

## Effect of Self –Care Guidelines on Quality of Life for Leukemic Patients Undergoing Chemotherapy

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### Abstract

**Background:** Patients with leukemia undergoing chemotherapy have problems and side –effect which considered life –threatened and affect their quality of life . This requires self-care guidelines for those patients to improve their quality of life. **The aim of this study** was to assess the effect of self-care guidelines on quality of life for patients with leukemia undergoing chemotherapy .**study Design:** A quasi experimental design. **Setting:** the study was conducted at the inpatient and outpatient clinics in Hematological Unit affiliated to Ain Shams University Hospital. **Study subjects:** A purposive sample of adult patients newly diagnosed with leukemia (No=100). **Data collection tools:** Structured interview questionnaire for the patients with leukemia undergoing chemotherapy, Quality of Life Cancer survivors Questionnaire and Patients Self-care practices observational checklist.**Result:** 28% of control group and 84% of the study group got total satisfactory level of knowledge post implementation of self-care guidelines with highly statistical significant between them at P value < 0.01, while there was highly statistically significant deference between study and control groups regarding satisfactory level of self-care practices post implementation of self-care guidelines at p-value was <0.01. Moreover, 70% of the patients in the study have good total quality of life post implementation of self-care guidelines with highly statistical significant differences between two groups .**Conclusion:** Implementation of self-care guiltiness had statistically significant positive effect on quality of life dimensions for patients with leukemia undergoing chemotherapy which support the study hypothesis. **Recommendation:** Implementing systematically continuous self-care guidelines in hospitals for patients with leukemia, generalization of self-care guidelines for patients with leukemia in other media such as: newspapers, television, and the radio to help improve the health status of these patients and manage the chemotherapy side effects and A simplified, comprehensive and illustrated Arabic language guided booklet with images about the self-care guidelines should be submitted to each newly admitted patient with leukemia.

**Key words:** Children, Hemodialysis, Nurses, Performance, Renal failure.

### Introduction

Leukemia is a life-threatening illness that significantly affects a patient's physiological, psychological, social and

spiritual well-being. Leukemia is a form of cancer that targets the blood. Blood contains different types of cells such as red blood cells, white blood cells (WBCs), and platelets. The normal life cycle of these cells (formation, growth,

function and death) is controlled in part by the bone marrow. In many instances, if the control over WBCs life cycle is disturbed, leukemia is the result. The number of WBCs will be higher than other blood cells, they will stop dying normally and they will not carry out their function in the body, such as fighting infections and healing wounds (**Black & Hawks, 2018**)

Leukemia may be classified based on the pace of progression. The beginning of leukemia may be sudden (acute) or slow and gradual (chronic) , There are various types of leukemia. The four main types include Acute Myelogenous Leukemia (AML), Chronic Myelogenous Leukemia (CML), Acute Lymphocytic Leukemia (ALL) and Chronic Lymphocytic Leukemia (CLL) . There are some other forms of leukemia which are normally infrequent; these are hairy cell leukemia, T-cell prolymphocytic leukemia, large granular lymphocytic leukemia and adult T-cell leukemia (**Smeltzer et al., 2017**).

Leukemic patients receiving chemotherapy need information about the drugs they take and the self-care they must practice in order to help prevent serious complications. "For the self-care behaviors to be effective, leukemic patients are required to know the range of side effects they are likely to experience; they also need precise instruction on how to manage the side effects, Common side effects of chemotherapy include the fatigue or weakness, alopecia or hair loss, including loss of eyelashes, eyebrows, and body hair, nausea, vomiting, diarrhea, or constipation, poor appetite or changes in taste, numbness, tingling, and pain in the hands or feet, problems with memory or concentration, dry skin, changes in

skin color, or easy bruising, weight loss or gain (**Savard, Ivers& Morin, 2015**).

Self-care guidelines is the essential component for patients with leukemia to cope with the illness and chemotherapy. leukemic patients must "learn" many things about living with chemotherapy and maintaining their way of life, Performing self-care in daily life" is the strategies to perform self-care to fit with the daily life. Self-care" is a problem-solving technique which affect on the patients quality of life and help the patients to cope with their illness and it's management, the main focus of which is leukemic patient care with help from the family within a nursing context (**Moore & Beckwitt, 2013**).

Quality of life is defined by (**Prigerson et al., 2015**) as an individual's subjectively determined personal satisfaction with daily life as influenced by evaluation of physical, psychological, social and spiritual well-being. Quality of life is a multidimensional concept based on individual needs, choices and control and influenced by individual and environmental or contextual factors. Quality of life is the multidimensional evaluation by both interpersonal and social normative criteria of the personal and environmental system.

Nursing management for patients with leukemia should emphasize on comfort, minimize the adverse effects of chemotherapy, promote preservation of veins, manage complications, and provide teaching and psychological support. Nursing management for patients with leukemia, not only provides nursing care, but also focuses on providing complex care for patients such as: preparation, giving chemotherapy drugs, management

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of acute and chronic leukemia and psychological support for patients with leukemia. Also the nursing practice, with the nursing role in community health nursing, involves the same primary, secondary, and tertiary prevention focused on nursing care (**World Health Organization, 2016**).

### **Significance of the study:**

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The incidence of leukemia is increasing and mortality rate among the affected patients increases, about 60,140 individual diagnosed with leukemia and nearly 24,400 die with this disease in United States during the year 2016. Complication of leukemia and side effect of its treatment may be frightening, painful and often embarrassing to patient with leukemia (**National Cancer Institute, 2016**).

High incidence of leukemic patients that admitted to the Hematology Unit affiliated to Ain Shams University Hospital (2014-2015) was 1250 and receive chemotherapy (**Ain Shams University Hospital**) poor management and self-care guidelines will affect negatively on their physical, psychological, social and spiritual quality of life, while The involvement those patients in selfcare can enhance their perception of control and quality of life by equipping them with relevant the knowledge, behaviors and confidence to assume more control of their condition (**Berger, Shuster & Roenn, 2013**).

### **Aim of the study:**

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This study aimed to assess the effect of self-care guidelines on quality of life among leukemic patients through the following:

1- Assessing of quality of life dimension of leukemic patients undergoing chemotherapy.

2- Developing and implementing self-care guidelines on leukemic patients undergoing chemotherapy related to their quality of life.

3- Evaluating the effect of self-care guidelines on quality of life for leukemic patients undergoing chemotherapy.

### **Research Hypothesis:**

**This study was hypothesized that:**

The implementation of self-care guidelines for leukemic patients undergoing chemotherapy will have positive effect on quality of life for the study subjects.

### **Subjects and Method**

The present study was carried out through:

- I- Technical design.
- II- Operational design
- III- Administrative design
- IV- Statistical design

#### **I- Technical design.**

##### **a- Research design:**

A quasi-experimental design was utilized to achieve the aim of this study.

##### **b- Research Setting:**

The study will be conducted at the inpatient and outpatient clinics in Hematological Unit affiliated to Ain Shams University Hospital.

**c- Subjects:**

A purposive subjects of 100 patients newly diagnosed with leukemia and undergoing chemotherapy was admitted to the previously mentioned settings and selected to certain inclusion and exclusion criteria . The study subjects were divided into two groups : (study group) who had the self- care guidelines & routine care and (control group) who had only the routine care . The sample size was calculated according to power analysis equation calculating the flow rate of patients diagnosed as leukemic patients. They were admitted to Ain Shams University Hospitals as follows:

- Type I error ( $\alpha$ ) = 0.05
- Type II error ( $\beta$ ) = 0.1
- With power of test 0.90 (1-B) 90%

**Inclusion criteria:**

- Adult patients from both sexes newly diagnosed with leukemia undergoing chemotherapy and free from other chronic diseases that may be interfere with self-care abilities.
- Leukemic patients undergoing chemotherapy with different educational level who don't receive any self- care guidelines or educational instructions and agree to participate in the study (study or control group). And free from mental or psychiatric disorders.

**d-Tools of data Collection**

**Three tools were used for data collection:**

**Tool I:Structured Interview Questionnaire for the leukemic patient's undergoing chemotherapy:**

It will be developed by the researcher based on recent literature review (Young (2006) ; Daniels, Nicoll & John (2007); Black & Hawks (2008): Gates & Fink (2008); Canellos & Carpenito-Moyet (2010); Courneya & Friedenreich (2011); Decker & Lee (2011); Dunphy & Winland-Brown (2012); Berger, Shuster & Roenn (2013); and Bauer ( 2014).

**It includes three parts as following:**

**Part 1: Demographic Data of the leukemic patients undergoing chemotherapy.**

It include patients `age, gender, occupation, marital status, level of education...etc.

**Part 2: Medical Health Profile of the leukemic patients undergoing chemotherapy( clinical data sheet) :**

It will be used to collect data about medical history for patients with leukemia which include present and past history of the disease, family health history and treatment regimen.

**Part 3: patients `Knowledge regarding leukemia disease and treatment:**

**This part divided into the following section:**

A- It was concerned with assessment of patients knowledge regarding leukemia such as definition,

causes and risk factor, signs and symptoms, complication of leukemia and treatment methods . It was composed of (7) multiple choice questions.

B- It was concerned with assessment of patients` knowledge regarding chemotherapy and its effect such as definition, aims , , side effects and routes of administration . It was composed of (5) multiple choice questions.

C- It was concerned with assessment of patients' knowledge regarding self- care needs including: physical, psychological, social, functional and spiritual aspects. It was composed of (131) items: the response for each item was yes or no. This items were distributed as the following physical self- care aspect (112) items, psychological self-care aspect (8) items, social family and functional self-care aspect (7) items and spiritual self-care aspect (4) items.

➤ **Scoring system**

Each correct answer was graded (1) and incorrect answer was (0). The total score of patients' knowledge assessment were (146) grades: ( 131) regarding total score of patients self-care , Knowledge regarding leukemia (7) grades and regarding chemotherapy description (8) grades

**- Total score was considered as the following:**

- >60% (>86 grades) was satisfactory.
- < 60% (< 86 grades) was unsatisfactory.

**Tool II: Quality of Life Cancer survivors Questionnaire: (Quality of Life Patient/Cancer Survivor Version)**

It was adapted from **Ferrell, Hassey & Grant, (2012)**. It was used to assess the QOL dimensions for patients with leukemia and undergoing chemotherapy, translation from English to Arabic was done and back translation for this tool was done to assure accuracy. The scale included (40) items as the following: physical wellbeing (8) items, psychological wellbeing ( 18) items , social wellbeing ( 8) items , spiritual wellbeing ( 6) items.

➤ **Scoring system**

The patients response for each statement was made on a 10 point likert response scale, where 0= no problem , from 1 – 3= mild problem , from 4-6 = moderate problem and from 7 – 10 = sever problem .

The score of each statement for every subgroup were summed up giving a total score for every subgroup , and then the total score for all domains were calculated. the subgroup and total domains were categorized into poor QOL , average QOL and good QOL as the following :

- Poor QOL= 0- < 50%
- Average QOL = 50-< 75%
- Good QOL = 75% & more

**Tool III: Patients Self-care practices observational checklist :**

It will be developed based on recent literature review (**Daniels, Nicoll, & John (2007); Gates & Fink (2008);**

Carpenito-Moyet (2010) ; Courneya & Friedenreich (2011); Decker & Lee (2011); Dunphy & Winland-Brown (2012); and Bauer, (2014) ) to assess patients ability to perform skills related to self- care which were important to detect and prevent complications . the response of each procedure was divided into (done, not done) .The observational checklist was composed of eight self-care skills including (hand washing , oral care, temperature measurement ,pulse measurement, respiration measurement, deep breathing exercise, rang of motion and relaxation exercise).

**Scoring system for self-care practices (observational checklist):**

The total grade of patient's self-care practice observational checklists was (91) grades. One grade was given to the step which was done and zero to the step which was not done or incorrectly done . it was distributed to eight procedures the grades were distributed as the following : hand washing (8) grades , oral care (9) grades , temperature measurement (11) grades , pulse measurement (5) grades , respiration measurement (4) grades ,breathing exercise (5) grades , relaxation exercise (9) grades , rang of motion exercise (40) grades .

**Total score was considered as the following:**

- > 60% (> 55 grades) was considered satisfactory level of self-care practices .
- < 60% (< 55 grades ) was considered unsatisfactory level of self-care practices.

**II-Operational Design:**

It includes preparatory phase, content validity and reliability, pilot study and field work.

**The preparatory Phase:**

This phase was carried out through developing the data collection tools after reviewing the recent related literatures in periodicals, internet research and other resources, Outlining all areas to be included in the self-care guidelines educational booklet through extensive review of the literature and other available resources, Designing the self-care guidelines educational booklet preparing of its content and obtaining experts' opinion to ensure booklet's validity.

**B. Content validity and Reliability**

**Validity:** face and content validity of the suggested tools was done through a group of 7 experts of medical surgical nursing department, Faculty of Nursing, Ain Shams University. The jury reviewed the tools for clarity, relevance, comprehensiveness, and simplicity; then based on the opinion of the jury minor modifications were carried out, and then the final forms were developed.

**Reliability:**

Alpha Chronbach test was used to measure the internal consistency of the 3 tools used in the current study As the following: 1 st tool: structured interview questionnaire ( knowledge of leukaemia , chemotherapy) is (0.827) , self-care knowledge is (0.875), 2 nd tool : quality of life is (0.825) , and 3 rd tool: patients self-care practice ( observational checklist) is (0.895). (**Appendix VIII**)

### **C. Pilot Study:**

A pilot study was conducted on 10% of the study subjects (10 patients with leukemia undergoing chemotherapy) in order to test the applicability of the study tools, the clarity of the study tools, as well as estimating the average time needed to complete the tools. Accordingly, necessary modifications were made for the final development of the study tools. Some questions and items were omitted, added or rephrased and then the final forms were developed. Patients selected for the pilot study were excluded from the study subjects.

### **D. Field Work:**

The study was started and finished through the following phases:

#### **Planning phase:**

- The patients who fulfilled the inclusion criteria were selected. The researcher obtained the patients' oral consent for participating in this study after explaining the aim of the study.
- Collection of data was begun with the patient's interview questionnaire, and it was completed by the researcher within (10-15 minutes). After that, the leukaemia QOL Questionnaire took about (10-20 min.). in the end, self-care practice was also completed by the researcher within about (15 min) .
- Filling in the previous mentioned tools was done before implementation of the self-care guidelines according to the patients' awareness and health condition for the study group .
- All information gathered through data collection tools was interpreted to

identify the individualized learning needs.

- The researcher set up a teaching session plan covering all objectives. These objectives were categorized into general and specific objectives.
- The self-care guidelines resources and facilities were allocated in the haematological department that affiliated to Ain-shams university hospitals which located in the third floor and consisted of 13 rooms and every room contain two beds which the sessions were conducted in inpatients units inside the patients rooms .
- The researcher determined the teaching strategy (timetable of sessions, teaching methods, media used and learners' activities).
- After data collection, the appointment for starting teaching sessions was detected and scheduled with study group subjects.

#### **Implementation phase:**

Data collection from patients for this study took about 7 months , started from the beginning of May 2017 to the end of November 2017 .Data were collected first from the control group from May to July 2017, then from August 2017 to October 2017 , to the study group. Data were collected 3 days/week. First, the researcher greeted the patients, introduced herself and explained the aim of the study. The researcher took the patients telephone number at the first time to determine the second and the third appointments in order to complete data collection process. Specific infection control precaution were considered as

hand washing, wearing gown, mask and over head by the researcher during every visit for hospitalized patients. Data was collected as soon as patients felt well enough to participate and abled to answer questionnaire, choices were recorded by the researcher.

For the control group, the pre and post assessment were done to assess the patients knowledge regarding leukaemia and chemotherapy and to determine self-care knowledge and practice and assess the patients quality of life . Pre and post assessment involved assessment of socio-demographic characteristics, clinical data sheet, knowledge & practice regarding self-care and QOL questionnaire for patients.

Self-care guidelines were discussed to the patients by the researcher individually .Number of sessions based on patients needs was 8 theoretical sessions and 3 practical sessions , each sessions was spent approximately 30-45 minutes after explaining the objective of each sessions . The researcher demonstrated the practical part of self-care guidelines using the available equipment's, videos, and booklet.

#### **Evaluation phase:**

This phase was performed to both study and control groups .The effect of self-care guidelines was evaluated . this conducted one month after implementation of self-care guidelines sessions to determine the retention knowledge and performance of patients by comparing the changes on their knowledge and performance regarding leukemia and chemotherapy in addition to its effect on the patients quality of life .

#### **3- Administrative Design:**

An official letter was issued from the Faculty of Nursing, Ain Shams University to the directors of inpatients haematological and out patients clinics at Ain Shams University Hospitals at which the study was conducted, explaining the purpose of the study and requesting the permission for data collection from the study and control group.

#### **Ethical Considerations:**

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**The ethical research considerations in this study included the following:**

- The research approval was obtained from the Ethical Committee in Faculty of Nursing, Ain Shams University before starting the study.
- The researcher clarified the objective and the aim of the study to the patients to obtain their cooperation. oral consent was obtained from the patients to ensure willingness to engage in the study.
- The researcher maintains anonymity of the subjects and confidentiality of the subjects' data.
- The patients were allowed to choose to participate or not and they were informed that they have the right to withdraw from the study at any time without giving any reason.
- Values, cultures and beliefs were respected.



### **Statistical Design:**

The collected data were organized, categorized, tabulated and statistically analyzed using the Statistical Package for Social Science (SPSS) version (16.0) and (Excel 2010) to evaluate the studied subjects' changes throughout the study phases (Pre & Post), and to evaluate the differences between the groups under study as regards the various parameters. Data were presented in tables and charts. The statistical analysis includes: percentage (%), mean, standard deviation (SD), Paired T test, r-test, and P-value.

The observed differences and association were considered as follows:

- Non-significant (NS) difference was obtained at  $p > 0.05$ .
- Significant (S) difference was obtained at  $p < 0.05$ .
- Highly significant (HS) difference was obtained at  $p < 0.001$ .

### **Result**

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**Table (1):** Shows the number and percentage distribution of socio-demographic characteristics among patients included in the study. The mean age of the study group was  $34.28 \pm 5.07$ , while the mean age of the control group was  $35.67 \pm 4.21$ . Regarding gender of the study and control group, it was found that 90.0% of the study group patients were males and 80.0% of the control group patients were males. As regards their job, about 70% of the study group and 48% of the control group their work were manual with non-statistically differences between them as  $p > 0.05$ .

Regarding to marital status of the patients under study, it was found that the percentages of the study and control group whom married were (76% and 78%) respectively. As regards their educational level, 40% of the study group and 80% of the control group can read and write.

**Table (2):** This table displays that there is no statistically significant difference in all aspects of satisfactory level of physical self-care knowledge between the patients in the study and control group pre implementation of self-care guidelines except their knowledge regarding anemia, pain control, neurological changes and urological changes at  $p < 0.05$ . While, there was a highly statistically significant difference between them post implementation of self-care guidelines for the study group at ( $p < 0.001$ ).

Moreover, there was a highly statistically significant difference between the study and control groups regarding the satisfactory level of the total physical self-care knowledge post the implementation of self-care guidelines for the study group at ( $p$ -value  $< 0.001$ ).

**Figure (1):** Shows that, 16% of the control group and 28% of the study group subjects got total satisfactory level of knowledge pre the implementation of self-care guidelines. While, 84% of the study group got total satisfactory level of knowledge post the implementation of self-care guidelines with highly statistical significant between them at P value  $< 0.01$ .

**Table (3):** Demonstrates that, there were highly statistically significant difference between study and control groups regarding satisfactory level of

self-care practices post implementation of self-care guidelines at (p <0.01).

Regarding QOL including physical and psychological dimension, table 4 shows that there was no statistically significant difference between the study and control groups regarding physiological and psychological QOL dimensions pre implementation of self-care guidelines. While there was a highly statistically significant difference between them post implementation of self-care guidelines at the p-value was <0.001.

**Table (5):** Shows that, there were no statistical significant difference

**Table (1):** Comparison between the study and control groups regarding their socio-demographic characteristics.(n=100) .

between the study and control group regarding social and spiritual QOL dimensions pre implementation of self-care guidelines , While , there were highly statistically significant difference between them post implementation of self-care guidelines at p < 0.001 .

**Table (6):** Shows highly statistically significant positive correlation between total self-care( knowledge& practices ) and quality of life among the patients in the study and control groups post the implementation of self-care guidelines when p-value was <0.05.

Items	Control (n=50)		Study (n=50)		Total		Chi-square	
	N	%	N	%	N	%	X <sup>2</sup>	P-value
<b>Age</b>								
18 < - 25	6	12.0	11	22.0	17	17.0		
25 < - 35	16	32.0	13	26.0	29	29.0	4.52	0.21
35 < - 45	11	22.0	16	32.0	27	27.0		
45 < - 60	17	34.0	10	20.0	27	27.0		
Mean±SD	35.67±4.21		34.28±5.07				1.49	0.14
<b>Gender</b>								
Male	40	80.0	45	90.0	85	85.0	1.96	0.16
Female	10	20.0	5	10.0	15	15.0		
<b>Job</b>								
1- Manual	24	48.0	35	70.0	59	59.0	5.18	0.07
2- Office work	19	38.0	10	20.0	29	29.0		
3- No work – house wife	7	14.0	5	10.0	12	2.0		
<b>Marital status</b>								
Married	39	78.0	38	76.0	77	77.0	0.06	0.81
Single / Unmarried	11	22.0	12	24.0	23	23.0		
<b>Level of education</b>								
- Read and write	40	80.0	20	40.0	60	60.0	1.33	0.24
- Basic education	5	10.0	15	30.0	20	20.0		
- High education	5	10.0	15	30.0	20	20.0		

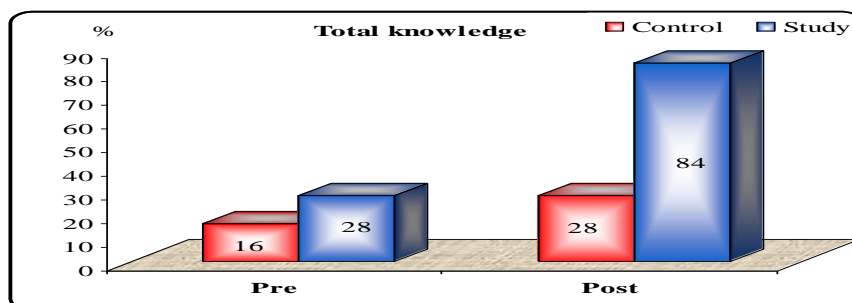
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**Table (2):** Comparison between study and control groups about satisfactory level of knowledge regarding physical aspects of self-care guidelines pre and post the implementation phase (n= 50 patients for each group).

Items		Controlsatisfactory		StudySatisfactory		Chi-square	
		N	%	N	%	X <sup>2</sup>	P-value
GIT problems	Pre	11	22	13	26	0.21	0.64
	Post	15	30	35	70	16.00	0.01**
Prevention of infection	Pre	9	18	14	28	1.41	0.23
	Post	11	22	37	74	27.08	0.01**
Anemia	Pre	7	14	16	32	4.57	0.03*
	Post	13	26	33	66	16.10	0.01**
Avoid bleeding	Pre	7	14	12	24	1.62	0.20
	Post	16	32	27	54	4.9	0.01**
Skin problems	Pre	8	16	15	30	2.76	0.09
	Post	16	32	34	68	12.96	0.001**
Problems of fatigue and stress	Pre	10	20	12	24	0.23	0.629
	Post	12	24	39	78	29.17	0.001**
Weight loss and appetite	Pre	13	26	16	32	0.43	0.509
	Post	17	34	30	60	6.78	0.01**
Hair loss	Pre	12	24	6	12	2.43	0.12
	Post	18	36	36	72	13.04	0.01**
Control of pain	Pre	9	18	19	38	4.96	0.03*
	Post	15	30	38	76	21.23	0.01**
Food changes	Pre	10	20	10	20	0.00	1.00
	Post	19	38	37	74	13.14	0.01**
Self-care for neurological changes	Pre	5	10	18	36	9.54	0.02*
	Post	12	24	42	84	36.23	0.01**
Self-care for urinary system changes	Pre	6	12	15	30	4.88	0.03*
	Post	15	30	36	72	17.64	0.01**
Self-care for the reproductive system	Pre	10	20	18	36	3.17	0.07
	Post	18	36	34	68	10.25	<0.01**
Follow-up self-care	Pre	10	20	14	28	0.87	0.34
	Post	12	24	38	76	27.04	0.01**
<b>Total</b>	Pre	9	18	15	30	1.97	0.16
	Post	10	20	38	76	31.41	0.01**

Non significant P >0.05    \*p < 0.05 significant    \*\*P<0.001 highly significant

**Fig (1):** Comparison between study and control groups regarding total satisfactory level of knowledge pre and post the implementation of guidelines (n= 50 patients for each group).



Non significant  $p > 0.05$  Highly significant  $p < 0.01$

**Table (3):** percentage distribution of study and control groups regarding satisfactory level of self-care practices pre and post the implementation of self-care guidelines ( n= 50 patients for each group).

Items		Controlsatisfactory		StudySatisfactory		Chi-square	
		N	%	N	%	X <sup>2</sup>	P-value
Hand washing	Pre	7	14	8	16	0.08	0.79
	Post	20	40	43	86	22.64	<0.01**
Oral Care	Pre	9	18	10	20	0.05	0.79
	Post	17	34	41	82	23.65	<0.01**
Temperature measurement	Pre	8	16	15	30	2.77	0.09
	Post	16	32	38	76	19.45	<0.01**
Pulse measurement	Pre	6	12	16	32	5.88	0.02
	Post	10	20	44	88	46.54	<0.01**
Respiratory rate measurement	Pre	11	22	9	18	0.25	0.62
	Post	12	24	43	86	38.83	<0.01**
Deep breathing exercise	Pre	9	18	11	22	0.25	0.62
	Post	15	30	36	72	17.65	<0.01**
Relaxation technique	Pre	12	24	9	18	0.54	0.46
	Post	16	32	42	84	27.75	<0.01**
Range of motion exercise	Pre	14	28	12	24	0.21	0.68
	Post	18	36	39	78	17.99	<0.01**
<b>Total</b>	Pre	10	20	12	24	0.23	0.69
	Post	16	32	41	82	25.50	<0.01**

Non significant  $P > 0.05$     \* $p < 0.05$  significant    \*\* $P < 0.001$  highly significant

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**Table (4):** percentage distribution study and control group regarding quality of life (physical & psychological dimension) pre and post the implementation of self-care guidelines.

Items	Control		Study		Chi-square	
	N	%	N	%	X <sup>2</sup>	P-value
<b>Physical QOL</b>						
<b>Pre</b>						
Mild	14	28	11	22	2.17	0.34
Moderate	8	16	14	28		
Severe	28	56	25	50		
<b>Post</b>						
Mild	16	32	35	70	22.51	<0.01*
Moderate	11	22	12	24		
Severe	23	46	3	6		
<b>Psychological QOL</b>						
<b>Pre</b>						
Mild	10	20	8	16	0.42	0.81
Moderate	14	28	13	26		
Severe	26	52	29	58		
<b>Post</b>						
Mild	18	36	37	74	17.65	<0.01*
Moderate	12	24	9	18		
Severe	20	40	4	8		
<b>Total</b>						
<b>Pre</b>						
Mild	12	24	10	20	0.56	0.75
Moderate	11	22	14	28		
Severe	27	54	26	52		
<b>Post</b>						
Mild	17	34	36	72	20.35	<0.01*
Moderate	12	24	11	22		
Severe	21	42	3	6		

Non-significant P >0.05 \*p < 0.05 significant

**Mahmoud Abd Elkhaliq Ibrahim, Wafaa El-Sayed Ouda, Safaa Salah Ismail**

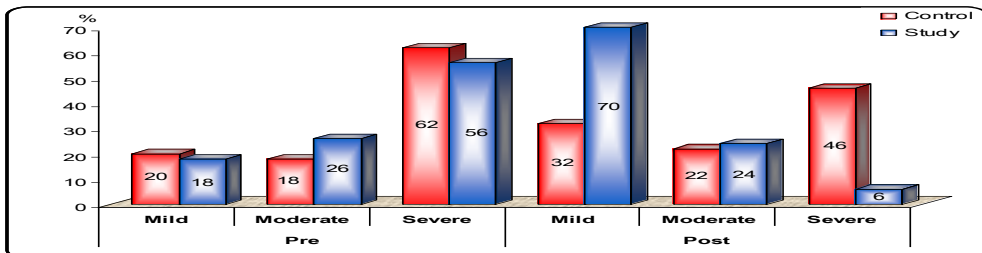
**Table (5):** percentage distribution of study and control group regarding quality of life (social dimension& spiritual) pre and post the implementation of self-care guidelines.

		Control		Study		Chi-square	
		N	%	N	%	X <sup>2</sup>	P-value
<b>Social QOL</b>							
<b>Pre</b>							
	Mild	6	12	8	16	0.74	0.69
	Moderate	8	16	10	20		
	Severe	36	72	32	64		
<b>Post</b>							
	Mild	10	20	34	68	27.67	<0.01*
	Moderate	14	28	11	22		
	Severe	26	52	5	10		
<b>The spiritual QOL</b>							
<b>Pre</b>							
	Mild	11	22	7	14	4.69	0.09
	Moderate	5	10	13	26		
	Severe	34	68	30	60		
<b>Post</b>							
	Mild	19	38	32	64	27.45	<0.01*
	Moderate	6	12	16	32		
	Severe	25	50	2	4		
<b>Total</b>							
<b>Pre</b>							
	Mild	9	18	8	16	2.44	0.30
	Moderate	6	12	12	24		
	Severe	35	70	30	60		
<b>Post</b>							
	Mild	15	30	33	66	22.34	<0.01*
	Moderate	10	20	13	26		
	Severe	25	50	4	8		

Non-significant P >0.05

\*p < 0.05 significant

**Fig (2):** percentage distribution of study and control group regarding total quality of life (physical & psychological & social and spiritual) pre and post the implementation of self-care guidelines.



**Table (6):** Correlation between self-care and quality of life in the study and control groups pre and post the implementation of self-care guidelines.

**Effect of Self-Care Guidelines on Quality of Life for Leukemic Patients Undergoing Chemotherapy**

QOL	Total self-care			
	Pre	Total self-care		Post
	R	P-value	R	P-value
Study	0.31	0.02*	0.48	<0.01**
Control	0.26	0.04*	0.35	0.03*

Non-significant P >0.05    \*p < 0.05 significant    \*\*P<0.001 highly significant

**Discussion**

Leukemic patients receiving chemotherapy need information about the drugs they take and the self-care they must practice in order to help prevent serious complications, for the self-care behaviors to be effective, leukemic patients are required to know the range of side effects they are likely to experience; they also need precise instruction on how to manage the side effects, So those patients needs self-care guidelines to improve quality of life (**Redaelli, Stephens & Brandt , 2014**).

Regarding the socio-demographic characteristics leukemic patients under the study , the findings of this study revealed that the mean age of the study group was (34.28±5.07) while the mean age of the control group was (35.67±4.21) with no statistically significant differences between them, these results are in agreement with **Santoyo et al ., (2016)** .who studied “**The age and sex frequencies of patients with leukemia seen in two reference centers that conducted in the metropolitan area of Mexico City**” and mentioned that , the mean age in the patient with leukemia in these study was 38 years.

Also the current study showed that the majority of the patients of study and control group patients were males with no statistically differences between them ; these results are similar to the result of **Ewess ( 2016)** , in a study titled “**effect of self-care guidelines on quality of life for patients with leukemia undergoing**

**stem cell transplantation” that conducted in Egypt** and reported that the majority of the study and control group patients were males with no statistically differences between them . this might be due to most of patients who knew their diagnosis and agreed to participate in the study were males .

Regarding marital status, the current study found that more than three quarters of the study and control group were married with no statistically differences between them. This is found by **Ahmadi , Shariati, Fayazi and Latifi, ( 2016)** , who studied “**The association between lifestyle and incidence of leukemia in adults**” and mentioned that , more than two thirds of the study subjects were married : these may be due to the studied patients age group married during this age according to culture so , it require cooperation from partner for dealing with the entire condition .

As regards occupation, the present study findings revealed that about three quarters of the patients in the study group and about half of the patients in this control group their work were manual work with no statistically difference between them. This finding is supported by **Blair et al., ( 2010)** in a study titled “**Occupation and Leukemia: A Population-Based Case- Control Study**” that conducted at Iowa and Minnesota that greatest portion of patients with leukemia their work required muscle effort .

Regarding educational level, the current study showed that, near two thirds of the patients of the study and the majority of the control group patients can read and write with no statistically significant differences between them, this results is similar to **Sayed, and Eissawy (2012)** who studied **“the effect of teaching program for patients with leukemia on their Self-care”** that conducted **El - Minia University** and mentioned that more than half of the patient in the study were have average education .

In relation to satisfactory level of self-care knowledge regarding physical self-care , the current study showed that There was highly statistically significant difference between study and control groups regarding satisfactory level of physical self-care knowledge post implementation of self-care guidelines, this result is going on the same line with **Zimmermann et al., (2013)**, who studied **“symptom burden and supportive care in patients with acute leukemia”** , the results of their study showed that the majority of the studied patients had improve satisfactory level of knowledge regarding their physical self-care, this result may be due to effective implementation of self-care guidelines.

In relation to satisfactory level of knowledge regarding total self-care aspects , the current study showed that more than one quarter of the patients in the study group and less than one fifth of the patients in control group had satisfactory level of knowledge regarding total aspects of self-care pre the implementation of self-care guidelines , While the majority of the patients in the study group and less than one third of the control group had satisfactory level of total self-care knowledge post the implementation of self-care guidelines with high satisfactory significant

differences between them. This results goes on the same line with **Karimi et al., (2017)**, who study **“Surveying the effect of a self-care education program on severity of nausea and emesis in colorectal cancer patients under chemotherapy”** and showed the effectiveness of self-care measures on decreasing side effect of chemotherapy and there is significant differences between the intervention group and control regarding satisfactory level of knowledge regarding their self –care.

Regarding self-care practice , the present study result document that, there was a highly statistical significant differences between the study and control group patients post implementation of self-care guidelines as the minority of the patients in the study and control group had satisfactory level of self-care practices pre the implementation of guidelines . While the majority of the study group had satisfactory level of self-care performances regarding hand washing, oral care, temperature, pulse, respiratory rate measurements, relaxation technique, deep breathing and range of motion exercises with high statistical differences between two groups. This differences may be due to the skills that acquired from the implementation of self-care guidelines. This result goes on the same line with **Ewess (2016)** in a study titled **“effect of self-care guidelines on quality of life for patients with leukemia undergoing stem-cell transplantation ”** and mentioned that the majority of the study group patients had satisfactory level of total self-care practice after the implementation of self-care guidelines with statistical significant differences between them .

The present study revealed that the half of the patients in the study and more than half of the control group patients have poor quality of life regarding



physical dimension pre implementation of self-care guidelines. While, about three quarters of the patients in the study group have good quality of life regarding to physical dimension post implementation of self-care guidelines with highly significant differences between them. This result goes on the same line with **Shahsavari, Matory, Zare, Taleghani and Kaji (2015)**, who studied “**effect of self-care education on the quality of life in patients with breast cancer**” and mentioned that The intervention group had significantly greater improvements in quality of life status and self-care education caused a significant increase in the quality of life score related to physical dimension.

In relation to psychological dimensions of QOL, the result of current study shows that more than half of the patients in the study and control group have poor QOL regarding to psychological aspects pre implementation of self-care guidelines, While about three quarters of the patients in the study group have good QOL post implementation of self-care guidelines with highly significant differences between them. This result goes on the same line with **Novrianda and Khairina, (2015)**, who studied “**the effect of educational intervention on the quality of life of acute lymphocytic leukemia who undergoing chemotherapy**” and mentioned that great changes in psychological aspect of quality of life and education is influencing on the behavior of patients and resulted in changes in knowledge, attitudes, and skills that aims to acquire and improve health.

Regarding social dimension of quality of life, the result of current study showed that more than two thirds of the patients in the study group and about three quarters of the patients in the

control group have poor QOL pre implementation of self-care guidelines. While, about two thirds of the patients of the study group have good QOL post implementation of self-care guidelines with highly significant differences between them. This results is supported by **Rukshani, Kahandawala, Jayawardana and Gamage(2018)**, who studied “**Factors associated with quality of life among cancer patients in Sri Lanka**” and mentioned that there was significant improvement of the social quality of life of the intervention group after the implementation of the education and family support, while the group who didn't receive education and was feeling alone, had poor quality of life.

Concerning to the spiritual dimension of QOL, the result of this study showed that about two thirds of the patients in the study and control group patients have poor QOL regarding spiritual dimensions pre implementation of self-care guidelines. While, two thirds of the patients in the study group have good QOL regarding spiritual dimensions post implementation of self-care guidelines with highly statistically significant differences between them. This results goes in the same line with **Golchin et al., (2008)**, who studied “**effects of self-care program on quality of life in Patients with acute leukemia receiving chemotherapy**” and mentioned that there was significant improvement of the study group regarding QOL dimension in contrast the control group who have decrease in overall quality of life.

Regarding overall QOL dimensions, the current study showed that more than half of the patients in the study and about two thirds of the control group patients had poor QOL pre implementation of self-care guidelines. While, about three

quarters of the patients in the study group have good QOL post implementation of self-care guidelines with highly statistically significant differences between them. This result goes in the same with **Esilbalkan, Karadakovan and Göker, ( 2009)** who studied “ **the effectiveness of nursing education as an intervention to decrease fatigue on turkish patients receiving Chemotherapy**” and mentioned that the educational intervention has improvement on the quality of life of the studied patients .

Regarding self-care and quality of life the current study showed that, there is highly statistical significant positive correlation between two group regarding total self-care( knowledge& practices) and quality of life post implementation of self-care guidelines. This result goes in the same with **Ran et al, (2016)**, who studied “**the quality of life, self-care knowledge access, and self-care needs in patients with colon stomas one month post-surgery in a Chinese Tumor Hospital**” and mentioned that there was a positive correlation between the self-care knowledge, population needs and their quality of life in his study.

### **Conclusion**

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**This study concluded that :**

Implementation of self-care guidelines has statistically significant positive effect on quality of life dimensions for patients with leukemia undergoing chemotherapy which supports the study hypothesis.

### **Recommendation**

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**Based on the results of the current research, the following suggestions for future research and practice are proposed:**

### **Recommendations related to education**

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- Implementing systematically continuous self-care guidelines in hospitals for patients with leukemia .
- Generalization of self-care guidelines for patients with leukemia in other media such as: newspapers, television, and the radio to help improve the health status of these patients and manage the chemotherapy side effects.
- A simplified, comprehensive and illustrated Arabic language guided booklet with images about the self-care guidelines should be submitted to each newly admitted patient with leukemia.

### **Recommendations related to the research:**

- Replication of the current study on a large sample is recommended to achieve generalization of the results and wider utilization of self-care guidelines.
- Further researches are recommended related to the patients' quality of life after long period to evaluate their improvement and prognosis after chemotherapy.

### **Recommendations related to nursing service:**

- Establish periodical in-service educational training program to improve nurse's performance regarding self-care guidelines and then improving the quality of life dimensions for patients with leukemia undergoing chemotherapy.

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