acute

lymphocytic leukemia undergoing chemotherapy was chosen from the Baghdad teaching hospital between the ages of 13 years to less than 18 years. The study started from the period of 20th November 2020 to 1st January 2022. The researchers adopted the study instrument (questionnaire) based on: Adopted quality of life scale from the world health organization scale (WHOQoL, 1995). The study instrument consists of two sections: The first section consists of sociodemographic variables such as (gender, age, residency, the child's education level, family income) and illness history which include (age at the onset of illness, and duration of chemotherapy treatment). The second section consists of the physical domain of the quality of life measurement Scale which has it includes (4) subdomains, including pain and discomfort subdomain (3 items), daily living activity subdomain (4 items), fatigue subdomain (5 items), and sleep and rest subdomain (3 items), all of items (15) illustrate how the disease affects the physical domain of children with Acute Lymphocytic Leukemia. Rating and scoring of quality of Life (physical domain) of children based on: Three-point Likert scales for rating the items as always=3, sometimes =2, never=1. Mean of score (low= (15-24), Moderate=(25-34), High= 35-45). A pilot study was done on (6) children with Acute Lymphocytic Leukemia who were recruited from the hematology centers of baghdad teaching hospital between the 4th to 28th of February 2021. The pilot study sample was excluded from the original sample of the study. Internal Consistency (Cronbach's alpha coefficient) for quality of life (physical domain) of children aged from (13-less than 18 years) with acute lymphocytic leukemia was used to measure the questionnaire's reliability, and it revealed that the $r= 0.816$. The data were analyzed in this study using the Statistical Package for Social Sciences (SPSS) version 20. Data were evaluated using both descriptive and inferential statistical approaches, such as the Chi-square test. The reliability of the questionnaire was determined using the correlational coefficient, and the level of statistical significance was set at 0.05.

4. Results

Table 1: Distribution of children Age from 13 to less than 18 years with Acute Lymphocytic Leukemia according to their Socio-demographic Characteristics

No.	Characteristics	F	%	
1.	Gender	Male	27	60.0
		Female	18	40.0
2.	Residency	Rural	12	26.7
		Urban	33	73.3
3.	Level of education	Primary School graduated	18	40.0
		Intermediate and more	27	60.0
4.	Family monthly income	Less than 300.000 ID	6	13.3
		From 300.000-600.000 ID	12	26.7
		From 601.000-900.000 ID	9	20.0
		More than 900.000 ID	18	40.0

No: Number, F: Frequency, %: Percentage

Table (1) offers that the most of children in the study are 60% males. 73.3% of the children live in urban regions, while 26.7% live in rural areas. The level of education of children refers that 60% of them are graduated from intermediate school and more, also 40% of them are graduated from primary school. Around 40% of the monthly income of the families is more than 900.000ID.

Table 2: Distribution of Children Age from 13 to less than 18 years with Acute Lymphocytic Leukemia Undergoing Chemotherapy according to their Illness History

List	Characteristics	F	%	
1.	Age at the onset of illness	12- less than 16 years	21	46.7
		16 years and more	24	53.3
2.	Duration of chemotherapy treatment (months)	1- less than 7	27	60.0
		7- less than 13	12	26.7
		13 and more	6	13.3

No: Number, F: Frequency, %: Percentage

Table (2) reveals that the majority of the children 53.3% are diagnosed with acute lymphocytic leukemia at age 16 years and more also, 46.7 of them are diagnosed at age 11- less than 16 years. 60% most of the children taken chemotherapy treatment are within (1- less than 7) months.

Table 3: Assessment of the Level of Quality of Life (Physical Domain) of Children Age from 13 to less than 18 years with Acute Lymphocytic Leukemia Undergoing Chemotherapy

Levels (Physical Domain)	F	%	M.S	SD
Low	18	40.0	1.67	0.603
Moderate	24	53.3		
High	3	6.7		
Total	45	100.0		

F: Frequency, %: Percentage, M.S: Mean of score, SD: Standard deviation (low= 15-24, Moderate= 25- 34, High= 35-45)

Table (3) indicates that children with acute lymphocytic leukemia undergoing chemotherapy have moderate to low effects on physical domains of the quality of life in which 53.3% of them are showing a moderate level followed by 40% are showing low affected level. Otherwise, 6.7% are showing a high affected level.

Table 4: The Statistical Relationship between Quality of Life (physical Domain) and Socio demographic Characteristics of Children Age from 13 to less than 18 years with Acute Lymphocytic Leukemia Undergoing Chemotherapy

No.	Demographic Variables	Quality of Life (Physical Domain)			
		Chi-square	d.f	p-value	Sig.
1.	Gender	19.196	2	0.000	S
2.	Residence	3.728	2	0.155	N.S

3.	Level of education	6.641	2	0.036	S
4.	Family income	33.125	6	0.000	S

No: Number, d.f: degree of freedom, p: probability ≤ 0.05 level, N.S: Not significant, S: significant

Table (4) reveals that there are significant relationships between physical quality of life domain and socio-demographic characteristics of children, except that residence is no significant relationship at p. value < 0.05 .

Table (5): The Statistical Relationship between Quality of Life (physical domain) of Children Age from 13 to less than 18 years with Acute Lymphocytic Leukemia and their Illness History

No.	Variables	Quality of Life (Physical Domain)			
		Chi-square	d.f	p-value	Sig.
1.	Age at the onset of illness	11.458	2	0.003	S
2.	Duration of chemotherapy treatment (months)	26.283	4	0.000	S

No: Number d.f: degree of freedom, p: probability ≤ 0.05 level, N.S: Not significant, S: significant

Table (5) shows that there are significant relationships between the physical domain of the quality of life and their illness history at p. value ≤ 0.05 .

5. Discussion of the Results

Table (1) offers that most of the children in the study are 60% males. The findings of this study correspond with those of who discovered that 66.7 % of the studied were male and 33.3 % were female [9].

Concerning the residency, the highest percentage of the present study 73.3% of the children live in urban regions, while 26.7% live in rural areas. This result is consistent with the findings of that revealed that the majority (61.8%) of the participants lived in urban areas [10].

The level of education of children refers that 60% of them are graduated from intermediate school and more, also 40% of them are graduated from primary school. This finding is consistent with study, which found that the majority of participants (47%) were intermediate school graduates. In the researcher's opinion, this level of education is best suited for this age range of 13 to less than 18 years [11].

Around 40% of the monthly income of the families is more than 900.000ID. This result contradicts the findings of a study conducted by which found that the average monthly income of many of these families was (601,000 - 900,000 ID) [12].

Table (2) reveals that the majority of the children 53.3% are diagnosed with acute lymphocytic leukemia at age 16 years and more also, 46.7 of them are diagnosed at age 11- less than 16 years. This contradicts the findings of who showed the following age ranges for the onset of acute lymphoblastic leukemia: (0-4 years) 2254 (54.3%), (5-9 years) 1140 (27.5%), (10-14 years) 532 (12.8%), and (15-21 years) 225. (5.4%) [13]. Concerning the duration of chemotherapy treatment, 60% most of the children taken chemotherapy treatment

are within (1- less than7) months. The findings of this study contradict those of who found that the majority of children (30%) are receiving therapy for 1-2 years [14].

Table (3) indicates that children with acute lymphocytic leukemia undergoing chemotherapy have moderate to low effects on physical domains of the quality of life in which 53.3% of them are showing a moderate level followed by 40% are showing low affected level. Otherwise, 6.7% are showing a high affected level. These findings are backed up by a study conducted by which found that the majority of cancer patients had physical or practical problems that might affect their quality of life. Leukemia treatment is time-consuming, unpleasant, and invasive. Frequent hospitalizations, severe physical side effects, and restrictions on daily activities after treatment all have a substantial impact on the adolescents' quality of life [15].

Table (4) illustrates the results which indicated a statistically significant relationship between gender and physical domain. This finding is consistent with who found a significant link between gender and physical quality of life domain [16]. Regarding the residence, the results indicate a statistically no significant relationship between residence and physical domain. The findings contradict with who claimed that there was a significant relationship between residency and physical domains [17]. In regard to the level of education, there is a significant relationship with the physical domain. The findings contradict those of who claimed that education level had no significant association with the physical domain [17]. In regard to family income, there are significant relationships with quality of life (physical domain). The findings of the present study disagree with the study done by their findings indicate that there was no significant association between all quality of life domains (physical, psychological, independency, social, environment, spiritual) and family income [18].

Table (5) shows that there are significant relationships between the physical domain of the quality of life and their illness history. The results of this study correspond with those of who found a high-significant relationship between the physical domain and (age at beginning of illness and duration of chemotherapy treatment) [17].

6. Conclusion

According to the finding of the present study, the researchers concludes that acute lymphocytic leukemia is more prevalent in males than females, and it is more common in patients living in urban than in rural areas. Children aged from 13 to less than 18 years are moderately affected in physical domain of quality of life.

7. Recommendations

The study recommends that children should have regular clinical assessments to monitor their treatment compliance for enhance quality of life. Counseling sessions and education programs for all Acute Lymphoblastic Leukemia children and their parents on leukemia, medical management, attempts to overcome side effects, nutrition, and support systems, all of which contribute to enhancing the children's quality of life. Specific nursing personnel in oncology wards, as well as training staff on acute lymphocytic leukemia and chemotherapy, may assist to enhance the quality of care and quality of life for children with acute lymphocytic leukemia. Pediatric palliative care consulting services should be implemented in hospitals to improve the quality of life for children and their families, as well as providing support for their providers

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