IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 6, Issue 6 Ver. V. (Nov.- Dec .2017), PP 35-43
www.iosrjournals.org

The Effectiveness of Distraction Techniques on Minimizing Pain and Anxiety for Cancer Children Undergoing Venipuncture

Amira Adel Mohammed[1], Safaa Abdel Fattah Abou Zed Abdel Fattah[2]
[1]*Pediatric Nursing Department, Faculty of Nursing, South Valley University, Egypt*
Corresponding author: Amira_ad2000@yahoo.com
[2]*Pediatric Nursing Department, Faculty of Nursing, Ain Shams University, Egypt*

Abstract*: The current study aimed to evaluate the effectiveness of distraction techniques on minimizing pain and anxiety for cancer children undergoing venipuncture procedure.*
Setting:*was conducted at Banha Specialized Pediatric Hospital.*
Researchdesign: *A quasi-experimental design.*
Sample: *A convenience sample of 94 children aged from 6 to 12 years, divided into two identically groups: experimental group (No=47) were received pain distraction by the researchers and control group (No= 47) were received the routine nursing care.*
Tools: *Tools were used to collect the data, the pediatric behavioral pain scale to assess children's level of pain before and after venipuncture and children's level of anxiety observational sheet were used to assess anxiety level during venipuncture*
Results: *Study resultsshow that distraction technique for cancer children undergoing venipuncture had a positive effect for cancer children where less pain intensity level.*
Recommendation: *Encourage an educational training program should be conducted to pediatric nurse about different methods of distraction that can play a part in supporting clinical practice.*
Keywords*: Cancer children, Distraction, Pain scale.*

Date of Submission: 21-11-2017 Date of acceptance: 02-12-2017

I. Introduction

Pain is one primary cancer symptom, all cancer children hadbeen experienced, 70% of them and more than surfing from severe pain ***(Morton, 2014).*** So, there is the need to recognize this pain, even if subjectively understood, thus avoiding its inadequate management***(Thrane, 2013).*** The pain more common during medical diagnosis and management, pain may result from venipuncture procedures, this pain, sudden, and elevated by the stress situation and anxiety leading to badbackground. ***(Morton, 2014).***

According to Pain Association of America (PAA) at 2010, thepain is fifth vital sign. In cancer children, pain is a specific backgroundon the different aspectsas mentality,emotional and behavioral which can influenceby surrounding areas as, family-cultural ***(Spacek, 2014).***Now it is recognized as significant debilitating symptom that affects quality of life. Although advanced pain management has been made, there is still need for improvement***(Marwah, 2012).***The most common painfulprocedures between children are venipunctureprocedures and whose exposure for repeated painful procedures in the hospital. Themedicalinterview in pediatric departments is considered as from the aspects which can increasetheanxiety levelfor hospitalized child***(Alavi et al., 2012).***

Unpleasant pain and distresses situations can effect onchild- nursing staff relationship; while preparation techniques can promotecareand satisfaction in pediatric department during hospitalization. Pediatric nurse act as asupporter for children, nurses are responsibleto minimize the effects which results from different painful procedures ***(Ostrow and Rogers, 2014).***

A various methodsused to minimize children pain which results from medical and nursing procedures, as pharmacological and non-pharmacological aspects. Distraction technique is a one of the non- pharmacological methods to decrease pain level. Different methods of distracters have been used for pain treatment in pediatrics with cancer***(Taylor et al., 2013).***The effectiveness method forminimizing painsensation and intensity for the child is the distraction technique. This can optimize the child cooperation at the venipuncture. The clarification of the procedure may usefultocarry out before the venipuncture and should be performed by usingsimple language***(Blount, 2013).*** Staff experience and trained in pain distraction procedure (e.g. a Play Therapist) must be easily obtainable in the different clinical settings such as pediatric oncology departments, where pediatric patient with cancerwere in an stranger environment with strange persons as medical staff and paramedical staff***(Bice and Wyatt 2016).***

Distraction techniques are a procedure like refocusthe child to convey his attention from the unpleasant painful situation to another something attractive. The pain receptors are distrusted,as the child's attention is transferredto othersrather than painful procedure, ***(Bowden and Greenberg, 2013).*** Distractiontechniques evidence to work as the best on a mild degree of pain, particularly achronic pain to the child. Pediatric with cancer are good distracted when practicing common techniques such ashelp child to talk, reading books, and a video game play. The distraction techniques may also include other methods assounding music, enumeration things in the specific room,talking which are non-medical, games and dolls and blebs ***(Abdel-kader et al., 2015).***

The mainobjectivefrom the distraction techniques is to "return childfocus from frightening, situations which increasing anxiety level for child duringmanagement to non-frightening and preferably pleasant, objects or events ***(Christopher et al., 2015).***

Equipment's for distracted techniques must be easilysuitable in differentareasspecified fortreatment of painful proceduresfor children is occurring. These include games, reading and bubbles; electronic toys that will rapidattract and promote a child's attention. Another techniques more useful as recorded music's and videos games.Distraction method which considered during the selectionshould be an appropriate type, nature,anddegree of possible movements ***(Hockenberry and Marilyn, 2014).***

Nursing and medical staff using distraction techniques should beagood expertise to define if the distraction procedure actually utilized is efficient at thetreatment, child's present perception of pain. Progressing evaluatingmust be done for any method will using, regarding to the coping of child's, particularly during thevenipuncture. It may be important to change techniques, but simplelanguage to decrease anxiety. Pain assessment must be continues until ending the procedure ***(Finnley, 2013).***

Consent informs for the children necessaryprior any procedure about,what will smell, feel, and hearing during the vein puncture. Nurse can be usingchildrenpreviousbackground or usual sensations as a nurse guide.As describing sharp and pricking needles, one might say that sometimes it feels like a sting to me, and it is wondering if it will feel like a few stings or cools to you." Like that, the child concentrate on the realistic sensation they experience but not the fright association with painful situation***(Dougal et al., 2014).***

Nurses know the different non-pharmacological strategies but there have a gap between nurses' knowledge level and skills. Caregivers were notified to use distracted techniques, while nurses did not report that distraction method was used. Nurses must know thebenefits fromdistraction technique at clinical area and for psychological aspects not for the child only, but for the parents and also for thenursing staff***(Young, 2014).***

Significance of the Problem

Most researches have focusedon painful procedures, asbone marrow aspiration, immunizationsandlumbar puncture in children***(Cassidy et al., 2015).***Less studiesin theeffectiveness of distraction techniques on minimizing pain and anxiety for cancer children and who's undergoing painful procedures ***(Sander, 2014).***

Aim of the study

The study aimed to assess the effectiveness of distraction on minimizing pain and anxiety for cancer children undergoing venipuncture.

Research question

- What is the effectiveness of distraction techniques on minimizinglevel of pain and anxiety intensity for cancer children undergoing venipuncture procedure?

II. Material And Methods

Research design and setting

A quasi-experimental design was used. The study was conducted in the hematology and oncology pediatric department of the Banha Specialized Pediatric Hospital. These hospitals were selected because that had the largest number of cancer children undergoing venipuncture in the governmental sector.

Sample

A convenient sample was be utilized in this research. Sampling was 94 cancer children divided into two identically groups assigned randomly to thetwo groups (experimental and control) by using the tossing a coin. The experimental group included (47) and was received pain distraction by the researchers. On other hand control group was included the same number (47) and was received the routine nursing care. Children and their parents should be participated voluntarily in the study. Cancer children undergoing venipuncture who were met the inclusion criteria at the time of data collection were considered as accessible population.

Inclusion criteria

- Recurrent exposures to venipuncture, Age were from 6 to 12 years old, both genders.
- Conscious and able to communicate and participation in the study voluntarily.

Exclusion criteria

- Child who had problems (visual, mental ,verbal and hearing disabilities)
- Child was used pain killer and medications to suppress anxiety.

The statically software G Power version 3.1 participant ***(Faul, etal. 2009)*** was utilized to estimate the required sample size by using alpha= 0.05, moderate effect size (0.3), and power= 0.95 applying t test among two groups. Sample size was revealed to be 77 participants. Twenty-five percent of the calculated sample will be added to overcome participants' attrition, the sample which was increased to be 94.

Data collection tools

Three tools wereutilized for collecting data

Tool (I): Interview Questionnaire Sheet. Designed by the researchers were in simple Arabic language. The tool was applied through interviewing the children or one of their parents, and it included the Socio-demographic data for studied sample that include age, gender, medical diagnosis and needle size for venipuncture.

Tool (II): Behavioral Pain Assessment Scale for Young Children FLACC Scale. It was used toassess the pain level and intensity prior and after the procedure of venipuncture for both studied groups. This tool incorporates five categories for the child behavioral. As (level of activity,facial expression,and Crying, Legs, and Consol- ability)
(Merkel, 1997).

Scoring system

Behavioral Pain Assessment Scales for Children, the total score was 10 where, 0 it was indicated no pain, 1-3 it was indicated mild pain, 4-6 it was indicated moderate pain and 7-10 it was indicated severe pain.

Tool (III): Observation sheet for children's level of anxiety,developedby the researchers to evaluate anxiety level for children during the procedure of venipuncture. It was designed by the researchers to assessmany aspects regarding anxiety. The tool was encompassed two main parts:

Part (1): Psychological responsesfor children during venipuncture including: restlessness, stretchmuscles, legs striking, weep, scream, cry,biting on lips, fear and refuse obeys.

Part (2): Physiological response of the child immediately during the procedure of venipuncture including: increased pulse rate, increased respiratory rate,enuresis, sweatingand flushed face.

Regarding the scoring system for observation sheet children's level of anxiety undergoing venipuncture total score is 14.As classified as0- 4 notify mild of anxiety, 5- 8 notify moderate of anxiety and 9-14 indicating severe of anxiety.

Validity and reliability of the study tools

The study tools were rechecked for comprehensiveness, appropriateness, and legibility by three experts in the pediatric nursing specialist to clarity the face and validity. Inthe light oftheir revision, modifications in the face validity were carried out. Regarding reliability oftools established in various setting and indifferent population.

Ethicalconsiderations

Before the conduction of the pilot study as well as the study was approvedthe director of Banha Specialized Pediatric Hospital. The agreement of the chairman of hematology and oncology department was obtained. A writteninformed consent was obtained from one of the mother or father and verbal consent from children that their participation in the study was completely voluntary. At the first meetingwas providing a complete description of the study. The researchers assured that the data collected and information was confidential and was used only for the purpose of the study. No health hazards were presented. Participants were assured that all their data were highly confidential: anonymity was also assured through assigning a number for each child instead of names to protect their privacy.

Pilot study

A pilot- tested for feasibility, clarity and time requires being applies. Carried out on 10% from the total sample size were (9 children or their parents). Children were participated inthe pilot study were excluded from the sample.

Procedure of data collection

The actual field work was carried out at the fourth week of Mayup to the end of September, 2017 for data collection. An official permission wasobtained from the Dean Faculty of Nursing, South Valley University and directors of Pediatrics Hematology and Oncology Departments at Banha Specialized Pediatric Hospital. Obtainedparents' written consent and verbal consent from children that participation was voluntary and had the right of accepting or rejecting participation in the study. All recruited sample were given the explanation about natural of the study by the researchers. Participants were divided into two identically groups randomly assigned into two groups, experimental and control groups. The experimental group was 47 children and the control group was 47. Data was collected be using behavioral pain scale to assess children's pain level and anxiety observational sheet during venipuncture procedure. The nurse obligatedfor vein puncture catheterizing, type,sizeand responsible for catheter, site of venipuncture and surrounding conditions should be similar in all patients. At the first stage, the behavioral pain scale before as the baseline for both studied groups, after that, after the venipuncture for both (experimental and control groups), was observed and recorded using the FLACC by the researchers. Behavioral pain scale was used to assess the pain severity of venipuncture procedure before and after venipuncture, by the researchers' observation it was taken from 3 to 5 minutes. During venipuncture children's anxiety level was assessed by the observational child assessments sheet for psychological and physiological aspects, for both experimental and control group.The pain was distracted among children of the experimental group by using games, interactive books, puppets, bubbles, and magic wand; electronic toys that were rapid engage and promote a child's focusing. Also were useful for distraction recorded music's. Each child in experimental group was met by the researchers immediately before venipuncture at 9 a.m. to 10 a.m. On other hand control group was received only the routine hospital policy for venipuncture procedure. The pain and anxiety degree for each child from recruited sample were taken during and after the vein puncture procedure used the pain scalefrom the same nurse who carry out the venipuncture procedure. Accordingly, the effectiveness of distraction between experimental and control groups were compared and measured. The researcherswere observed each child at both experimental and control groups, one time for each tool before, during and after venipuncture procedure. At 3 days a week (Sunday, Monday and Tuesday) in the morning shift to collect the data by using the previous tools.

Statistical design

The data werepresented, organized,tabulated and analyzed by using SPSS version 21. Data were expressed as frequency and percentage, Comparison between experimental and control groups and had done by using Chi-square test (X^2) for qualitative data. Significance levelfor person relation was used. Statistical significancewas considered at P-value <0.05.

III. Results

Table (1): Distribution of the studied sample regards to socio- demographic data

variables	Items	Experiment group (No=47)		Control group (No=47)	
		No	%	No	%
Age of child	6 < 8	21	44.7	13	27.7
	8 < 10	17	36.2	22	46.8
	10-12	9	19.1	12	25.5
Diagnosis	Blood Cancer	21	44.7	26	55.3
	Solid Tumor	25	53.3	21	44.7
Gender	Female	17	36.2	21	44.7
	Male	30	63.8	26	55.3
Number of Hospitalization	First Time	0	0.0	0	0.0
	More than one time	47	100.0	47	100.0
Needle size for venipuncture	20g	19	40.4	17	36.2
	22g	12	25.5	11	23.4
	24g	16	34.1	19	40.4

Table (1) illustrated that the age of children ranged from 6 years to 12 years, the major ranged from 6 < 8 where 44.7% of the experimental group, compared to 46.8% where 8 < 10 of the control group. Regarding children medical diagnosis 44.7% and 55.3% were blood cancer, while 53.3% and 44.7% were solid tumor for experimental and control group. As regards to gender, for both the experimental and control groups, it was found that 63.8% and 55.3% were males, compared to 36.2% and 44.7% be female respectively. Regarding number of hospitalization, it was found that 100% of the studied sample was more than one time. Finally needle size for venipuncture procedure 40.4% and 36.2% were 20g and 25.5% and 23.4% were22g respectively 34.1% and 40.4% were24g for experimental and controlled group .

Table (2): Effect of distraction technique regards to pain behavior scale for the studied sample.

Items	Experimental group (No=47)	Control group (No=47)	*t*	P-value*
	Mean± SD	Mean± SD		
Before	8.97±1.05	9.57±0.54	3.45	>0.05
After	2.72± 0.852	9.29± 0.77	39.06	0.001

It clear from table (2) that the mean pain level in children before procedure for the experimental group (distraction technique group) was (8.97±1.05). On other hand the mean score of the pain level for the control group (routine hospital care group) before procedural period was (9.57±0.54). *T-test* revealed no statistically difference between experimental group before and after distraction technique, where was (3.45) at P value >0.05. In additional, mean pain level in children after procedure for the experimental group was (2.72±0.852). On other hand the mean score of the pain level in the control group after procedure was (9.29±0.77), where t- test revealed highly significance (39.06) at p value 0.001.

Table (3): Distribution of studied sample regards their psychological response.

Variables	Experimental group (N=47)		Control group (N=47)		P-vale*
	N	%	N	%	
Restlessness	34	72.3	33	70.2	0.82
Stretching muscles	11	23.4	41	87.2	0.001
Striking legs	2	4.3	42	89.4	0.001
Weeping	2	4.3	39	83.0	0.001
Screaming	9	19.1	38	80.9)	0.001
Crying	10	21.3	35	74.5	0.001
Biting on lips	19	40.4	37	78.7	0.001
Refuse to obey	16	34.0	37	78.7	0.001
Fear	16	34.0	29	61.7	0.007

Table (3)clarified a highly statistically difference for, studiedgroups for psychological response during venipuncture procedure, regarding to restlessness, stretch muscles, , striking legs , Biting on lips, weep , scream , cry, refused to obeys and fear, were less in experimental group compared to control group. At p- value 0.001.

Table (4): Distribution of studied sample regards their physiological response.

Items	Experimental group (N=47)		Control group (N=47)		P-vale*
	No	%	No	%	
Increased heart rate	15	31.9	26	55.3	0.001
Rapid respiration	11	23.4	34	72.3	0.001
Sweating	13	27.7	42	89.4	0.001
Flushed face	14	29.8	36	76.6	0.001
Enuresis	14	29.8	32	68.1	0.001

Table (4) revealed a highly statistically difference for, studiedsampleduring venipuncture procedure regarding to physiological response, related to increasedpulse rate,flushed face,increased respiratory rate, sweating & enuresis were less in experimental group than in control group.

Table (5): Comparison the mean scoresregarding psychological and physiological responsesfor studied sample.

Items	Experimental group (N=47)	Control group (N=47)	*t*	P-value
	Mean± SD	Mean± SD		
Psychological response	2.53± 0.71	7.10±0.79	29.14	0.001
Physiological response	1.42±0.82	3.61±14.05	14.05	0.001

Table (5) Shows that the mean score level of Psychological response of cancer children was 2.532 for the Experimental group compared to 7.10±0.71 of the control group. While the mean score level of Physiological response of the cancer children was 1.42 ± 0.82 among the experimental group compared to 3.61±067 of the control group. The table revealed that were a highly statistically significant difference between the studied groups of cancer children regarding to psychological and physiological response during vein puncture as t = 29.14, 14.05 at P<0.001.

IV. Discussion

Regarding to socio-demographic characteristics for cancer children, the current study revealed that the major ranged from 6 < 8 where 44.7% of the experimental group compared to 46.8% where 8 < 10 of the control group. Males were more than females. **Zelzer (2013),Rape (2003)** and **Blaunt (2013)** pointed that cancer is more prevalent among males than females.On the light of the obtained results of the present study, it was clear that medical diagnosis of children as recorded were nearly similar for both the studied groups. Diagnosis for nearly half of them was blood cancer. The Middle East Cancer Consortium center reported the most cancers children were male, under 15 years and diagnosed with leukemia.

From the present study illustrated that the number of hospitalization for cancer children undergoing invasive procedures and needle size, that all children for both groups were admitted more than two times to the hospital. No significance difference found between two studied groups. Children pain can result from painful invasive procedures such as venipuncture. Pharmacological treatment of pain evidence to be not effective, so unrelieved pain may subscribe to complications of disease and slowness in recovery. Different methods for

relief pain are preparation of children before, during and after venipuncturefor helping children to cope with their pain**Marwah, (2012).** Staff nurses in pediatric department should evaluate comfortable level of parents and for child prior- any procedure, and talk with the child about the choose person for engaging in care and procedure forpromotingchild comfort **Rennick et al., (2013).**The study was aimed to evaluate the effectiveness of distraction techniques onminimizing pain and anxiety for children with cancer undergoing venipuncture, by comparing pain levels between experimental group who distraction technique, with control group who do not receive distraction technique during venipuncture.

From results of the study was show that the distraction technique is efficient onminimizingpain with cancer children. Some previous researchesdiscussingpain control for intravenouspuncture, immunization and dressing changes for burning children have registered that distraction technique noteffective on minimizing pain. While were distraction technique using could reduce the reaction of school children undergoing venipuncture procedure**Morgese, (2013)**. From the present studywas obtained results of the present study, it was clear, both the studied groups of cancer children for their pain intensity level before procedure, there were no statistically significant through studied groups. **Kleiberc, (2014)** and **Kuntz, (2012)** who stated that treatment involves painful procedures and extensive stress to the child and family in which that procedures increased level of pain intensity for the children supported this finding.Regarding to the level of pain intensity after procedure, the present study evident that, there was a highly statistically difference compared the experimental and controlled groups after distraction on the level of pain intensity. This finding goes on line with **Bandura, (2012)** and **Elisa, (2010)**, who added that parental fear could influence children's level of fear. In the face of threat and uncertainty, children often look to parents for emotional support for guidance in understanding what is happening.

According to the present study finding, using different distraction technique as contact with children to inform them what will happen or what is happening. This gives the child an overview of what the nurse and physician are doing. The schoolchild can then remind step by step what is happening as expected. This was decreasingdoubt, which in turn maintains the belief that the procedure is under control. In a similar study, was in agreement with the present study, identifying that information presents facts as it provides children with labels for sensation, and help in reforming a situation, which is less threatening**. Kemth, (2010**) added that using different distraction techniques provide preparation and information to the child, which could be used to modify their own coping behaviors. This indicate not only being asked as a fact but also having the chance to adjust the facts to fit their own situation and to plan their own reactions, which have goodeffect on reducing level of pain intensity .The present study findings indicate that the success of the children distraction not only helped in reducing children fear score level but also in reducing the level of pain during venipuncture as manifested by children's physiological responses during vein puncture, as well as their psychological response.

The psychological signs of children during venipuncture were anxiety, stretching muscles, weeping, screaming, crying, biting on lips, and refusal. The present study showed that was a highly statistically difference between two cancer children of recruited sample regarding to psychological response. **El-Sharkawy et al, (2001)** mentioned that children undergoing venipuncture procedures and prepared by therapeutic play, would affect a child reaction more strongly, and their fear was less compared to children among the control group. The resultsimply to the child preparation prior venipuncture procedure could decrease the fear and stress.Further confirmation for this study finding was detected by the comparison of children among experimental and controlled groups in which another study carried out by**Onton, (1990)**, found that there was statistically difference between two groups related psychological responses as the studied group was oriented about all steps of venipuncture techniques showing less fear, weeping and screaming compared with the control group.

Regarding to children physiological response, the present study particular that there was a highly statistically difference between experimental and controlled groups as their physiological responses for cancer children, were flushed face,increased the pulse rate, increased respiratory rate, sweating,elevation in body temperature and enuresis. This result is in similar with the finding of the study by **El-Sharkawoy et al, (2001),** in which the control group had the highest physiological response compared to the experimental group in relation to flushed face, increased heart rate and increased respiratory rate. Also in agreement with **Phippen and Wells, (2014)** and **Kuntz, (2012),**in which the painful situation may result in change of vital signs and other signals of distress such as flushed face and sweating.

At the same time, the physiological responsesas fear and anxietyweremostly observable; which in thechildrenwas the change in circulation that is the action of the heart is strengthened and may be pallor face.In agreement with the present study findings, **Goldenberg, 2013 and Katz, (2003)** have notify that preparation distraction techniquefor children prior exposure to venipuncture procedures had a positive effect on physiological responses and psychological responses for children. Children are often subjected for many painful procedures in oncology departments, allowing distraction technique before and during procedures had multiple benefits; distraction technique is cheap and easily available, requiring few number of staff teaching and being accepted by the children and their families, with no risk to outcomes **Abdel-kader, et al., (2015)**. Distraction

technique has the possibility to enhance the child's participate, and positively efficiency their cope in another experiences**.** Distraction technique for children undergoing venipuncture enhances to promoting parental cooperation in management**Abdel-kaderet al., (2015).**

IV. Conclusion

Pain is a common part in all children lives and for the pain assessment and regular assessing is the essential aspect to impact of the pain management. Distraction of cancer children undergoing venipuncture had positive effect for cancer children on minimizing the pain intensity level.

V. Recommendations

- An educational training program should be conducted to pediatric nurse about various methods of distraction.
- Distraction techniques of pain for cancer children undergoing venipuncture procedure are very important forreducing pain intensity level.
- Non pharmacological management should be integrated into the routine nursing care with pharmacological management.

References

[1]. Abdel-kader R, Arbiat. D., Hamdan MH: (2015).Socio-demographic correlates of parents' participation in care of a hospitalized child: A perspective from a developing country. Journal of Child Health Care. Online publication DOI: 10.1177/136749351559865.

[2]. Alavi A, Zargham A, AbdYazdan Z, Namnabati M,(2012): Comparison of distraction effects and cream (EMLA)on pain intensity catheter insertion in children 12-5thalassemia. Journal of Shahrekord University of Medical Sciences; 7(3):9-15.

[3]. Bandura B (2012): Emergency nursing principles and practice. (3rded), Mosby Company, London, PP: 198-199.

[4]. Bice, AA, & Wyatt, TH (2016): Holistic comfort interventions for pediatric nursing procedures: A systematicreview. Journal of NursingHolistic). do: 10.1177/0898

[5]. Bowden, R.R. and Greenberg, DNSc.RN (2013): Pediatric nursing procedures, 1sted., Lippincott Williams and Wilkins London, pp. 572-634.

[6]. Burke C,Malviya S, Voepel-Lewis T, Tait AR,(2006):The revised FLACC observationalpain tool: improved validity &reliability forassessment the pain in children with impairment cognitive. PediatricAnesthesia, 16(3):258-65.

[7]. Cassidy KL, Reid GJ, McGrath PJ, Finley GA, Smith DJ, Morley C, et al, (2015): Watch needle audiovisual distraction in preschool immunization. Pain Med, 3(2):108-18.

[8]. Christopher NC and Sinha M, ,Fenn R, Reeves L,(2015): Evaluation of non-pharmacologic methodsanxiety laceration repair management in the pediatric emergency department. Pediatrics, 117(4):1162-8.

[9]. Dougal, R. L., Anderson, J. H., Reavy , K., &Shirazi, C. C, (2014):Family presence during resuscitation and/or invasive procedures in the emergency department: one size does not fit all. Journal of Emergency Nursing, 37(2), 152-157.

[10]. Elisa J, (2010): Cognitive-behavioral intervention for children distress during venipuncture. Journal of ChildPsychology and Psychiatry; 20(1)

[11]. El-Sharkawoy S, El-Sayed W and Morsy M, (2001): Therapeutic play as a technique for preparation of preschool age children undergoing invasive nursing procedure. Faculty of Nursing, Ain Shams University, Research Paper

[12]. Finnley J, (2013): Promoting patent provider interaction during young children health suppression visits. Journal of applied behavior analysis; 23(207):12-20.

[13]. Goldenberg N, (2013): Integrating medical and psychological treatments for cancer pain. Journal of Applied Behavior Analysis; 13(15): 15-17.

[14]. Hockenberry, Marilyn J, & Wilson, David, (2014): Wong's Essentials of PediatricNursing9:Wong's Essentials of Pediatric Nursing: Elsevier Health Sciences

[15]. Katz E, (2003):cancer in children and their parents Psychological aspects. Clinical Journal of Psychology Review; 4(7): 230-240.

[16]. Kemth P, (2010): Effect of mother presence of children reaction to aversive procedures.Pediatric Journal of Psychology; 7(3):12-14.

[17]. Kleiberc C and Haper C, (2014): the effectiveness of distraction on children's pain and distress during medical procedure. Journal of Meta-Analysis Nursing Research; 48(1): 44-49.

[18]. Kuntz A, (2012): behavioral &Pain medicine. Cognitive behavioral perspective, toddlewith cancer. Journal of Pediatric; 11(16): 14-25.

[19]. MarwahN,Prabhakar AR, ,Raju OS.(2012): A comparison between audiovisual &audio distractiontechniques in managing anxiety forpatients pediatric dental. J Indian SocPedodPrev Dent, 25(4):177-82.

[20]. Merkel S, (1997): Behavioral Pain Assessment Scales for Young Children. FALC scale. Journal of Pediatric nurse; 23(3): 293-297.

[21]. MorgeseG,Bellieni C V, Cordelli D M, Raffaelli M, Ricci B, , Buonocore G,(2013):The effect of analgesic TV watching during venipuncture. Arch Child; 91:1015-7.

[22]. Morton.N.S,(2014):"Pain assessment in children," Pediatric Anesthesia, vol. 7, no. 4, pp. 267–272.

[23]. Onton D, (1990): Growth and Development of Children, 4th ed. Longman Group: USA, PP: 60-94.

[24]. Ostrow CL and Rogers TL,. The effect of EMLA cream to reducing venipuncture pain in Pediatric childrenNurse2014; 19(1):33-9.

[25]. Phippen M and Wells M, (2014): Pre-operative nursing practice, (3rd, ed), W.B. Saunders, Company: Philadelphia, PP: 237-238.
[26]. Rape R, (2013***):*** Psychological preparation for pediatric oncology patients undergoing painful procedures. JournalInstitute of National Cancer; 1(4):15-20.
[27]. Rennick, Janet E, Lambert, Sylvie, Children, Janet, Campbell-Yeo, Marsha, FilioFrançoise, & Johnston, CCeleste, (2013). Experiences Mothers' of a Talk nursing managementto optimize pain managementin the PICU: A qualitative descriptivestudy. 27(3), 151-157.
[28]. Taylor C, Taylor C, Lillis C, LeMone P, Lynn P,(2013): Fundamentals of nursing: the art andscience of nursingcare. 6th ed. Philadelphia: Lippincott Williams & Wilkins.
[29]. Young, K. D, (2014): Observational study of family member presence for pediatricemergency department procedures. Pediatric emergency care, 30(7), 449-452.
[30]. Zelzar L, (2013): Children's memories for painful cancer treatment procedure. Journal of National Cancer Institute; 4(6): 40-54.

Amira Adel Mohammed "The Effectiveness of Distraction Techniques on Minimizing Pain and Anxiety for Cancer Children Undergoing Venipuncture." IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. 6, no.6 , 2017, pp. 35-43.