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Effects of Maternal Capacity Building Intervention on their Competence, Perceived Wellbeing and their Leukemic Children Health

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Abstract: Mothers' of leukemic children facing many stressors which represents challenging to them to maintain balance between care for their leukemic children and maintain their wellbeing so this study investigate the effects of maternal capacity building intervention on their competence, perceived wellbeing and their leukemic children health. A Quasi experimental research design was used to conduct the current study, a purposive sample of 54 mothers with their leukemic children admitted during September - December 2018 at Oncology center, pediatric department, Mansoura University, Egypt whom fulfills the criteria of selection. Data were collected pre and post the capacity building intervention. The results indicated that post capacity building intervention mothers' knowledge regarding leukemia and care practice of leukemic children was improved significantly. Post capacity building intervention also the majority of mothers were comply with; children care (88.9%), recommended diet compliance (72.2%), and all of them comply with follow up schedule also about two thirds of them post the intervention had good sleep quality (77.8%), good appetite (72.2%) and moderate anxiety level (63%). Regarding studied subjects sense of competence it was improved significantly post the intervention where more than two third of them perceived that they has high level of competence compared with none of them pre the intervention. Conclusion: Capacity building intervention improved subjects' knowledge, subjects' care practice which raises their perceived self-competence, wellbeing level and improve their leukemic children health. Recommendation: Mothers' need special preparation to; satisfy leukemic children need, maintain children health, raise mothers' wellbeing to be able to go through their life and satisfy other family member's needs.

Keywords; Capacity building intervention, perceived sense of competence, perceived wellbeing and leukemic children health

INTRODUCTION

Cancer is a leading cause of death among children worldwide it is a life threatening condition and significant public health problems for pediatric patients. Globally millions of people die yearly due to cancer. 1,735,350 new diagnosed cases and 609,640 cancer deaths are projected to occur in United States (Siegel, Miller & Jemal, 2018). In 2030, 17 million of persons may be killed annually due to cancer. The most common pediatric cancer was leukemia which representing between 0.5% and 3% of all tumors in most population (World Health Organization, 2014).

Leukemia is a comprehensive term specified to a group of malignant bone marrow and lymphatic system diseases. It starts in the blood forming tissue of the bone marrow (Hockenberry, & Wilson, 2015). Types of leukemia include; acute lymphoblastic leukemia and acute myeloid leukemia (National Cancer Institute, 2015). It is estimated that 80%-85% of pediatric cancer cases occur in the developing world, where the 5-year survival can be less than 10% (White, Castle, & Haig, 2013). The exact reason of leukemia is not identified but possible environmental factors are the causative agents; as ionizing and non-ionizing radiation and environmental chemicals (Bauer, Jurgens, & Fruhwald, 2011).

The symptoms of childhood cancer may include fever, exhausted, swollen glands, weight loss or bruising or tender joints and bones. Cancer diagnosis depends on child's symptoms, age and medical history (Kliegman, Stanton, Geme, & Schor, 2016). Cancer can be identified as in terms of its phase, grade and potential group. For many childhood cancers, including leukemia, patients are assigned to a risk group (low, intermediate, or high) based on the child's age, disease clinical picture, and the results of laboratory investigations. Childhood cancer prognosis is not expected but depends on how innovative the leukemia is, child's age, and how child responds to treatment (National Cancer Institute, 2015). Treatment has a rapid response on some children and they go smoothly within the course, but the remaining children exposed to a hard situation and practice a lot of difficulties. During the active phase of cancer the physical and mental health of parents are also affected (Le, 2011).

Childhood cancer creates a prompt crisis to the entire family member's lives. The diagnosis of leukemic children is entirely changing is life's routine and also their family routine. The emotional condition of the family is affected by long stressful therapeutic protocol, coping with the disease process and the daily caring for a child who was once healthy which play an important role in the of parent's lives (Filho, Seabra, Oliveira, 2014). Patients and families are a high risk for coping difficulties due to cancer treatments protocol. Caregivers of cancer children are also at

risk for a different poor adjustment outcomes. All family members are exposed to stressful situation due to childhood cancer so their personal equilibrium and wellbeing are at risk of disturbance. Having a leukemic child aggravate persistent uncertainty about the future and reduce the parents' feeling of competence in caring to the ill child (Steele, Mullins, Mullins, & Muriel, 2015). Mothering, chiefly involves monitoring and being a reactive partner by giving her long-term time and importance in the form of permanent love, enthusiastic to welfare, self-sacrifice, and empathy to the whole family members. Mother is a primary care giver her accountability increases significantly starting a vicious cycle of anxiety and socio-economic uncertainty which leading her to depression and anxiety (Ghufran, Andrades & Nanji, 2014).

Maternal sense of competence is influenced by; marital relationship, socioeconomic factors, received social support and child's characteristics (Asgarabad, Vashani, Badiei, Nabavi, & Malekzadeh, 2014). People with a great sense of competence trust their own abilities to manage the various situational strains which empower them to face stressful situations with confidence, sense motivated by physiological arousal, and judge positive events as caused by effort and negative situations as due mainly to external circumstances. Sense of competence is a significant element in the capability to protect one's self from different impacts of stress, remaining healthy and preventing illness (Sherief, et al., 2015 & Fyta, 2007).

Capacity building is an evidence-driven process of strengthening the abilities of mothers to implement core functions sustainably, and to progress to improve and advance over time (Capacity Development Practice Note, 2008 & Morkel, & Ramasobama, 2017). It is a process which improves people ability to accomplish public and financial objectives. The capacity of family for giving care for leukemic children play an essential role for enhancing children health condition and decreasing their length of hospital stay (Brand, Wolfe, & Samsel, 2017). It is a process which improves people ability to accomplish public and financial objectives. The capacity of family for giving care for leukemic children play an essential role for enhancing children health condition and decreasing their length of hospital stay (Chivukula, Kota, & Nandinee, 2018).

Nurses constitute a significant component of any health care team who provide support for both parents & their children and help them to attain knowledge and skills regarding the disease, its treatment and their psychological reactions which finally improve care quality. Health care professional help family to develop problem solving, organizational and communication skills (Filho, et al., 2014). Building a higher capacity of autonomy for families to comply with care is a major objective of educational assistance process which reduce stressful return to home and the persistent assistance of children according to their needs. Physical, psychological and social needs should be considered during carrying out care for cancer children. Parents and their children should be included in the course of treatment with respect to their social, economic and cultural problems which promote coping with cancer (Cekani, 2018).

Significance of the study:

Childhood leukemia is the greatest common malignancy that presented for approximately as the type number three of cancer diagnoses. Death rates from leukemia among Egyptian children accounted for 5.1 per 100,000 and Egypt was ranked the 28th Arab country having leukemia among children (WHO 2006). Mothers are the main caregivers who provide a vital role in caring for their leukemic children and all family members which considered stressful for all mothers (Cekani, 2018).

The capacity of mothers to take care of leukemic child produces an important impact on prognosis, the cost & frequency of admission and consuming hospitals facilities. Leukemic children complain from various health problems and complications as a consequence of the disease process (Gaugler, et al., 2008). Mothers who attain knowledge and skills will improve their capacity in handling children illness. So this study aimed to investigate effects of maternal capacity building intervention on their competence, perceived wellbeing and their leukemic children health.

Operational Definition:

- Maternal sense of competence means the extent to which mothers feel competent and gratified in handling child's physiological and psycho-social needs and achieves maternal function in the family".
- "Capacity is the ability of mothers to perform functions effectively, efficiently and sustainably"
- Capacity building is a process or activity that advances the capability of a person or carry out stated goals

Aims of the study: To investigate the effects of maternal capacity building intervention on maternal sense of competence, maternal perceived wellbeing and leukemic children health.

Research hypothesis:

- 1) Intervention will improve maternal knowledge about leukemia and care provided to their leukemic children.
- 2) The intervention will improve maternal competence level, perceived wellbeing and their leukemic children health.

SUBJECTS AND METHOD

Research Design: A quasi- experimental pre and post intervention was carried out.

Setting: The study was conducted and followed up at Oncology Center, pediatric department, Mansoura University, Egypt.

Sample: A purposive sample of 54 mothers with their leukemic children admitted during September - December 2018 at the previously mentioned setting under the following criteria:

Inclusion criteria: Child diagnosed with leukemia and treated with chemotherapy, both sexes (males and females) were included and no others neurological problems (through checking the child chart).

Exclusion criteria: Unwilling to participate, mothers who have psychiatric disorders and critically ill children (unconscious or comatose).

Tools of Data Collection: Three tools were used to collect data:

Tool I: A structured questionnaire sheet was developed by researchers after reviewing the related literature in Arabic language to accomplish the purpose of this study; it composed of five parts:

- a. **Part one:** Concerned with assessment of social characteristics of mothers, leukemic children and family history of leukemia.
- b. **Part two:** Concerned with assessing maternal knowledge regarding leukemia definition, manifestation, treatment, chemotherapy side effects, child recommended care and recommended diet (pre and post capacity building intervention was done).

Scoring system: If mothers answered 50% or more of correct knowledge was considered a correct answer but if they answered less than 50% of the correct answer it mean incorrect answer for each item.

- c. **Part three:** Assess maternal practice of leukemic children care regarding (face care, lips care, gum care, teeth care, skin care, hair care and post chemotherapy care (pre and post was done).

Scoring system: If mother do 60% or more of required care practice it mean do satisfactory care practice but if she do less than 60% of required care it mean do unsatisfactory care practice regarding all care practice items.

- d. **Part four:** Assess effect of capacity building intervention on maternal compliance with; care practice, recommended diet and follow up (pre & post intervention was done).

Scoring system: If mother comply 80% or more with each items of compliance it mean comply but if she comply less than 80% of required care it mean not comply.

- e. **Part five:** General impacts of the intervention on the leukemic children general health as sleep quality, appetite and anxiety level it was assessed pre and post the intervention.

Scoring system: According to each items separately; sleep quality (if the child take recommended 6-8 hours daily sleep it consider good sleep, but if his sleep was interrupted or less than 6 hours it consider interrupted sleep, appetite (if the child take balanced diet, required amount of daily protein and vitamins it regarded as good appetite but if he refuse to take required amount of food it consider poor appetite) and anxiety (mild anxiety if he can practice more than 80% from all his life activity, moderate if he practice 50-80 % of all life activity and low severe anxiety if he practice less than 50% of all life activity).

Tool II: Perceived Well Being Scale:

Adopted from **Reker, & Wong, in 1984** and translated to Arabic language by researchers to assess subjects' perceived 'well-being. It consists of fourteen items, six of them measuring psychological well-being and eight measuring physical well-being. Psychological well-being includes positive emotions as; happiness, joy, peace of mind and the absence of fear, anxiety and depression, while physical well-being measures; health, vitality and also absence of physical discomfort.

Scoring system: Respondents rated for each item on a seven-point Likert scale ranging from "strongly agree" to "strongly disagree". A score of seven of each items reflect higher level of wellbeing and score one indicated lower level of

wellbeing. Total scores range from 14- 98 general wellbeing, low mother perceived wellbeing if the summed score less than 32, mild perceived wellbeing level considered if the total score ranged from 33-65 and high perceived wellbeing if the total score ranged from 66-98 (Pre and post-test were done).

Tool III: Parenting Sense of Competency Scale (PSOC): It was developed by **Gibaud-Wallston and Wandersman in 1978** for infants and adopted to uses for older children and its reliability testing adapted by **Johnston & Mash (1989)**. The skill has 17 items which measures maternal sense of competency.

Scoring system: Each item is rated on a 6 point Likert scale anchored by 1 = "Strongly Disagree" and 6 = "Strongly Agree". Nine items (2, 3, 4, 5, 8, 9, 12, 14, and 16) on the PSOC are reverse coded. A higher score indicates a higher maternal perceived sense of competency. Summed score less than 45 mean mothers has perceived low competency level, mothers perceived mild competency if the total score ranged from 45-73 and maternal perceived high competence level if the summed score ranged from 74-102.

Methods:

Ethical considerations: An ethical approval was obtained from the Research Ethics Committee at Faculty of Nursing, Mansoura University also an official permission obtained from the head of the director of Oncology center and the head of pediatric department after an explaining of the aim, tools, duration and the benefits of the study. As well as oral consent was obtained from the mothers after explaining the aim, benefits, time/duration of the study and their rights to accept or refuse participation without interference with the care provided.

Validity and Reliability of Tools:

The tools were translated into Arabic and tested for its content validity by 5 experts in in pediatric nursing field who reviewed the tools for clearness, relevance, applicability, comprehensiveness, understanding and easiness for implementation; based on their views slight modifications were applied. The reliability was estimated by using cronbach's alpha reliability test showed a positive significance with $r = 0.83$ for structured questionnaire sheet, $r = 0.78$ for perceived wellbeing scale and $r = 0.78$ for parenting sense of competency scale (PSOC).

Pilot study: A pilot study was carried out on 5 mothers to test the clarity, feasibility and applicability of the study tools. Necessary modifications were done by exclusion of some items consequently; the pilot study sample was excluded from the main study.

1. Data collection phases: Data was collected through 4 phases:

Assessment phase: An initial assessment was conducted by the researchers. All mothers were interviewed individually during their children admission; the researcher first introduced herself, purpose and nature of the study were explained to them. Maternal knowledge, care practice, their perceived self-competence, wellbeing level and their leukemic children health were assessed through one hour by researcher through filling the questionnaire sheet and scales

(pre intervention format). Data were collected from September to December 2018.

2. **Developmental phase:** Based on the need assessment data , objectives and related references theoretical and practical contents of the capacity building intervention were developed by the researchers it include two parts:

- a. **Theoretical part:**It includes information about; definition, causes, classification, clinical picture, complications, treatment, side effects of chemotherapy & radiotherapy also leukemic child recommended diet, skin care, mouth care and hair care. It cover meaning of wellbeing, how satisfies children needs, effective maternal coping methods & how to maintain balance between needs of leukemic children and maternal life satisfaction and wellbeing also. Theoretical part covers meaning of competence and how mother achieve high level of competence during caring of her leukemic child at the same time.
- b. **Practical part:**Child manifestation care was practiced by researchers to the child in front of mothers and illustrated with video tape which demonstrate manifestation of leukemia, care of each manifestation, care to side effects of chemotherapy as mucositis, nausea, vomiting, alopecia, infection, bleeding, anemia, weakness, and health promotion practice toward the child. Also the researchers demonstrate video tips about diet for the disease. Suitable coping strategies with leukemia as a diagnosis, competence, factors affecting in competence and how to achieve high level of competence and wellbeing. The practical part was lengthy and broad. Also role play was used to solve health awareness limitation and daily problems of the

disease and also answering mothers and children questions.

3. **Implementation phase:**Mothers were interviewed during their children hospitalization period from September to December 2018. The Intervention was applied in simple Arabic language that has been sequenced through the 6 sessions (6 hours); 2 sessions for theory and 4 sessions for practice. Mothers were divided into subgroups, the number for each group varied and the basic content was the same for groups. The researchers were available 3 days per week in the morning shift (9.00 Am.–1.00 pm.) at Oncology center, pediatric department, Mansoura University which was a suitable time for mothers and their children. Instructional media included handout prepared by the researchers and distributed to all subjects in the first day. Different teaching methods were used as; modified lecture, group discussion, brainstorming, and role play. In addition audiovisual materials and handouts were used as appropriate teaching
4. **Evaluation phase:**The effectiveness of the capacity building intervention on mothers' and children were assessed by comparing the results of pre and post-test. It was done post ending the intervention and before hospital discharge for each subject.

Statistical analysis:

The Statistical Package for the Social Sciences (SPSS) version 22 was used to analyze the data. Descriptive statistics including frequencies & percentages were calculated for each item. T-test was used to compare between subjects; knowledge, practice, competence and wellbeing level pre and post intervention. The level of significant was adopted at $p < 0.05$.

RESULTS:

Table 1 Socio-demographic characteristics of mothers and their leukemic children:

Items	No	%
1. Mothers' age in years:		
a) 20-29	24	44.4
b) 30-40	27	50.0
c) 41-	3	5.6
2. Mothers' education:		
a) Uneducated	24	44.4
b) Primary.	19	35.2
c) University	11	20.4
3. Mother job:		
a) Worked.	21	39
b) Not worked.	33	61
4. Leukemic children age in years :		
a) 3-8	32	59.3
b) 8- 15	22	40.7
5. Leukemic children Sex:		
a) Male	22	40.7
b) Female	32	59.3
6. Leukemic children Education:		
a) Primary	41	75.9
b) Preparatory	9	16.7
c) Secondary	4	7.4
7. Positive family history of leukemia:		
a) Yes	24	44.4
b) No	30	55.6

Table 1 demonstrates that half of mothers were aged from 30-40 years and 44.4% of them were uneducated. Regarding leukemic children age 59.3% of them their age ranged

from 3-8 years, female children and nearly three fourth of them in primary education 75.9%.

Table 2: Studied subjects' knowledge pre and post capacity building intervention.

Items of knowledge:	Pre intervention		Post intervention		T test	P value
	Correct	Incorrect	Correct	Incorrect		
	No (%)	No (%)	No (%)	No (%)		
1) Definition	28(51.9)	26(48.1)	53(98.1)	1(1.9)	6.31	.000*
Manifestation	24(44.4)	30(55.6)	53(98.1)	1(1.9)	7.84	.000*
Treatment	14(25.9)	40(74.1)	34(63.0)	20(37.0)	5.58	.000*
Side effects of therapy	21(38.9)	33(61.1)	53(98.1)	1(1.9)	4.59	.000*
Recommended Child care	20(37.0)	34(63.0)	47(87.0)	7(13.0)	7.28	.000*
Recommended child diet	6(11)	48(89)	45(83.3)	9(16.7)	11.74	.000*

Studied subjects' knowledge improved significantly post the intervention as clear from table 2, the majority of them has correct score of knowledge regarding leukemia definition (98.1%), manifestation (98.1%), treatment (63%), recommended child care (87%) and recommended child diet

(83.3%) compared with 51.9%, 44.4%, 25.9%, 37% and 11% for the above mentioned items respectively and significant differences was found regarding all items were found.

Table 3: Maternal care practice for their leukemic children pre and post intervention.

Leukemic children care:	Pre intervention		Post intervention		Ttest	PValue
	Satisfactory.	Unsatisfactory	Satisfactory	Unsatisfactory		
	No (%)	No (%)	No (%)	No (%)		
1. Face care	28(51.9)	26(48.1)	52(96.3)	2(3.7)	6.51	.000*
2. Gum & Lip care	20(37.0)	34(63.0)	53(98.1)	1(1.9)	9.52	.000*
3. Teeth care	11(20.4)	43(79.6)	38(70.4)	16(29.6)	6.06	.000*
4. Skin care	6(11.1)	48(88.9)	47(87.0)	7(13.0)	12.92	.325
5. Hair care	18(33.3)	36(66.7)	51(94.4)	3(5.6)	9.13	.215
6. Post chemo therapy care	14(25.9)	40(74.1)	34(63.0)	20(37.0)	5.58	.000*

It was observed from Table 3 that the majority of mothers had a satisfactory score of care practice of their leukemic children post capacity building intervention regarding; face care (96.3%) gum & lip care (98.1%), teeth care (70.4%), skin

care (87.0%), hair care (94.4%) and post chemo or radio therapy care (63.0%) compared only with; 51.9%, 37.0%, 20.4%, 11.1%, 33.3% and 25.9% pre the intervention to the above motioned items respectively.

Table 4: Maternal compliance pre and post capacity building intervention.

Items of compliance	Pre intervention		Post intervention		Ttest	P value
	Comply	Not comply	Comply	Not comply		
	No (%)	No (%)	No (%)	No (%)		
1. Care practice	16(29.6)	38(70.4)	48(88.9)	6(11.1)	8.78	.000*
2. Recommended diet	16(29.6)	38(70.4)	39(72.2)	15(27.8)	6.27	.000*
3. Follow up	45(83.3)	9(16.7)	54(100)	0(0.0)	3.26	.002*

Regarding table 4: Post capacity building intervention the majority of the mothers were comply with leukemic children care practice (88.9%), recommended diet (72.2%), and all of them comply with follow up schedule compared with pre

intervention 29.6%, 29.6% and 83.3% to the above motioned items respectively with significant differences were found to all items.

Table 5: Impact of the intervention on the leukemic children general health .

Items	Pre intervention No (%)	Post intervention No (%)	Ttest	P value
1) Sleep quality according age: • Good continues. • Interrupted.	0(0) 54(100)	42(77.8) 12(22.2)	13.62	.000*
2) Appetite: • Good • Poor	0(0) 54(100)	39(72.2) 15(27.8)	11.74	.000*
3) Anxiety level: • Severe • Moderate. • Mild	37(68.5) 17(31.5) 0(0)	0(0) 34(63.0) 20(37.0)	30.02	.000*

Table 5 shows that the majority of the leukemic children post the capacity building intervention had good sleep quality (77.8), good appetite (72.2%) and moderate anxiety level (63%) compared with none of them had good sleep or

good appetite pre the intervention and 31.5% had moderate anxiety degree pre the intervention with significant differences were found to all items respectively.

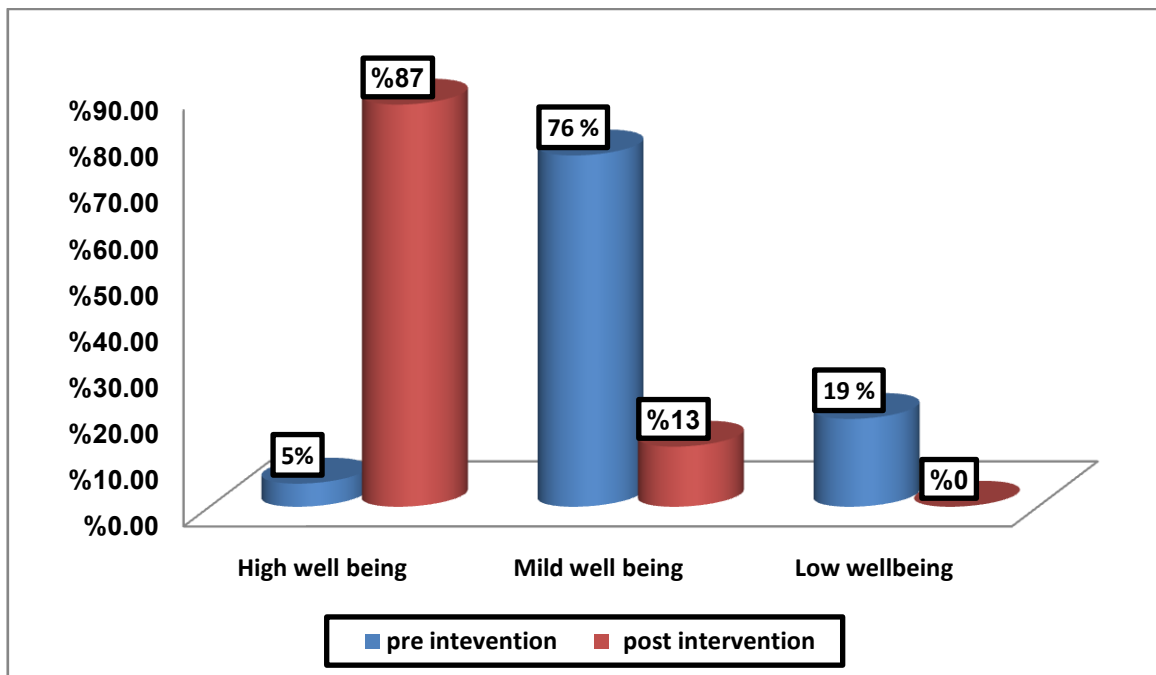


Figure 1: Maternal perceived well being pre and post capacity building intervention.

It was clear from figure 1 that capacity building intervention affect in mothers wellbeing level as demonstrated 87% of

them had high level of wellbeing post compared with only 5% pre the intervention had a high wellbeing level.

Table 6: Mothers’ perceived sense of competence pre and post intervention.

perceived sense of competence	Preintervention No (%)	Post intervention No (%)	Ttest	P value
1. High.	0(0.0)	38(70.4)	10.76	.000*
2. Mild.	52(96.3)	15(27.7)		
3. Low.	2(3.7)	1(1.9)		

Table 6 demonstrates that maternal perceived sense of competence was improved significantly post the intervention because more than two third of them had high level of competence (70.4%) post the intervention compared with none of them pre the capacity building intervention with significant difference were found.

DISCUSSION

Diagnosis of childhood cancer is challenges for child, all family members especially mothers' whom are the first care providers. This study aimed to investigate the effects of

maternal capacity building intervention on maternal perceived sense of competence, maternal perceived wellbeing and leukemic children health. Regarding the study results; studied subjects' knowledge improved significantly post the intervention as clear from table 2 where the majority of them had a correct score of knowledge. This finding agree with *Maunder, in 2012* who found that parents who attend intervention gained more information, showed a decrease in personal feelings of distress and anxiety, perceived an increase in social support and showed a decrease in future concerns regarding their child’s diagnosis and treatment also *Saeui, et. al, in 2009* found an

improvement in caregivers' knowledge, understanding of symptoms and chemotherapy side effects in the study group. This understanding enabled experimental group to take decisions when considering care alternatives in any situation with statistically, significantly greater than those in the control group regarding James, **Varchman, Lee, & Richard, in 2011** recommended that children and families should be aware of knowledge and understanding of clinical manifestations and chemotherapy side effects to carry out an best care to their leukemic children.

Regarding table 3: The majority of mothers had satisfactory score of care practice to their leukemic children post capacity building intervention as face care, gum & lip care, teeth care, skin care, hair care and post chemotherapy care. This reflects their desire to improve care provided to their children and also reflected the efficacy of intervention in improving subjects' practice toward leukemic children. This result is congruent with **El-Sayed, & El-Nagger in 2014** who found that the intervention program had a positive effect on improving practices of caregivers regarding their children whom suffering from acute lymphocytic leukemia disease and its related handling problems improved post the intervention. Finding was supported by **Noughabi, Iranpoor, Yousefi, Abrakht, & Dehkordi, 2016** who revealed that application of care program training can be a positive step to support the leukemic children parents and empower them to manage their children's problems more systematically and will ultimately lead to improved quality of life of parents. **Novrianda, & Khairina, in 2015** found an increase in parental knowledge about their children problems and needs of leukemic children have an essential effect on family support so that parents can provide best care which leads to a higher improvement in children quality of life.

Concerning post capacity building intervention, it was noticed that the majority of the mothers were comply with leukemic children care practice as demonstrate at table four. This may be due to continuous repeating of demonstration from researchers and the mothers gain accurate information regarding leukemia and had been acquiring best methods to manage children illness and reduce the side effect from the process of treatment. From the above mentioned results maternal knowledge and care supplied to their leukemic children were improved significantly post the intervention so the first study hypothesis was accepted totally. This result comes in agreement with **Mahmoud & AbdElaziz in 2015** who found post the intervention a significant improvement in maternal practice was found. A study conducted by **Asgarabad et al., in 2014** demonstrated that the empowerment program can help the caregiver to determine and practice critical thinking skills, and improve compliance enhance their capacity, which results in reduce mouth ulcers in children undergoing chemotherapy, which was in line with the findings of the current study. **Brand, et al., in 2017** recommended that nurses should encourage caregivers to take part within health care teams and help them to be aware of their capacity for care and to increase benefits for pediatric patients with leukemia in their work.

The current study finding prompt that the majority of the leukemic children post the capacity building intervention

had good sleep quality, good appetite for recommended diet and mild anxiety level (table 5). This may because implementing capacity building intervention give a chance to the mothers to communicate about the intervention program and listen interestingly to their apprehension which is indicator of gratification as well as physical and emotional wellbeing. This results in accordance with **Hashemi, & Shokrpour 2010** who found that caregivers education leading to best understanding of leukemia, treatment & its side effects and undesirable outcome on children's quality of life, which in turn leading to advance function of parents relationship with the their leukemic child, offering suitable care, and solving their problems result in a higher quality of life of leukemic children due to improvement of parents' function. Regarding Hashemi, *et al., in 2011* findings indicate that parents education successfully increased the quality of life of leukemic children. Effective planning of educational interventions for parents, leads to lower negative emotions and higher quality of life of leukemic children.

The current study finding revealed that; the majority of mothers had a high level of wellbeing post intervention (figure 1). This might be attributed to the satisfactory impact of the intervention on physical and psychological outcome of mothers because mothers have been accept child condition and continuing management process as well as they are integrate recent knowledge and demonstrate recent skills that aiding them in giving care for their child during illness. Moreover they have a full trust in God will helping their children recovery. This result come in agreement with **El-Sayed, & El-Nagger in 2014** who found a significant decrease in the stress level post the intervention and there was a significant difference regarding psychological wellbeing before and after program intervention. This result is similar to **Williams, et al., in 2006** who found caregivers of children off treatment reported improved overall condition and wellbeing than caregivers of children in dynamic treatment. This result is disagreement with **Anclair, et al., in 2009** who assess fears between family members after their child brain tumors diagnosis and treatment, they found unpredicted future prognosis and complications of treatment of cancer children with which affecting parents' condition. **Pahlavanzade, et al., in 2014** stated that parents' load gradually reduced in the experimental study and raised in the control group which support the current study results and impacts of the intervention.

The present study showed a significant improve of maternal perceived competence level post capacity building intervention as clear in table 6, this may because the researchers plans comprehensively according to the needs of children and their mothers and correspond standard of implementation with standard of needs to satisfy all suspected from subjects so the second research hypothesis was accepted. This result is consistent with **Saeuiet. al., 2009** who found that caregivers' participation in an empowerment program would significantly increase their competence in caring for children with acute leukemia, the mean scores of caregiver's competence in the experimental group were statistically, significantly higher than those in the control group from the 4th week post intervention.

CONCLUSION

The present study concluded that the capacity building intervention was improve mothers' knowledge and their disease management practice which leads to mothers become more satisfied about their perceived competence to provide care to their leukemic children, and had high level of wellbeing which support the proposed study hypotheses.

Study limitation:

The main study limitation related to decrease sample size only 54 mothers who accept to participate in the study and their children condition permit their participation in the study during study time of conduction.

RECOMMENDATIONS

In the light of the findings of the present study, the following recommendations are suggested:

1. All health organizations should provide health education program for caregivers to support them to acquire sufficient knowledge and skills to maximize their competence in caring for their leukemic children.
2. Establishment of counseling clinic in all departments to support caregiver to achieve suitable ill child care, family care and maintain her physical and mental wellbeing and become satisfied about her competence.

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