Psychological Mother's Readiness About Discharge Planning for Children with Leukemia

أستعداد ألام النفسي حول خطة التخريج للاطفال المصابين بمرض ابيضاض الدم

***Ola A. Lateef* MSc Nursing;**
****Khatam Matsher Hatab**PhD**

**** Medical City Health Directorate, Ministry of Health, Baghdad, Iraq.***
***E: mail: ula.abd2204p@conursing.uobaghdad.edu.iq**
*****Pediatric Nursing Department, College of Nursing, University of Baghdad, Baghdad, Iraq***
**E: *dr.khatam@conursing.uobaghdad.edu.iq*

Psychological Mother's Readiness About Discharge Planning for Children with Leukemia

***Ola A. Lateef* MSc Nursing;**
****Khatam Matsher Hatab**PhD**

Abstract

Discharge preparation programs during hospitalization concentrate on preparing children and families for the transition to home and for managing care post-discharge. While many different professionals can assist in the planning and coordination of hospital discharge, the major responsibility for discharge preparation during hospitalization lies with facility-based clinical nurses.

Objectives: The study aims to evaluate mothers' knowledge of a child with leukemia about psychological readiness for discharge plan by applicate educational program to enhance mother's psychological readiness for hospital discharge.

Methodology: This study used Quantitative a descriptive research design and was conducted in Oncology department at Welfare Teaching Hospital from 28th of February / 2024 till 16th of June / 2025. A non-probability purposive sample of 50 mothers was selected, for the period from 1st October, 2024 to December 28th, 2024. The study used international scale questionnaire to collect socio-demographic data and psychological mothers' readiness for hospital discharge for child with leukemia (23) items. The questionnaire was validated and reliable by a panel of (11)
experts, who reviewed the format for content clarity, relevancy, and adequacy. The data was analyzed using descriptive statistical data analysis and inferential statistical methods, with all procedures tested at $P \leq 0.05$. The data analyses measures included descriptive and inferential measures.

Results: The study reveals that 84% of mothers for children with leukemia are married, have less than five years of diagnosis, and have limited knowledge about leukemia. Significant improvements in the study group compared to the control group. In the study group, mothers with high readiness increased from 32% (pre-test) to 72% (post-test 1), before slightly dropping to 36% (post-test 2), while those with moderate readiness decreased from 64% to 36% by post-test 2. In contrast, the control group showed minimal change, with 92% remaining at moderate readiness and only 8% reaching high readiness by post-test 2. Significant associations were found between readiness and factors such

as education level (p = 0.005), number of hospital admissions (p = 0.003), and chemotherapy doses (p = 0.011), confirming the program's effectiveness.
Conclusion: The study revealed that most mothers despite their young age have a diploma and less than five years of diagnosis with their child with leukemia, highlighting the need for targeted education and interventional program.
Recommendation: In-service training programs are recommended to improve mothers' knowledge related readiness for hospital discharge and practice on leukemia and safe sleep recommendations, with need for further studies in Iraq.

المستخلص:

تركز برامج الاستعداد للخروج أثناء الاستشفاء على تهيئة الأطفال والامهات للانتقال إلى المنزل وإدارة الرعاية بعد الخروج. بينما يمكن للعديد من الاطباء والتمريضيين المساعدة في التخطيط والتنسيق للتخريج من المستشفى، فإن المسؤولية الرئيسية عن إعداد التخريج أثناء فترة الاستشفاء تقع على عاتق الممرضات السريريات في المستشفى.

الأهداف: تهدف الدراسة إلى تقييم معرفة الأمهات بخطة خروج الطفل المصاب بسرطان الدم، وتطوير برنامج تعليمي يتناسب مع احتياجاتهن، وتقييم فعاليته، والتحقيق في علاقته بالبيانات الديموغرافية.

المنهجية: استخدمت هذه الدراسة تصميم بحث وصفي كمي وتمت في قسم الأورام

بمستشفى حماية الأطفال التعليمي للفتره ٢٨نوفمبر ٢٠٢٤ إلى ١ ديسمبر ٢٠٢٤.

تم اختيار عينة هادفة غير احتمالية مكونة من (٥٠) أمًا، للفترة من ٢٨ نوفمبر ٢٠٢٤ إلى ١٦ حزيران ٢٠٢٥. استخدمت الدراسة استبيانًا دوليًا لجمع البيانات الاجتماعية والديموغرافية واستعداد الأمهات لخروج أطفالهن من المستشفى المصابين بسرطان الدم مكون من (٢٣) عنصرًا. تمت مراجعة الاستبيان والتحقق من موثوقيته من قبل لجنة مكونة من (١١) خبيرًا، الذين قاموا بمراجعة الشكل من حيث وضوح المحتوى، والأهمية، والكفاية. تم تحليل البيانات باستخدام التحليل الإحصائي الوصفي وطرق الإحصاء الاستدلالي، حيث تم اختبار جميع الإجراءات عند P≤٠,٠٥ شملت مقاييس تحليل البيانات مقاييس وصفية واستنتاجية.

النتائج: تكشف الدراسة أن ٨٤٪ من الأمهات لأطفال مصابين بسرطان الدم

متزوجات، ولديهن أقل من خمس سنوات من تشخيص المرض، ولديهن معرفة محدودة بسرطان الدم. هناك تحسينات كبيرة في مجموعة الدراسة مقارنة بمجموعة التحكم؛ ففي مجموعة الدراسة، زادت نسبة

الأمهات ذوات الاستعداد العالي من ٣٢٪ (قبل الاختبار) إلى ٧٢٪ (بعد الاختبار الأول)، قبل أن تنخفض قليلًا إلى٣٦٪(بعد الاختبار الثاني)، بينما انخفضت نسبة الأمهات ذوات الاستعداد المعتدل من ٦٤٪ إلى ٣٦٪ بحلول الاختبار الثاني. على النقيض، أظهرت مجموعة التحكم تغيرًا طفيفًا، حيث ظل ٩٢٪ عند مستوى الاستعداد المعتدل ولم يصل سوى ٨٪ إلى مستوى الاستعداد العالي بحلول الاختبار الثاني. أظهرت مجموعة الدراسة أيضًا زيادات ملحوظة في المعرفة ارتفع متوسط الدرجة من ٧٤,٥ إلى ٩٦,٠(٧. تم العثور على ارتباطات كبيرة بين الاستعداد وعوامل مثل مستوى التعليم

p = ٠٠٥,٠، وعدد مرات دخول المستشفى p = ٠٠٣,٠، وجرعات العلاج الكيميائي p = ٠١١,٠، مما يؤكد فعالية البرنامج.

الخاتمة: كشفت الدراسة أن معظم الأمهات، على الرغم من صغر سنهن، يحملن دبلومًا ولديهن أقل من خمس سنوات من التشخيص لطفلهن المصاب بسرطان الدم، مما يبرز الحاجة إلى برامج تعليمية وتدخلية مستهدفة.

التوصيات: يُوصى ببرامج تدريب أثناء اعطاء العلاج لتحسين معرفة الأمهات وممارستهن حول مرض سرطان الدم وتوصيات حول النوم الآمن، مع الحاجة إلى مزيد من الدراسات داخل العراق

Keywords: Psychological mother's readiness, child with leukemia, child planning discharge

Introduction

Leukemia is the predominant cancer in children below 15 years of age. It is an atypical overproduction of blood cells in the bone marrow and lymphatic system [(1)].

leukemia representing 25.3% of all newly diagnosed childhood malignancies. The annual incidence in the United States is 3.7 to 4.9 cases per 100,000 youngsters. The likelihood of having leukemia is slightly more common in males than in girls, with the maximum prevalence occurring between the ages of 2 and 5 years [(2)].

Moreover, children in Iraq between age 0-4 are struggle with leukemia more than other age groups by 233 cases 31.8% in contrast with 5-9 years age by 172 cases 29.5% and the lowest rate for age group 10-14 years by 146 cases 24.1%

per 100,000 of the total number of cancers reported to the Iraqi cancer registry in 2023. In addition, Baghdad governorate has the higher percentage for childhood leukemia incidence with 129 cases followed by Nineveh by 70 cases and Basrah 52 cases while the lowest number of cases were in Misan by 13 cases. Brain, CNS tumor was the most common cancer leading to death in children 140 deaths followed by Leukemia 139 deaths these two cancers represented 62.3% of all deaths from cancer among Iraqi children [(3)].

Returning home requires a transition to ensure continuity when the patient moves between locations and levels of care. Although returning home has a positive effect on the biological recovery of children, as well as their well-being and quality of life, it raises care-related questions and concerns of the parents and workers who prepare them for this transition. All the information about the disease, procedures, tests, and therapy must be transmitted clearly for the parents to continue care at home and cope with the changes imposed on them after a cancer diagnosis. The need to answer questions about the diagnosis and treatment plan and empower the parents to manage care during the child's initial admission, which is usually short, is a challenge for health care professionals [(4)].

Readiness for discharge should not converge with the moment of discharge, nor terminate at the time of discharge. Parents needed to have engaged an information and support network to enhance their confidence in administering home care for their child. Consequently, additional resources such as telephone lines and home visits should be available [(5)].

Recent systematic research highlighted the correlation between parental concern at diagnosis and later adjustment, indicating that mental health issues may persist for years post-diagnosis. Research indicates that parents of children with leukemia frequently experience diminished psychological well-being while attending to their afflicted child. Consequently, these parents may be regarded as "hidden patients," necessitating particular treatment to prevent bodily and mental consequences. Nonetheless, most studies provide little descriptive information about parental challenges

during the initial year of therapy, highlighting the necessity for longitudinal research on parental distress in childhood acute lymphoblastic leukemia (ALL) [(6)].

Caregiver for children with leukemia often carry a significant emotional burden, experiencing feelings of sadness, grief, fear, loneliness, and helplessness. This burden is also linked to severe sleep disturbances, which can intensify anxiety and depression while diminishing caregivers' overall quality of life. The demands placed on caregivers of individuals with leukemia can lead to what is known as "existential distress," characterized by feelings of hopelessness, emotional disconnection, a loss of meaning or purpose, guilt, helplessness, and a diminished desire to continue living [(7)].

Managing anxiety and stress for mothers caring for a child with leukemia at home involves a multifaceted approach that includes seeking emotional support, maintaining self-care routines, and utilizing coping strategies. Engaging with support groups, whether in person or online, may promote a sense of community and shared experience, which is essential for emotional well-being. Healthcare professionals, such as social workers and counselors, can offer guidance and resources tailored to individual needs. Incorporating relaxation techniques like deep breathing, meditation, or prayer can help manage stress levels. It's also important to establish a structured daily routine to provide a sense of normalcy and control. Educating oneself about the child's condition and treatment plan can alleviate uncertainties and empower mothers in their caregiving role. Regular communication
with the medical team ensures that concerns are addressed promptly, reducing
anxiety related to the child's health status [(8)].

Theoretical Framework: -

The research being conducted relies on Bandura's social cognition theory to improve the understanding of self-efficacy and to investigate the impact of individual, behavioral, and environment variables on adherence to medicines. Self- efficacy is the primary factor determining an individual's behavior, directly effecting actions

and impacting other variables. Bandura (2004) believes that self-efficacy influences the expected outcomes of individuals' actions. Positive determinism serves as the fundamental organizing principle of behavior modification as posited by this social cognitive theory, characterized by ongoing, functional interactions among the environment, the individual, and behavior.

Social Cognitive Theory

Albert Bandura developed the Social Cognitive Theory, assuming that learning is influenced by cognitive, behavioral, and environmental variables. Contrasting with traditional psychological theories that prioritized learning by direct experience, Bandura believed that nearly all learning phenomena can take place through the observation of others' actions and its consequences **(9).**

Materials and Methods

Study design and setting

Quantitively a quasi-experimental design that implemented the educational program at Welfare teaching hospitals in Baghdad city to ascertain the effectiveness of the educational program on mothers' readiness regarding discharge planning for children with Leukemia from 28th of February / 2024 till 16th of June / 2025.

Study participants and sampling

A nonprobability (purposive) sampling of 50 mothers who are attending a study, that conducted at the Oncology department in Baghdad, Iraq, involved 50 mothers aged 18 and above with children diagnosed with childhood leukemia. The study group included (25) mothers was selected from Welfare Teaching Hospital (Oncology department), and the control group included (25) mothers was selected from the same place, for the period from 1st October, 2024 to December 28th, 2024.

Data collection tools and technique

The researchers used a paper-based self-report questionnaire to collect data on the readiness for hospital discharge (RHDS) of caregivers for pediatric patients. The questionnaire comprised 23 items, encompassing sociodemographic data and the assessment of maternal preparedness for hospital release. The RHDS (international

scale) was created with the consent of Dr. Marianne Weiss and evaluated using a 10-point Likert scale, where rising scores signify increased discharge preparedness. The Cronbach's alpha for the Ped-RHDS is 0.73, so affirming its dependability 22. The self-report from the questionnaire and interview required around 10 to 15 minutes for each mother.

Ethical considerations

The study obtained approval from the authority of the College of Nursing at the University of Baghdad, the Scientific Research Ethical Committee, and verbal consent from each person who decided to join.

Testing the Validity and reliability of the Tools:

The tool validity usually discusses the qualification which it is measures and supposed to measure, that communal to usage a panel of experts to reflect their acceptance for the tool. The questionnaire and educational program lectures were reviewed by (11) experts in different medical and nursing fields in Baghdad university and Medical City Directorate.

The reliability was conducted in the Health Directorate of Alkarkh government/ pediatric Teaching Central Hospital in 1st of October 2024 for 10 mothers' samples that excluded from total number of samples, using the international scale questions readiness for hospital discharge scale (RHDS scale) need for 8-15 minutes to fill.

Results

Table (1): Distribution of the mothers according to their Socio-demographic Characteristics

No.	Characteristics		Study group		Control group	
			f	%	f	%
1	**Age (Years)**	18 – 24	1	4	3	12
		25 – 29	3	12	6	24
		30 – 34	7	28	4	16
		35 – 39	5	20	5	20
		40 or more	9	36	7	28

		Total	***25***	***100***	***25***	***100***
		M ± SD	***34.92 ± 6.2***		***32.96 ± 7.2***	
2	**Marital status**	Married	24	96	25	100
		Separated/ Divorced	1	4	0	0
		Total	***25***	***100***	***25***	***100***
3	**Level of education**	Doesn't read & write	7	28	7	28
		Read & write	4	16	6	24
		Primary school	7	28	8	32
		Preparatory school	5	20	3	12
		Bachelor	2	8	1	4
		Total	***25***	***100***	***25***	***100***
4	**Number of children**	1 – 3	11	44	10	40
		4 – 6	12	48	12	48
		7 – 9	2	8	3	12
		Total	***25***	***100***	***25***	***100***
5	**Monthly income (Iq Dinars)**	Less than 300000	6	24	16	64
		300000 – 600000	2	8	4	16
		601000 – 900000	6	24	2	8
		901000 – 1200000	4	16	0	0
		1201000 – 1500000	7	28	3	12
		Total	***25***	***100***	***25***	***100***

6	**Duration of Leukemia diagnosis**	Less than 1 year	23	92	14	56
		1 year	1	4	5	20
		2 years	1	4	2	8
		3 + years	0	0	4	16
		Total	***25***	***100***	***25***	***100***
7	**Residency**	City center	18	72	17	68
		Rural	7	28	8	32
		Total	***25***	***100***	***25***	***100***
8	**Sources of information**	Medical staff	21	84	21	84
		Internet	4	16	4	16
		Total	***25***	***100***	***25***	***100***

The table 1. there was an interview with (50) mothers of children with leukemia in the inpatient ward of Welfare Teaching Hospital. The study found that both groups of mothers of children with leukemia have similar age distributions, marital status, educational levels, and number of children. The study group had a more even distribution across income categories, with 28% earning 1,201,000-1,500,000 IQD, while the control group was predominantly in the lowest income category. The majority of children were diagnosed for less than one year in the study group. Most mothers resided in urban areas, and 84% of them rely on medical staff for information.

Table.2: Evaluation of Mothers' Readiness related to "Personal Status:
Physical, Emotional, and Mental Readiness" among Study and Control Group

List	Personal Status	Study Group (N=25)					
		Pre-test		Post-test 1		Post-test 2	
		Mean	Eval.	Mean	Eval.	Mean	Eval.
1a	How physically ready are you to go home?	3.33	L	6.32	M	6.80	H
1b	How physically ready is your child to go home today?	3.33	L	6.28	M	7.60	H
2a	How would you describe your level of pain or discomfort today?	6.66	M	7.24	H	6.88	H
2b	How would you describe your child's level of pain or discomfort today?	5.96	M	6.72	H	6.40	M
3a	How would you describe your strength today?	4.92	M	5.56	M	6.68	H
3b	How would you describe your child's strength today?	4.08	M	5.64	M	7.40	H
4a	How would you describe your energy today?	4.76	M	6.08	M	7.24	H
4b	How would you describe your child's energy today?	4.20	M	5.76	M	7.32	H
5	How much stress do you feel today?	7.44	H	7.08	H	7.36	H
6a	How emotionally ready are you to go home today?	5.72	M	7.20	H	7.36	H
6b	How difficult will it be to manage your child's emotions and/or behavior at home?	4.32	M	4.32	M	4.20	M

7a	How would you describe your physical ability to care for yourself today (for example, hygiene, walking, and toileting)?	7.44	H	8.88	H	7.56	H
7b	How ready is your child to do the usual activities for his/her age (for example, eating, bathing, toileting, play)?	6.48	M	7.68	H	4.72	M
Total average		***5.49***	***M***	***6.52***	***M***	***5.66***	***M***

Control Group (N=25)

Pre-test		**Post-test 1**		**Post-test 2**	
Mean	**Eval.**	**Mean**	**Eval.**	**Mean**	**Eval.**
4.80	M	6.24	M	5.52	M
3.60	M	5.60	M	5.96	M
5.88	M	5.44	M	3.96	M
3.36	M	3.04	L	3.32	L
3.16	L	3.33	L	3.04	L
3.20	L	3.72	M	3.32	L
3.32	L	3.88	M	3.64	M
3.66	M	2.76	L	2.92	L
5.80	M	2.72	L	2.72	L
3.33	L	2.76	L	2.76	L

2.80	L	3.24	L	2.64	L
6.36	M	6.56	M	6.48	M
4.40	M	4.56	M	4.92	M
4.29	***M***	***4.39***	***M***	***4.94***	***M***

The findings in Table.2 summarize mothers' readiness in terms of physical, emotional, and mental aspects across pre-test, Post-test 1, and Post-test 2 for the study and control groups.

The total average score for the study group increased from 5.49 (moderate) in the pre-test to 6.52 (moderate) in Post-test 1 and slightly decreased to 5.66 (moderate) in Post-test 2. In contrast, the control group's total average score progressed from

4.29 (moderate) in the pre-test to 4.39 (moderate) in Post-test 1 and improved to 4.94 (moderate) by Post-test 2.

Discussion

Table.1. Distribution of the mother's according to their Socio-demographic Characteristics

Mothers in both groups have similar age distributions, with the highest percentages in the 40 years or older (36% study group and 28% control g.). The mean ages were slightly different, with study group averaging 34.92 years (SD = 6.2) and the control group averaging 32.96 years (SD = 7.2).

As regards mothers age of the studied mothers, this study showed nearly two groups of studied samples are equal about age distribution, with the study group averaging 34.92 years (SD = 6.2) and the control group averaging 32.96 years (SD

= 7.2). This conclusion has been confirmed at Ain Shams University, Egypt. which indicated that the majority of (60) caregivers are aged between 25 and 40 years. **(10)**

The result is also similar with the study conducted by (2020), which indicated that 41% of (60) mothers are aged between 35 and 44**(11)**.

This study disagrees with study to Huda El-Sayed Abdel-Haleem et al., in 2023 at Benha University, Egypt for (91) mothers and their children with leukemia The current study found that women aged 20 to 30 had a mean ±SD of 31.59±6.99 years, demonstrating the obstacles faced by mothers caring youngsters with leukemia during the COVID-19 pandemic **(12)**.

Concerning married status, most mothers in both groups are married, accounting for 96% for study group and 100% in the control group.

This result agrees alongside a similar study done by Abdel-Haleem et al., in Egypt (2023), where the more than three quarters of 91 mothers them were married **(12).**

Studying by Atout et al., (2021) supported the above findings. Mothers caring for infants with leukemia during the COVID-19 epidemic were identified to be married in 83.6% of cases, according to a qualitative study undertaken in Jordan. **(13)**

point of view, Iraqi culture tends to live with partner more than single mother alone. In spite of, large number of Iraqi mothers divorced but refuse to say that to avoid harassment in public hospitals especially long days stays at oncology ward for treatment.

The educational levels of the mothers in both groups are comparable. A significant proportion are illiterate (28% in each group), and around one-third have completed primary school (28% in the study g. and 32% in the control g.). A smaller proportion has attained higher education, with only 8% of the study g. and 4% of the control g. having a bachelor's degree.

The study indicates that although both groups have similar educational backgrounds, a notable percentage is illiterate (28% in each group), with merely 8% of the study g. and 4% of the control g. holding a bachelor's degree. In a same Egyptian study conducted with El Shaima Gamal Hasan et al. (2020), The objective is to evaluate the comprehension and efficacy of mothers whose children are undergoing chemotherapy for cancer. A study involving 35 mothers whose children. The findings indicated that over half (51.4%) had achieved basic education. **(14)** promote female education to enhance economic development, improve healthcare, and

facilitate childcare in a quickly evolving, technology-driven environment. **(15)**

Contrary to a different study conducted in 2024 in Saudi Arabia among 258 primary caregivers, this figure is disputed by Maha A. Alzahrani and Manal F. Alharbi. The percentage of guardians with a bachelor's degree was 42.2%, with 26.0% completed high school and 15.1% having finished middle school. There were only 6.2% of respondents who had no ability to read or write, and only 2.3% who had a degree from university or more **(16)**.

Research view, as a result of recurrent economic crises and national disasters most of Iraqi girls leave school attendance for that their parents prefer to be married and nurture more and more children without interest in the educational status. Low educational status affects negatively on mother lives and their family.

The distribution of the number of children is consistent across groups, with most mothers having 4–6 children (48% in both groups). Smaller proportions have

1–3 children (44% in the study g. and 40% in the control g.) or 7–9 children (8% and 12%, respectively).

The majority of mothers have 4-6 children (48% in both groups), with smaller proportions having 1-3 children (44% in the study g. and 40% in the control g.). This result agrees with a similar result done by Abdel-Haleem et al., in Egypt (2023), With respect to the data collected from this study, it was shown that a significant number of the women (91 out of 112) had four to six family members.

(12)

In this section we found the opposite of what Susanah et al. (2022) came across in the research they did on "Parental factors contribute to cancer in children during separation treatment during COVID-19, in Indonesia": that, out of 263 pediatric children with cancer that their mothers were examined, 68% had family members with fewer than four members **(17)**.

In Iraq, the Children Welfare Teaching Hospital's tumor registry confirmed cancer in 151 humans throughout January and December 2015, prompting the decision to prevent further

pregnancies for these women. This issue persists to be a source of concern for some families (17%), according to the investigate "Psychosocial The impact of Childhood Leukemia on Patients and their Families" by Fawaz S. Yousif et al., even though there are ongoing questions regarding the cancer's inheritance and reasonable explanations provided by the medical team. Because the human race is primarily concerned with conception, it's not surprising that the future of the families surveyed expressed worries about fertility issues as a result of cancer treatment (69%), future marriage (62%), and potential job prospects (52%) **(18)**.

As in middle east cultural viewer, prefer to bring more children that represent as strong point for father of the family but when family having child with leukemia and large members. Financial, physical, and social strains were all felt by family members as a result. fifty percent of the fathers have been waging earners, which puts a strain on the family because they have to take time spent off work to be at the medical facility with their sick children in case they need medication, food, or more tests. On the opposing side, three quarters of the mothers are mothers, which leads to the people who remain at home, especially in large families, have it rough. Treatment attrition was an important factor preventing patients with acute lymphoblastic leukemia from achieving a higher estimated event- free survival rate, which was already low when compared to the worldwide standard percentage.

Regarding monthly income, significant differences are observed; the study group shows a more even distribution across income categories, with the highest percentage (28%) earning 1,201,000–1,500,000 IQD. Conversely, the control group is predominantly in the lowest income category (less than 300,000 IQD), accounting for 64%.

This study disagrees with study to Huda El-Sayed Abdel-Haleem et al., in 2023 at Benha University, Egypt for (91) mothers and their children with leukemia concerning the age of the studied mothers, the present study findings showed that; the present study findings revealed that; half or more of their households were unable to meet their monthly financial commitments **(12)**.

In the same line with the findings of this study for (control group) correspond with those of, Asmahan.Q. Mohammed, Khatam.M. Hatab (2022) at College of Nursing, University of Baghdad for descriptive research included (40) children with acute lymphocytic leukemia mention that around 40% that every month money of the families is above than 900.000ID [(11)].

This finding came inconsistent with the study performed by Ochoa et al., (2023), This result stood counter the findings that Ochoa et al. (2023) witnessed when they explored 15 Hispanic/Latino parents' income levels through semi- structured telephone discussions [(20)].

Research shows that while free medical Iraqi services for cancer treatment are available, many needs are not met, leading to higher costs. This is particularly concerning for families with modest monthly incomes and with fathers or mothers leaving work. The increasing costs of care for cancer children include direct, indirect, and uncharted costs, including medical services, productivity loss, and pain related to cancer diagnosis and treatment.

The residency refers that most mothers in both groups reside in urban areas, with 72% in the study g. and 68% in the control g. living in city centers. In the same line with the findings of this study for (control group) correspond with those of, Asmahan.Q. Mohammed, Khatam.M. Hatab (2022) at College of Nursing, University of Baghdad for the findings are in line with the ones from a Turkish study from 2021 that found 35.7% (n = 107 people) of those who participated in the survey lived in a town, which is associated with the subject matter at hand. The outcomes are in line with those of an Iranian survey that found 38.5% of its individuals to be from rural areas and 61.5% to live in urban areas [(21)].

However, according to different research, a majority of mothers originated from countryside regions. The discovery may have something connection with the Minia Oncology Center, whose treats children from the Minia governorate and the adjacent semi-urban and countryside regions who are suffering from a variety of cancers. In a comparable vein, 57% of the population worldwide lived in rural areas in 2017, according to data compiled by the

World Health Organization's Educational, Scientific, and Cultural Organization (UNESCO). In a similar manner
57% of Egyptians lived in rural areas, and the country's urbanization rate was 1.68 percent per year, stated to the Egypt Demographics Survey (2020) [(22)].

Hospitalization durations vary between groups. In the study group, the most common length of stay is 2–3 days (40%), whereas in the control g., 4–7 days is more frequent (56%). Extended stays (8–12 days) are more common in the study g. (16%) more in the control group (4%).

The latest findings are challenged by a study that found that children had spent an average of 21.96 days (SD = 9.25) in the hospital and were diagnosed 31.65 days (SD = 5.90) preceding the assessment, according to data collected by Ana Ferraz et al. (2025) [(23)].

The sources of information indicate that both groups rely primarily on medical staff for information, with 84% of mothers in each group citing this as their main source. The internet is a secondary source for 16% of mothers in both groups.

Similarly, a 2018 survey indicated that 44.0 percent of caregivers received awareness-related details from nurses. Opposite to findings from Al-Ibady (2011), which showed that nurses themselves received no information from any source, this study found that 52.5% of nurses did not use any resource. A potential explanation is that nurses spend more time with patients and are thus perceived as being more physically near to them [(24)].

For point of view, the majority of mothers had low level of education. So, learning obstacles how to search for accurate information about leukemia on websites they may be faced with. For that mothers prefer to ask medical staff to get more clarifications. In addition, families gained from hearing about and discussing the experiences of other families who were in similar circumstances but had greater expertise with child care. They express feeling less lonely, anxious, and stressed
after communicating with other families. Findings from earlier research corroborated these narrower themes. Support for families

whose children got the same diagnosis of cancer and are undergoing chemotherapy is of the utmost importance. Meeting other families whose children were in the hospital, as well as those who had dealt with psychological problems before, helped them relax and gave them additional knowledge about their child past what they had gotten from the medical professionals.

Table.2. Discussion for Evaluation of Mothers' Readiness related to "Personal Status: Physical, Emotional, and Mental Readiness" among Study and Control Group

The findings in Table 2 summarize mothers' readiness in terms of physical,

emotional, and mental aspects across different stages for the study and control group.

The total average score for the study group increased from 5.49 (moderate) in the pre-test to 6.52 (moderate) in Post-test 1 and slightly decreased to 5.66 (moderate) in Post-test 2. In contrast, the control group's total average score progressed from 4.29 (moderate) in the pre-test to 4.39 (moderate) in Post-test 1 and improved to 4.94 (moderate) by Post-test 2.

The evaluation of mothers' readiness for hospital discharge, specifically concerning their personal status (physical, emotional, and mental readiness), reveals crucial differences between those receiving structured educational interventions and those receiving standard care. This multidimensional perspective is essential, as it reflects not only the cognitive understanding of discharge procedures but also the psychological and emotional preparedness of caregivers managing complex pediatric conditions such as leukemia.

In the study group, the progression of average readiness scores from 5.49 (moderate) at pre-test to 6.52 (moderate) at Post-test 1, followed by a slight decline to 5.66 (moderate) at Post-test 2, indicates that the implemented intervention had an immediate positive effect. This improvement suggests that educational programs, particularly those that address both informational and emotional needs, can effectively boost caregiver confidence and

preparedness at the point of discharge. However, the observed decline in Post-test 2 also underscores the potential for readiness to wane over time without continued support or reinforcement, especially in high-stress contexts like pediatric oncology.

A growing body of evidence supports the use of targeted discharge education and follow-up interventions. Found that structured education significantly improved parental readiness for discharge among caregivers of children with leukemia (**25**). Similarly, the work of Weiss et al. 2017, located in Milwaukee, Wisconsin, USA. emphasizes the importance of both teaching quality and emotional support in enhancing readiness and reducing post-discharge complications **(26).**

Conversely, the control group showed more modest gains (from 4.29 to 4.94, all within the moderate range), likely reflecting the limitations of routine discharge processes that may not fully address the unique and intensive demands of caregivers of children with leukemia. This is consistent to prior research by Andrea K Morrison et al., in 2014 for 503 caregivers indicates standard discharge procedures often fall short in adequately preparing caregivers, particularly in high-complexity medical cases **(27).**

These findings advocate for a multifaceted discharge planning approach one that extends beyond information delivery to include emotional support, reassurance, and practical caregiving strategies. For caregivers of children with chronic or life- threatening illnesses, this holistic readiness is not only a determinant of health outcomes but also of psychological well-being.

For point of view, personal status readiness particularly physical, emotional, and mental readiness improves with targeted educational interventions, highlighting the importance of comprehensive discharge planning. However, maintaining these gains requires ongoing reinforcement and support mechanisms, suggesting a need for healthcare systems to rethink standard discharge processes, especially in pediatric oncology settings.

Conclusion

The current study highlighted crucial results, that mothers of children with leukemia lacked knowledge about hospital discharge

readiness. However, the Oncology department at Welfare Teaching Hospital should implement regular orientation sessions during chemotherapy courses to enhance mothers' understanding of discharge readiness and home care.

Recommendations

Based on the results of the study, this study recommended the following:

Hospitals should regularly provide structured educational programs for mothers of children with leukemia to enhance their readiness for hospital discharge. These programs should focus on multi-dimensional support, addressing knowledge of child care, medical needs, coping strategies, and available support systems. Periodic follow-up sessions and tailored programs should be provided to mothers with longer illness durations or intensive treatment.

References

1. Essawy MA, Abohadida RM, Abd-Elkader WM, Fathy HM, Hassab HM. Comparing the effect of acupressure and ginger on chemotherapy gastrointestinal side-effects in children with leukemia. Complement Ther Med. 2021 Aug 1;60.
2. Pasha F, Urbančič D, Maxhuni R, Krasniqi S, Grajçevci Uka V, Mlinarič-Raščan I. Prevalence and Treatment Outcomes of Childhood Acute Lymphoblastic Leukemia in Kosovo. Cancers (Basel). 2024 Jun 1;16(11).
3. CANCER REGISTRY OF IRAQ ANNUAL REPORT.
4. Online Revista Gaúcha de Enfermagem Transitional care to home in the perspective of parents of children with leukemia. Available from: www.seer.ufrgs.br/revistagauchadeenfermagem
5. Fernandes P, Ra D, Silva R, Dos S, Ferreira M, Assunção D, et al. Preparing the return home of the children with cancer.
6. Mohamed Mustafa A, Mustafa El-Ashry N, Mahmoud S. Resilience and Psychological Wellbeing among Parents of Leukemic Child at 57357 Hospital. Egyptian Journal of Health Care. 2019;10(1).
7. Applebaum AJ, Kulikowski JR, Breitbart W. Meaning-Centered Psychotherapy for Cancer Caregivers (MCP-C): Rationale and Overview. Palliat Support Care. 2013;13(6).
8. Deribe L, Addissie A, Girma E, Abraha A, Adam H, Berbyuk Lindström

N. Stress and coping strategies among parents of children with cancer at Tikur Anbessa Specialized Hospital paediatric oncology unit, Ethiopia: a phenomenological study. BMJ Open. 2023;13(1).

9. Al-Ganmi AHA, Perry L, Gholizadeh L, Alotaibi AM. Behaviour change interventions to improve medication adherence in patients with cardiac disease: Protocol for a mixed methods study including a pilot randomised controlled trial. Collegian. 2018;25(4).
10. Mahmoud S, Elaziz NAA. Effect of Psycho-Educational Training Program for Parent's Having Child with Leukemia on Their Experience and Psychological Wellbeing. Journal of Education and Practice. 2015;6(12).
11. Qasim A. Quality of Life of Children age from (8- lessthan13) years with Acute Lymphocytic Leukemia Undergoing Chemotherapy at Hematology Center in Medical City. Iraqi National Journal of Nursing Specialties. 2022;35(1).
12. El-Sayed Abdel-Haleem H, Hassan Bayoumi M, Rady El-Said R, of Pediatric Nursing P. Barriers Faced by Mothers Caring for their Children with Leukemia during COVID-19 Pandemic.
13. Atout M, Tarawneh FS, Al-Kharabsheh A. Challenges Faced by Mothers Caring for Children with Leukaemia During COVID-19 Pandemic: A Qualitative Study. J Pediatr Nurs. 2021;58.
14. Shaima EG, Shaima Gamal Hasan E, Abd-Rabou Mohamed S, Mahmoud Ahmed S, Fathy Riad K, Sayed Ali A. P a g e | 65 Knowledge and Performance of Mothers Having Children with Cancer Undergoing Chemotherapy. Minia Scientific Nursing Journal (Print-). 2020;(8).
15. Mokbel TH, El Hefney EM, Hagras SM, Alnagdy AA, Badawi AE, Kasem MA, et al. Childhood glaucoma profile in Dakahelia, Egypt: A retrospective study. Int J Ophthalmol. 2018;11(4).
16. Alzahrani MA, Alharbi MF. Discharge Readiness Among Primary Caregivers in Pediatric Medical– Surgical Units in Jeddah, Saudi Arabia. Children. 2024 Dec 1;11(12).
17. Kuntz N, Anazodo A, Bowden V, Sender L, Morgan H. Pediatric cancer patients' treatment journey:
18. Child, adolescent, and young adult cancer narratives. J Pediatr Nurs. 2019;48.
19. Susanah S, Modjaningrat IF, Sari NM, Suryawan N. Parental Factors Contribute to Childhood Cancer Abandonment Treatment During COVID-19. Glob Pediatr Health. 2022;9.
20. Yousif FS, Ghali HH, Faraj SA, Farhan MF, Al-Hadad SA. Psychosocial Impact of Childhood Cancer on Patients and their Families. AL-Kindy College Medical Journal. 2021 Aug 30;17(2):79–83.
21. Huang RY, Lee TT, Lin YH, Liu CY, Wu HC, Huang SH. Factors Related to Family Caregivers' Readiness for the Hospital Discharge of Advanced

Cancer Patients. Int J Environ Res Public Health. 2022 Jul 1;19(13).

22. Ferraz A, Faria S, Jerónimo M, Pereira MG. Parental Psychological Adjustment in Pediatric Acute Lymphoblastic Leukemia: The Mediating Role of Family Functioning and Resilience. Cancers (Basel). 2025 Feb 1;17(3).
23. De Onis M, Onyango AW, Borghi E, Garza C, Yang H. Comparison of the World Health Organization (WHO) Child Growth Standards and the National Center for Health Statistics/WHO international growth reference: Implications for child health programmes. Public Health Nutr. 2006;9(7).
24. Morris JN, Roder D, Turnbull D, Hunkin H. The Impact of Cancer on Early Childhood Development: A Linked Data Study. J Pediatr Psychol. 2021;46(1).
25. Shawq AH, Al-Mousawi KM, Ajil ZW. Effects of caring children with leukemia on their mothers` psychosocial status. Medico-Legal Update. 2020;20(3).
26. Atout M, Tarawneh FS, Al-Kharabsheh A. Challenges Faced by Mothers Caring for Children with Leukaemia During COVID-19 Pandemic: A Qualitative Study. J Pediatr Nurs. 2021;58.
27. Weiss ME, Sawin KJ, Gralton K, Johnson N, Klingbeil C, Lerret S, et al. Discharge Teaching, Readiness for Discharge, and Post-discharge Outcomes in Parents of Hospitalized Children. J Pediatr Nurs. 2017;34.
28. Morrison AK, Schapira MM, Gorelick MH, Hoffmann RG, Brousseau DC. Low caregiver health literacy is associated with higher pediatric emergency department use and nonurgent visits. Acad Pediatr. 2014;14(3).