

Effectiveness of Instructional Guidelines on Anxiety and Coping Strategies among Mothers Having Children with Burkitt's Lymphoma

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Abstract

Background: Mothers of children with Burkitt lymphoma play a crucial role in the process of children's management and fulfilling the children's needs during the treatment period. **Aim:** To evaluate the effectiveness of instructional guidelines on anxiety and coping strategies among mothers having children with Burkitt's Lymphoma. **Research Design:** A quasi-experimental design with one group undergoing pre- and post-testing to achieve the aim of this study was used. **Subjects:** The purposive sample of 50 mothers of children with Burkitt's lymphoma was recruited. **Setting:** This study was carried out in the out-patients clinic in the pediatric oncology center at Mansoura university. **Tools of data collection: Tool I:** Structured questionnaire sheet, **Tool II:** Mother's knowledge regarding Burkitt's Lymphoma, **Tool III:** The mother's reported practice regarding the health needs and problems of their children with Burkitt's Lymphoma, **Tool IV:** (F-COPES) questionnaire and **Tool V:** Hamilton anxiety scale. **Results:** Findings revealed that there was a highly statistically significant reduction in anxiety among mothers and their children with Burkitt's lymphoma after instructional guidelines about coping strategies implementation than before implementation. **Conclusion:** The result was concluded that implementation of the instructional guidelines about coping strategies had a positive effect on reducing anxiety among mothers and their children with Burkitt's lymphoma after implementation compared to before. **Recommendations:** Generalization of instructional guidelines about coping strategies for all mothers and their children with Burkitt's lymphoma to alleviate their anxiety is recommended. Setting up emotional support groups to evaluate mother's feelings, providing accurate Burkitt's lymphoma-related information that addresses the health needs and problems of their children with Burkitt lymphoma.

Keywords: Anxiety, Burkitt's Lymphoma, Coping Strategies, Mothers.

Introduction:

A malignant non-Hodgkin B-cell lymphoma, Burkitt lymphoma (BL) is recognized as such. Oncogene C-MYC is overexpressed in the disease and is linked to chromosomal translocations, the Epstein-Barr virus (EBV), and HIV. Immunodeficiency-related, sporadic, and endemic are the three clinical classifications into which the World Health Organization (WHO) divides BL. With an average diagnostic age of six years old, it is more common in youngsters. The incidence of this type of cancer in men is three to four times higher than in women. Though its precise etiology is unknown, certain individuals and specific geographic areas are more susceptible to Burkitt lymphoma than others (Gabarda, et al., 2022).

Burkitt's lymphoma, particularly the endemic form that is common in Africa, is associated with the Epstein-Barr Virus (EBV) in nearly 100% of cases. In the sporadic forms that occur in Western countries, EBV is present in approximately 30% of cases and 40% of immunodeficiency-associated cases. The stages range from Stage 1 to Stage 4. In Stage 1 the lymphoma cells are in one area of your body (usually the lymph nodes), in Stage 4 they have spread to the bone marrow and/or your brain and spinal cord (Turki et al., 2022).

The symptoms of Burkitt lymphoma depend on the type: The endemic (African) variant usually starts as tumors of the jaw or other facial bones. It also can affect the gastrointestinal tract, ovaries, and breasts and can spread to the central nervous system, causing nerve damage, weakness, and paralysis. Other symptoms include Loss of appetite, Weight loss, Fatigue, Night sweats, and Unexplained fever (Geng, et al., 2022).

Because Burkitt lymphoma spreads so quickly, prompt diagnosis is essential. If Burkitt lymphoma is suspected, all or part of an enlarged lymph node or another suspicious disease site will be biopsied. In a biopsy, a sample of tissue is examined under a microscope. This will confirm or rule out Burkitt lymphoma (**Bahashwan, et al. 2022**). Intensive intravenous chemotherapy, which usually involves a hospital stay is the preferred treatment for Burkitt lymphoma. Because Burkitt lymphoma can spread to the fluid surrounding the brain and spinal cord, chemotherapy drugs also may be injected directly into the cerebrospinal fluid, a treatment known as intrathecal chemotherapy (**Biegańska, and Wolski, 2022**).

Education is a key component of supportive care. Nurses provide mothers with the confidence and skills they need to confidently and effectively care for their children. Additionally, education can help reduce worry and anxiety by giving mothers a sense of competence and control over how to manage their child's illness. For moms caring for their children with Burkitt lymphoma, emotional support is also another crucial aspect of nursing care (**Hildenbrand et al., 2019**).

Coping strategies are essential to comprehending the idea of stress. Stress was described by **Lazarus and Folkman (1984)** as the inability or lack of resources to deal with a particular occurrence and as a subjective experience of it. As a result, people react to stress in different ways and utilize various coping mechanisms to keep a particular level of adjustment. Stress is thought to be determined by the coping strategies that people adopt, which helps to explain why there are variances in how different people cope with stress (**Mikulic & Crespi, 2018**). Coping strategies are thought to either raise or decrease stress. There are various ways to categorize coping strategies; however, created an excellent taxonomy, describing seven coping strategies and two general coping strategies: rational and emotional coping (**Sandy et al., 2019**).

A pediatric lymphoma diagnosis forces the family to adopt a new outlook on life because the sickness will not only impact the sick child but also other family members, forcing each to figure out his new place in the constantly shifting landscape. In reaction to stressful events or conditions, coping mechanisms are described as "conscious and volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment." Family coping techniques refer to the group's capacity to recognize, manage, and release tensions that can significantly affect the child's and the family's quality of life. There's little doubt that how the family chooses to

handle these pressures will affect every individual in the family (**McCarthy et al., 2019**).

Systematic evaluations describing coping mechanisms are, as far as we are aware, rare, and qualitative research on the experiences of fathers and mothers of children with leukemia and lymphoma from many nations and cultures has just lately been published. The state of the Arab world as a whole and Egypt in particular are poorly understood. It is critical to distinguish coping strategies that may be linked to higher versus lower levels of symptoms and distress, given the variation in depressive symptoms and other types of emotional distress among parents of children with leukemia and lymphoma (**Ljungman et al., 2020**).

In addition to the emotional difficulties of raising a child with lymphoma, mothers of children with the disease face financial difficulties as a result of lost income and medical bills, as well as difficulties in explaining complicated aspects of the illness and its treatment to both their child and medical professionals. Generally speaking, mothers' social and professional lives are significantly impacted by treating childhood leukemia and lymphoma; frequently, this necessitates their leaving their professions to prioritize their medical care. Unhealthy communication, marital discord, and/or mothers' neglect of themselves might result from giving their whole attention to a kid (**Klassen et al., 2021**).

Nurses play an indispensable role in caring for children with cancers. Nurses not only provide technical and scientific knowledge but also give humanized care to promote the health, quality of life, comfort, and well-being of the sick child. Family Health Nurses coordinated the care while the parents were the principal caregivers and physicians served as consultants (**Burles, Holtslander, and Peternelj-Taylor, 2021**).

Significance of the study:

The incidence of NHL in Egyptians is several-fold higher, indicating that the national cancer burden was raised and in progress. Burkitt lymphoma, also known as small non-cleaved cell lymphoma, in Egypt, accounts for about 40% of childhood non-Hodgkin's lymphomas when they are around 6 to 18 years old (**Turki, et al., 2022**). Even with the hopeful prognosis that can be realistically given in most cases, the psychological impact of the diagnosis of Lymphoma is extreme and long-lasting (**Hashemi et al.,**

2020). There are many different and strong reactions from parents to children's lymphoma. The moms experience higher levels of worry and depression as a result of these unidentified occurrences, which can have an impact on their future goals and hopes. It has been demonstrated through research that moms of children with lymphoma undergo significant distress, particularly within the first year following diagnosis (Compas et al., 2019).

Aim of the study:

To evaluate the effectiveness of instructional guidelines on anxiety and coping strategies among mothers having children with Burkitt's Lymphoma.

Research hypothesis:

Mothers having children with Burkitt's Lymphoma post the instructional guidelines implementation are expected to experience a significant anxiety reduction and be able to effectively apply coping strategies.

Subject and Methods

Design:

A quasi-experimental design with one group undergoing pre- and post-testing to achieve the aim of this study was used. Similar to real experimental design, except for one criterion, is a quasi-experimental design. Finding the intervention's or treatment's effect is a common goal of time series research. Previous to and following the intervention, several observations are made (Grey et al., 2018).

Setting:

This study was carried out in the outpatient clinic in the pediatric oncology center that works five days a week from 9 am to 1 pm at Mansoura University Hospital.

Subject:

The purposive sample consisted of 50 mothers of children with Burkitt's lymphoma from the outpatient clinic in the pediatric oncology center at Mansoura University Hospital and was recruited under the following criteria: Children aged from 6 to 18 years old received chemotherapy in the hospital.

Sample size:

The required sample size was fifty children based on the following equation

$$n = \frac{t^2 xp (1 - p)}{M^2}$$

n= required sample size

t= confidence level at 95% p= estimated population m=margin of error at 5%.

Tools of Data Collection:

The following **five tools** were used to collect the data:

Tool I: Structured questionnaire sheet: it was designed by the researchers based on a review of the literature (Bemis, et al, 2020; Kanbar, et al. 2019; Fioretti, & Smorti, 2019) it was written in simple Arabic language to suit mothers` level of understanding, and it consisted of the following two parts

Part 1: It was concerned with the characteristics of mothers including (age, level of education, occupation, and residence.

Part 2: It was concerned with the characteristics of children with Burkitt's lymphoma including (age, sex, educational grade, and birth order).

Tool II: Mother's knowledge regarding Burkitt's Lymphoma which includes (definition, predisposing factors, clinical manifestations, diagnosis, treatment, and complications)(Kanbar, et al. 2019).

▪ **Scoring system:**

A scoring system was followed to assess mothers` knowledge of Burkitt's lymphoma. The scale score was 2 ranging from satisfied = 1, and unsatisfied = 0, the total was summed up and classified as 60% and above were considered satisfactory and less than 60% were considered unsatisfactory. The knowledge score was assigned 10 questions the maximum possible total score was 10 points.

Tool III: The mother's reported practice regarding the health needs and problems of their children with Burkitt's Lymphoma (nutrition, psychological support, exercises, protection from infection, follow-up) (Fioretti, & Smorti, 2016)

▪ **Scoring system:**

A scoring system was followed to evaluate the mother's practices towards the child with Burkitt's lymphoma according to his needs and problems, the reported practices score was assigned 85 questions the maximum possible total score was 18 points and the scale

score was 3 ranging from always = 2, sometimes = 1, and never = 0 the total was summed up and classified as 60% and above were considered healthy practices y and less than 60% were considered unhealthy practices.

Tool IV: (F-COPES) questionnaire:

McCubbin et al.'s (1996) Arabic translation of the questionnaire was taken from a previous study (Ljungman et al., 2014). A panel consisting of five (5) nursing specialists evaluated the questionnaire's translated version to see whether it retained its original content validity. Test and retest reliability were calculated, and the results showed that they were suitable for study ($r = 0.90$) (Moawad, 2012).

- Five subgroups of the coping patterns are identified by the questionnaire:
- Social support: this refers to the family's capacity to actively seek out and secure assistance from friends, neighbors, and other family members (e.g., sharing our troubles with relatives).
- Spiritual help: taking solace in a higher religion (e.g., engaging in religious or spiritual activity).
- Reframing: the capacity of the family to reframe upsetting situations in a way that makes them easier to handle (e.g., trusting that our family has the strength to address our difficulties).
- Seeking help: enabling a family to look for and accept assistance from others, such as contacting community organizations and programs that support families in need, is a key component of mobilizing a family to look for and accept aid.
- Passive appraisal refers to a family's capacity to tolerate difficult situations while minimizing their reaction, such as thinking that if we wait long enough, the issue will go away. Family coping behavior was measured by F-Copes. The subscales of the tool included the utilization of resources, both inside and outside the family system, as well as the perception of stressors inside the system. Additionally, the more palliative coping mechanisms as well as direct action coping were examined by the tool. Among the family's internal coping mechanisms were their trust in proactive approaches to problem-solving as well as more passive techniques like changing the family's viewpoint

or passive evaluation. Families employed resources including religion, the help of friends, neighbors, and extended family as part of their external strategy, and the use of resources available through community organizations.

The instrument was scored by adding the numbers that were circled for each subscale item, except items (17, 26, and 28), which had the numbers inverted. The subscales that were represented by the questions were: social support (Q1, Q2, Q5, Q8, Q10, Q16, Q20, Q25, Q29); reframing (Q3, Q7, Q11, Q13, Q15, Q19, Q22, Q24); spiritual support (Q4, Q6, Q9, Q21); and passive appraisal (Q12, Q17, Q26, Q28). The internal consistency reliability of the F-COPES is 0.89, ranging from 0.69 to 0.83 on the several subscales. Over 4 weeks, the F-COPES has a 0.81 test-retest correlation. The sixth-grade level of writing on this instrument took ten to fifteen minutes to finish. The F-COPES has been employed by researchers in a range of situations, including helping mothers raise children with physical, mental, or learning problems.

Tool V: Hamilton anxiety scale:

◆ It was applied in evaluating symptoms of anxiety. A psychological tool used to assess a patient's anxiety level is the Hamilton Anxiety Rating Scale (HAM-A), developed by Maier et al. in 1988. There are 14 questions focused on symptoms in it. A severity rating ranging from 0 (not present) to 4 (extremely severe) is assigned to each of these symptoms. After speaking with the patient and examining their symptoms, the doctor must decide how to respond to each question. For the (HAM-A) test, administration takes between 10 to 20 minutes. All questions are rated from 0 to 4, with a total score of 0–17 indicating mild anxiety, 18–25 mild to moderate anxiety, 26–30 moderate to severe anxiety, and extremely infrequently, a total score of above 30 indicating very severe anxiety.

Methods:

Fieldwork:

The study's data was collected from the middle of June to the end of November 2023.

A pilot study

To assess the clarity and feasibility of the data collection tools, a pilot study was conducted on 10% of (5) mothers of the total sample to produce the final form of the tools and to assess the applicability, feasibility, clarity, and objectivity of the tool. No modifications were made. These mothers were included later in the actual study sample.

Ethical considerations:

Official permission to carry out the study was obtained from the research ethical committee and through a letter issued from the Dean of the Faculty of Nursing, Mansoura University to conduct this study. Once the mothers were informed of the study's purpose and the confidentiality of the data, the researchers got their oral agreement for each mother to participate. All mothers in the study had the freedom to leave the study at any moment and were not subject to any obligations.

Tools Validity and Reliability:

Content validity of tools was carried out by a Jury of 5 experts in pediatric nursing psychiatric mental health nursing and the medical field. Each expert was asked to assess the tools' content coverage, phrasing, length, format, and total appearance as no modifications were done. The reliability of the instrument was investigated and the Pearson Product Correlation Coefficient was used to calculate its value using the test-retest approach, Test re-test reliability was done, $r = 0.91$ for the tools.

Procedures:

The actual study was composed of three phases:

Phase I: Preparatory phase:

To create the guidelines and the procedures for collecting data, a thorough review of previous and current literature covering many aspects of the problem was undertaken. Textbooks and journals were used for this, periodicals, and internet searches. Once the research directors were made aware of the investigation's objectives, formal approval was obtained for data collection. Everyone who took part in the study was granted consent. A survey of the literature on the various aspects of the concerns from the past and the present, both locally and globally, was conducted using books, essays,

periodicals, and magazines. Guidelines were prepared in the Arabic language to cover many parts of the study topic created to reduce anxiety through the application of Coping Strategies among the studied mothers. The researcher introduces herself to start a conversation and explain the goals of the study during the first interview. Each participant in the study completed all the data collecting tools a pre- and post-test.

Phase II: Implementation phase:

The planned guidelines were developed and implemented throughout (5) sessions / two days/week. Each session lasted from 50-60 minutes. The studied mothers were classified into five groups: each group consisted of 8-9 mothers. The guidelines have a general objective and every session has its specific contents and objectives.

The researchers created the instructional guidelines based on the requirements of the mothers under study, and they were presented to them in theoretical sessions covering the guidelines' content. These sessions used a variety of teaching techniques, including lectures, Photos, videos, PowerPoint presentations, role acting, group discussions, demonstrations, and re-demonstration. Furthermore, a range of educational resources was employed; including a statistics display and a handout that provided information on the pressures and stresses that mothers must deal with, as well as coping skills that help them manage their anxiety and get better at it. They also provided handouts in Arabic that were simple enough for them to understand, and they gave these to all the mothers post the conclusion of the instructional guidelines.

The guidelines included simple and clear information about Burkitt's lymphoma. Arabic brochure designed by the researchers; including instructional guidelines regarding Burkitt's lymphoma was introduced to the studied mothers at the end of the sessions. After every session, questions were answered and feedback was solicited. The sessions of instructional guidelines covered the following topics:

First session: included an overview of the goals and purposes of the study.

Second session: an overview of the theory behind Burkitt's lymphoma (definition, predisposing factors, clinical manifestations, diagnosis, treatment, and complications).

The third session: focused on practices with Burkitt's lymphoma (nutrition, psychological support, exercises, protection from infection, follow-up).

The fourth session: involved applying various anxiety coping mechanisms, such as gradual muscle relaxation and deep breathing exercises.

The fifth session: involved applying various anxiety coping mechanisms, such as guided imagery, visualization, book reading, prayer, and therapeutic touch.

Phase III: Evaluation phase:

The post-test was done post one month to explore the effectiveness of instructional guidelines on anxiety and coping strategies among mothers having children with Burkitt's lymphoma using the same pretest data collection tools.

Statistical analysis

Using the statistical package for social science (SPSS), version (20), the gathered data were coded, arranged, entered into a computer, and examined. The means, standard deviation, mean, and percentage distribution were used to analyze the data. Comparing qualitative variables was done using the Chi-square test while comparing quantitative variables was done using the Pearson correlation coefficient (r) for continuous parametric variables. $P < 0.05$ and $P < 0.001$ indicate a statistically significant difference, while $P > 0.05$ indicates a statistically insignificant difference. These findings were considered to be indicative of the significance of the data.

Results:

Table (1): Shows that less than three-fifths of the studied mothers' age ranged from 25 to 34 years. The mothers' average age was 28.77 ± 6.33 . Regarding education, less than half (44%) of mothers reported being secondary educated, while, more than half of their residences were in urban areas, and 76% of them not working.

Table (2): Shows that, 64% of children's age ranged from 6 to less than 9 years and the mean age was (8.56 ± 3.43) years, 70% of them were boys. Regarding educational level, 50% of them were not enrolled. About birth order, it was found that 58% of them were the first child.

Figure 1. Shows that the majority (80%) of the studied mothers didn't attend training courses regarding

Burkitt's Lymphoma.

Table (3): Illustrates that the studied mothers had the high mean scores of knowledge regarding Burkitt's Lymphoma implementation post instructional guidelines compared to instructional guidelines implementation as regards definition, predisposing factors, clinical manifestations, diagnostic evaluation, treatment, and complications of Burkitt's Lymphoma with a high statistical significance difference between pre/post phases of the instructional guidelines implementation at $P < 0.05$.

Figure 2. Portrays the percentage distribution of the studied mothers' total knowledge level regarding Burkitt's Lymphoma pre and post-instructional guidelines implementation. It was found that 82% of the studied mothers had an unsatisfactory level of knowledge of pre-instructional guidelines implementation, while 90% of them had a satisfactory level of knowledge of post-instructional guidelines implementation.

Table 4. Shows that the studied mothers had high mean scores of practices regarding Burkitt's Lymphoma post-instructional guidelines implementation compared to pre-instructional guidelines implementation as regards nutrition, psychological support, exercises, protection from infection, follow-up with a statistically significant difference between pre/post phases of instructional guidelines implementation at $P < 0.05$.

Figure 3. Shows mothers' total practices regarding Burkitt's Lymphoma pre- and post-instructional guidelines implementation and indicated that the majority (86%) of the studied mothers' had an unhealthy level of practices pre-instructional guidelines implementation while the majority (92%) of them had a healthy level of practices post-instructional guidelines implementation.

Table (5): Shows that there were highly statistically significant differences between the studied mothers' anxiety mean scores pre and post-instructional guidelines implementation

Figure 4: Shows mothers' total anxiety regarding Burkitt's lymphoma pre- and post-instructional guidelines implementation and indicated that the majority (38%) of the studied mothers had a very severe level of anxiety pre-instructional guidelines implementation while the majority (0%) of them had no very severe level of anxiety post-instructional guidelines implementation.

Table (6): Shows that, there were high mean scores of Coping strategies used by the studied mothers

having children with **Burkitt's Lymphoma** post-**instructional guidelines** implementation compared to pre-**instructional guidelines** implementation with a statistically significant difference between pre/post phases of **instructional guidelines** implementation at $P < 0.05$.

Table (7): Shows that, social support was significantly used ($p=0.012$) by those who had mild spiritual support ($p=0.001$) and was unexpectedly used more frequently with those who had very severe anxiety.

Table (8): Shows that, there was a positive statistically significant correlation between the total

scores of mothers' knowledge and their total practices' scores regarding Burkitt's lymphoma pre/post-instructional guidelines implementation at $P < 0.05$.

Tables (9): Illustrate that there was a significant statistical correlation between the total knowledge and practice of the studied mothers and their characteristics (age, residence, education & mothers' job) pre and post-instructional guidelines implementation ($P < 0.05$).

Table (1): Demographic characteristics among the studied mothers who had children with Burkitt's lymphoma. (n=50).

Items	No	%
Age/years		
<25	9	18.0
25-34	29	58.0
35-44	11	22.0
≥45	1	2.0
Mean and SD		28.77±6.33
Educational level		
Illiterate	8	16.0
Basic Education	12	24.0
Secondary education	22	44.0
Higher Education	8	16.0
Residence		
Urban	29	58.0
Rural	21	42.0
Mother's Job		
Work	12	24.0
Not work	38	76.0

Table (2): Demographic characteristics of the studied Children with Burkitt's Lymphoma (n=50).

Items	No	%
Age/years		
6:<9	32	64.0
9-12	10	20.0
12: <18	8	16.0
Mean and SD		8.56±3.43
Gender		
Boys	35	70.0
Girls	15	30.0
Educational level		
Not Enrolled	25	50.0
primary education	17	34.0
preparatory education	3	6.0
Secondary school	5	10.0
Birth order		
First	29	58.0
Second	14	28.0
Third	7	14.0

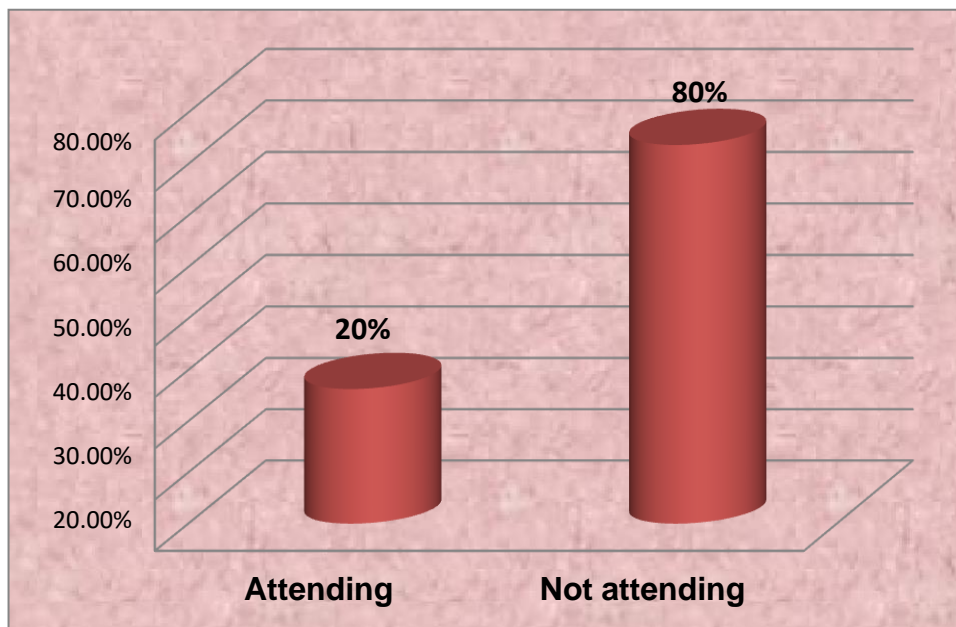


Figure 1: the studied mothers were distributed according to their attendance at training courses regarding Burkitt's Lymphoma (n=50).

Table 3: Mean scores of the studied mothers' knowledge regarding Burkitt's lymphoma pre/post- post-instructional guidelines implementation (n=50)

Item	Pre-instructional guidelines implementation Mean ±SD	Post- instructional guidelines implementation Mean ±SD	Significance	
			T	P-value
Definition of Burkitt's Lymphoma	2.70±1.12	4.76±1.55	12.44	.001**
Predisposing factors of Burkitt's Lymphoma	3.54±2.22	6.09±2.06	13.44	.001**
Clinical manifestations of Burkitt's Lymphoma	6.46±2.52	12.66±4.22	14.56	.000**
Diagnostic evaluation of Burkitt's Lymphoma	7.08±3.77	13.08±3.77	13.78	.001**
Treatment of Burkitt's Lymphoma	7.09±3.88	13.09±3.86	11.34	.001**
Complications of Burkitt's Lymphoma	1.56±0.55	2.56±0.88	8.67	.001**

*P-value<0.05 statistically significant **. Correlation is significant at the 0.01 level (2-tailed).

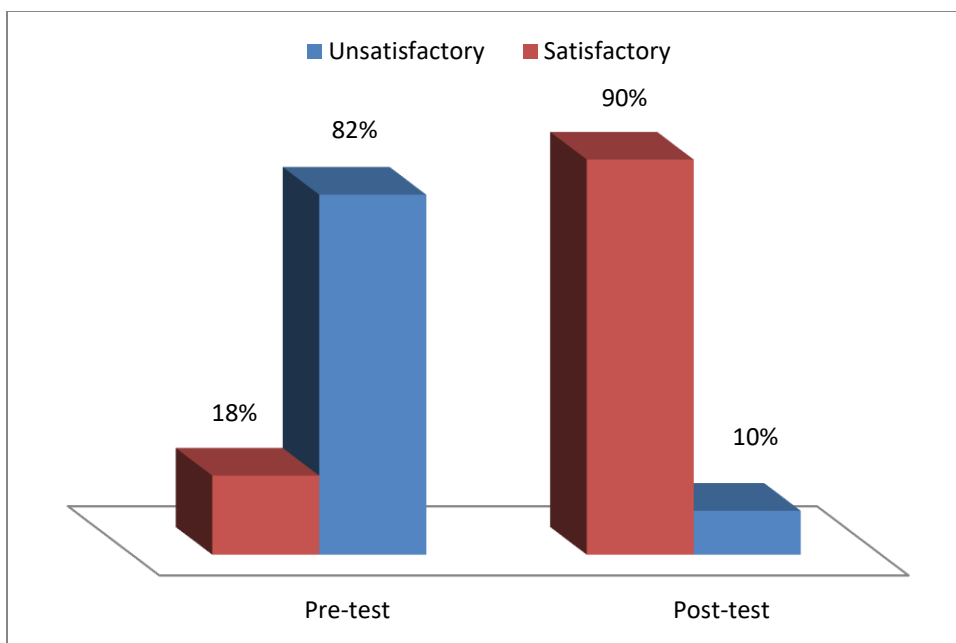


Figure 2: Total knowledge level regarding Burkitt's Lymphoma among the studied mothers' pre- and post-instructional guidelines implementation (n=50).

Table 4: Mean scores of the studied mothers' practices regarding Burkitt's Lymphoma pre/post- post-instructional guidelines implementation (n=50)

Mothers' practice	Pre Mean ±SD	Post-Mean ±SD	Significance	
			t	P-value
Nutrition	5.65±3.04	9.74±2.22	13.504	.001**
Psychological support	2.88±1.92	4.72±2.13	9.016	.005**
Exercises	3.06±1.42	7.98±1.12	10.203	.003**
Protection from infection	7.58±3.37	9.52±4.36	8.312	.011*
Follow-up	6.98±4.17	11.65±3.82	12.242	.001**

P-value<0.05

** highly statistically significant

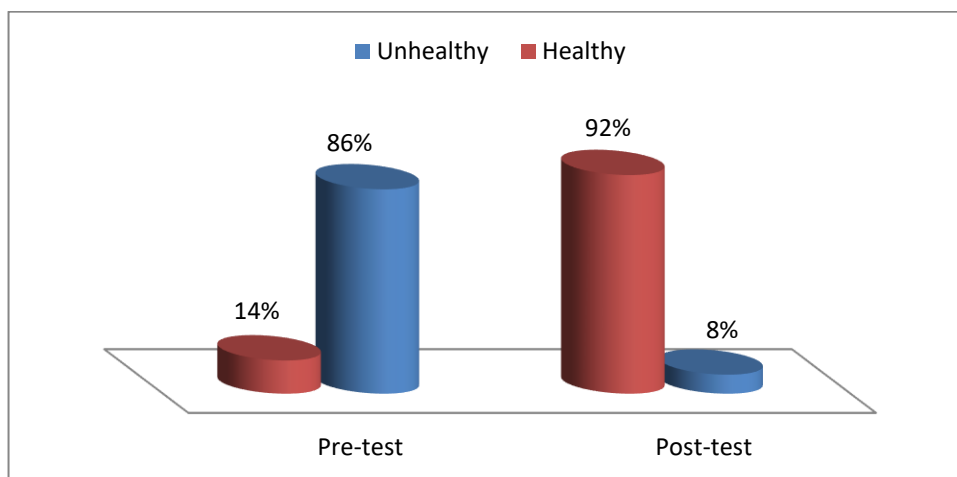


Figure 3: Total practice level regarding Burkitt's Lymphoma among the studied mothers' pre- and post-instructional guidelines implementation (n=50).

Table (5): Differences between the studied mothers' anxiety mean scores pre/post-instructional guidelines implementation

Item	Pre- Pre-instructional guidelines applying	Post- instructional guidelines applying	T-test	p-value
Anxiety mean scores	45.37 ± 7.55	26.97 ± 5.06	19.69	<0.001**

t: paired sample t-test P: **: Highly statistically significant at p<0.001

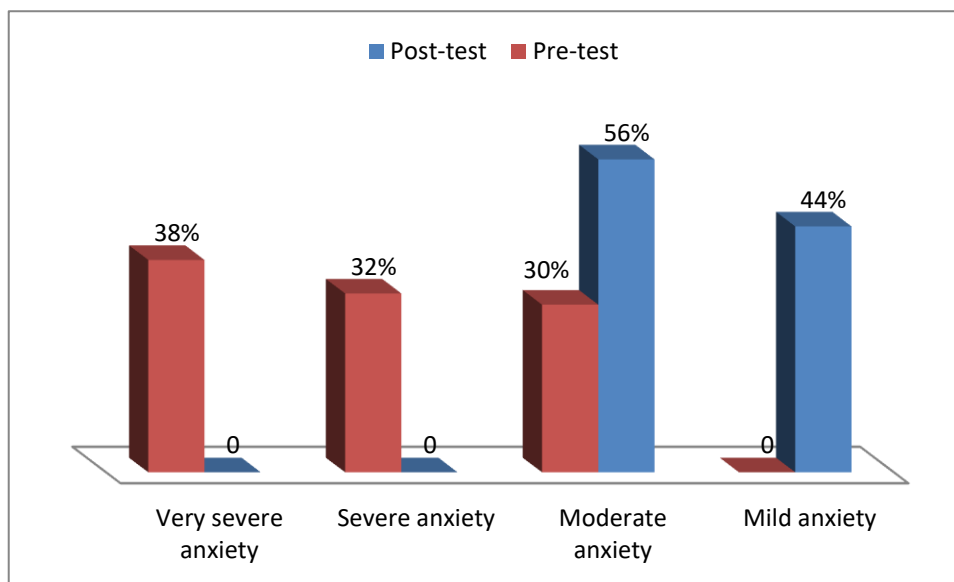


Figure (4): Total anxiety level among the studied mothers' anxiety level pre/post-instructional guidelines implementation

Table (6): Differences in Means of coping strategies among the studied mother's pre/post-instructional guidelines implementation

Coping strategy	Pre- instructional guidelines applying	Post- instructional guidelines applying	P-value
Social support	3.83 ± (0.66)	5.99 ± (0.77)	<0.001**
Reframing	4.34 ± (0.45)	6.75 ± (0.63)	<0.001**
Spiritual help	4.26 ± (0.70)	6.63 ± (0.80)	<0.001**
Seeking Help	3.91 ± (0.68)	5.87 ± (0.77)	<0.001**
Passive appraisal	4.55 ± (0.71)	7.67 ± (0.89)	<0.001**

Table (7): Coping strategies of mothers about Hamilton anxiety grades

	Mild	Moderate	Severe	V. Severe	F	P value
Social	4.44 ± (0.42)	3.66 ± (0.67)	3.77 ± (0.55)	4.22 ± (0.52)	3.97	<0.001**
Reframing	4.55 ± (0.33)	4.55 ± (0.52)	4.22 ± (0.39)	4.33 ± (0.34)	2.87	<0.001**
Spiritual	4.26 ± (0.44)	4.22 ± (0.39)	3.79 ± (0.59)	4.69 ± (1.31)	5.94	<0.001**
Seeking	4.33 ± (0.56)	3.88 ± (0.79)	3.88 ± (0.55)	3.89 ± (0.49)	7.88	<0.001**

Table (8): Correlation between studied mothers' total mean scores of knowledge and practices regarding Burkitt's Lymphoma pre/post- post-instructional guidelines implementation (n=50)

Items	Total mean scores of knowledge			
	Pre instructional guidelines implementation (n=50)		Post instructional guidelines implementation (n=50)	
	R	P-value	R	P-value
Total mean scores of practice pre	0.292	0.05*		
Total mean scores of practice post			0.443	0.001*

* P-value <0.05 ----- statistically significance

Table (9): Correlation between studied mothers' knowledge and practices regarding Burkitt's lymphoma post-instructional guidelines implementation and their demographic characteristics (n=50)

Nurses' demographic characteristics	Nurses' knowledge		Nurses' practice	
	R	P-value	R	P-value
Age	0.445	0.013*	0.523	0.001*
Education	0.543	0.001*	0.614	0.001*
Residence	0.422	0.014*	0.532	0.001*
Mothers' Job	0.536	0.001*	0.548	0.001*

* P-value <0.05 ----- statistically significance

Discussion:

The study findings indicate that the women under investigation had an average age of 28.77±6.33 years, which pertains to their demographic features. Not only were most of them married, but they also claimed to make insufficient money. Moreover, almost 2/3 of them are inoperative. Furthermore, a majority of the population lived in metropolitan areas, and fewer than half had only completed high school.

These outcomes disagreed with those of Mahmoud et al., (2022) study, which was conducted at Sporting Students Hospital's outpatient clinic in Alexandria, Egypt, and focused on "Depression, Burden, and Self-Efficacy among Caregiving Parents of Children with Cancer." According to their illustration, less than half of the caregivers were between the ages of 35 and 45. Less than 25% of them had completed secondary education, and the majority of them were married. Even so, almost one-third of them worked and attended universities. the majority of housewives.

Khatun et al., (2016) conducted a study in a Korean health center titled "Factors Affecting Maternal Coping in Korean Mothers of Children with Cancer," which further corroborated these findings. They disclosed that most mothers did not work for pay. Hence didn't make enough money.

The present study's findings were comparable to those of **Tork & Mersal, (2021)** study, "Effect of Pictorial Information Booklet on Mothers' Care of Their Children with Leukemia," which was carried out at the pediatric oncology outpatient clinic at the National Cancer Institute Cairo University in Egypt. They found that over half of moms were illiterate and over two-thirds were between the ages of thirty and forty. The bulk of them did not make enough money, and the majority were housewives.

Concerning the children's demographic data, the current study discovered that: less than two-thirds of youngsters aged six to nine. Less than 75% of them were first-born children, and 50% of them had no formal education. The study "Identification of clinical molecular targets for childhood Burkitt lymphoma" by **Zhang et al. (2020)** provided support for this finding. Nineteen BL patients were the subjects of the study, which was done at Shanghai Children's Hospital in China. The male-to-female ratio in all cases of childhood BL was one: zero, with a range of one to eleven years old. The median age of the cohort was five and a half years. In the opinion of the researchers, the incidence children Burkitt lymphoma increased in male children and children of school age. However, the incidence of Burkitt lymphoma decreased in adolescents.

According to the current study's findings, most of the mothers who were evaluated did not go to training sessions on Burkitt's lymphoma. The researchers believed that this demonstrated the examined moms' need for the use of instructional principles.

The study's findings showed that, when it came to the definition, predisposing factors, clinical manifestations, diagnostic evaluation, treatment, and complications of Burkitt's lymphoma, the mothers under investigation possessed higher mean scores of knowledge regarding the implementation of the guidelines post-implementation than they did during the pre-

implementation phase. There was also a significant statistical difference between the pre-and post-implementation phases. From the perspective of the researchers, it demonstrated the beneficial outcomes of implementing instructional guidelines that satisfied the needs of the moms under study after implementation.

The current study's findings demonstrated the mothers' overall level of knowledge both before and after the application of instructional guidelines about Burkitt's lymphoma. It was discovered that while most of the women under study possessed a sufficient level of knowledge regarding the application of post-instructional guidelines, the majority of them possessed an unsatisfactory level of knowledge regarding pre-instructional guidelines.

The findings of a study conducted in the pediatric oncology outpatient clinic and inpatient department of the National Cancer Institute (NCI), Cairo University, Egypt by **Taha et al., (2019)** titled "Effect of Nursing Instructions on Knowledge and Practice of Mothers Having Children with Leukemia Undergoing Chemotherapy," corroborated this outcome. It was discovered that the majority of moms lacked or had inaccurate information about the causes, signs, and treatments of pediatric cancer. From the perspective of the researchers, the majority of moms whose children had Burkitt lymphoma were young when they got married, had little information, and had unhealthy lives.

Mothers who participated in the study reported practicing Burkitt's lymphoma overall, and the results showed that after the implementation of the instructional guidelines, the mothers' mean scores for nutrition, psychological support, exercise, protection from infection, and follow-up were higher than those of the pre-implementation phase. This difference was statistically significant. According to the researchers, this demonstrated that implementing instructional standards successfully improved the moms under study's level of knowledge.

The current study's findings provided insight into mothers' overall practices regarding Burkitt's lymphoma both before and after the implementation of instructional guidelines. It also showed that most of the mothers under investigation had unhealthy practices before the

implementation of the guidelines, but the majority of them had healthy practices following the guidelines. The outcome of the study "Structured Teaching Program Enhances the Knowledge of Mothers to Take Care of Children with Leukemia" by **Saeed et al., (2021)** at the Cancer Research Institute, Sri Raghvendra Hospital, India, did not align with this one. They provided evidence that fewer than half of the mothers followed poor hygiene habits.

The current study's findings showed that the mothers under investigation had significantly different anxiety mean scores before and after the **instructional guidelines** implementation. According to the researchers, this might be explained by the fact that the mothers' anxiety during the pretest was elevated, which was likely caused by their concerns about the health and condition of their children. In addition, mothers did not assist in caring for their children; instead, they simply blamed themselves for the illness. Mothers stated that having cancer caused their children to be misinterpreted and shunned by others. They believed that strangers' "colored eyes" caused their children to feel anxious and stressed.

The current study's findings showed that, after the implementation of instructional guidelines, mothers of children with Burkitt's lymphoma employed higher mean scores of coping strategies than they had before, and that there was a statistically significant difference between the pre-and post-implementation phases of the guidelines. From the perspective of the researchers, this demonstrated that instructional guidelines were successfully implemented in raising the mothers' awareness of Burkitt's lymphoma and equipping them with appropriate coping mechanisms to help them manage their children's medical conditions and lower their anxiety levels.

According to the study's findings, moms use a more passive appraisal approach, which is followed by reframing, seeking out spiritual support, asking for assistance, and obtaining social support. This could be because the majority of mothers believe that lymphoma is a terminal illness for whom there is no hope for recovery. These findings diverge from those of **Hildenbrand et al. (2019)** and his team, who showed that spiritual assistance was the most frequently employed tactic. However, women tended to use coping mechanisms more frequently, such as cognitive restructuring and social support, according to **Kupst & Schulman, (2019)**.

As a result of the current study's findings, people with mild anxiety were shown to use social assistance substantially more frequently than people with severe anxiety, for surprising reasons. Additionally, mothers with modest anxiety were found to use social support significantly. While people with extremely severe anxiety unexpectedly used spiritual assistance more frequently, others with less severe anxiety may have appreciated the help of friends, neighbors, and colleagues.

The study's findings showed that, both before and after the application of instructional guidelines, there was a positive statistically significant association between mothers' overall knowledge scores and their overall practice scores for Burkitt's lymphoma. These findings emphasize the idea that knowledge shapes behavior and that mothers' actions will become ineffective in the absence of accurate and appropriate information. The link can be explained, according to the researchers, by the fact that practices for improvement mirror advances in knowledge. Additionally, mean mothers can practice effectively after they have acquired sufficient expertise. The results of **Monier et al., (2022)** showed that there was a strong statistically significant association between the mothers' reported practices and their level of knowledge. The study supported their findings.

Additionally, the paper "Effect of Health Coaching Intervention on Mothers' Performance and Quality of Life of their Children with Beta Thalassemia" by **Mohammed et al., (2022)** is noteworthy. Seventy women participated in the study, which was carried out at the inpatient pediatric department of Mustafa Hassan Hospital, which is connected to Fayoum University in Egypt. They discovered an extremely significant positive correlation between total knowledge and total practices.

The study's findings showed a statistically significant relationship between the mothers' overall knowledge and practice and their pre-and post-implementation characteristics (age, education, place of residence, and kind of job). These results disagreed with research by **Monier et al., (2022)** titled "Assessment of chemotherapy safe handling among mothers of children with cancer at home." Two hundred mothers of children undergoing chemotherapy at home were the subjects of the study, which was done at the Children's Cancer Hospital in Cairo, Egypt. Regarding the features of the

kids they researched, they discovered that $M \pm SD = 4.34 \pm 1.093$ represented less than two-fifths of kids between the ages of 6 and less than twelve. Regarding the educational level of children, half of them were not registered yet. According to the researchers' point of view incidence of Burkitt lymphoma increases in families living in rural communities. However, most mothers of children with Burkitt lymphoma had a young age when married.

Conclusion:

The result was concluded that implementation of the instructional guidelines about coping strategies had a positive effect on reducing anxiety among mothers and their children with Burkitt's lymphoma after implementation compared to before.

Recommendations:

Generalization of instructional guidelines about coping strategies for all mothers and their children with Burkitt's lymphoma to alleviate their anxiety is recommended. Setting up emotional support groups to evaluate mother's feelings, providing accurate Burkitt's lymphoma-related information that addresses the health needs and problems of their children with Burkitt lymphoma.

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