



School of Public Health

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Deanship of Graduate Studies
Al-Quds University

**Psychiatric Disorders among Children Attending
Cancer Unit in El-Naseer Pediatric
Hospital – Gaza**

Submitted by

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Dedication

- I would like to dedicate this work to the soul of my father "Abdel Hadi Ali Mansour" and to my dear mother.
- To my brothers, sisters, and nephews
- To dear my husband, and to my sons and daughters
- To all Palestinian children

Declaration

I certify this thesis submitted for the degree of master is result of my research, this thesis or any parts of the same has not submitted for a higher degree to any university or institutions.

Signed.....

Muna Abdel Hadi Mansour

December, 2006

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I would also appreciate my husband and all my daughters and sons.

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My thanks to all my friends and collogues specially Dr. Reyad Al Acraa director of psychiatric hospital and Mr. Emad Habob for their help and encouragement.

Abstract

The main goal of this study was to clarify the prevalence of Psychiatric disorders among cancer children attending pediatric hospital in the age group from 6-12 years in the oncology department of El-Nasser Hospital. The study sample consisted of 50 children, 92% of them had Leukemia compared to a control sample of 52 children treated in the hospital for other medical reasons rather than cancer and had no previous mental health disorder or mental retardation. These psychiatric disorders include anxiety, depression and post traumatic stress disorder.

Data was collected by using questionnaire consisted of a number of scales and divided into four parts, the first part contains the demographic data, the second part contains child post traumatic stress disorder scale CPTSD, the third part contains Children Depression Inventory scale CDI, and the fourth part contains Revised Children Manifest Anxiety Scale RCMAS and all these scales were applied on the study sample.

Most of cancer children 38% live in refugee camps, while 30 of them live in city and 32 % live in the village.

The results of the study show that 56% of cancer children compared by 11.54% of the children in the control group had anxiety disorder, and 64% of cancer children compared with 27% of the children in the control group had moderate to severe depression and 58% of the cancer children compared to 19.2% of the control group had PTSD. The children diagnosed with cancer had more statistically significant differences in anxiety depression PTSD than other control group.

There were no statistically significant difference in the type of residence for anxiety and PTSD variables, but depression was highly rate in children with cancer who live in the city than in village and camps. and there no were statistically significant differences between cancer children and children in the

control group in the number of siblings. According to gender, both males and females are affected by psychiatric disorders. The study also shows that the children of cancer live in low socio-economic status as social income than those in the control group. This study can be generalized for other cancer children in Gaza Strip. The researcher recommended that educational, recreational and psychological programs would be developed to decrease the suffering of cancer children and their families. This can be achieved by integrated mental health team from psychiatrists, psychiatric nurse's, psychologists, and social workers to establish individual psychotherapy, group therapy, social programs to cooperative with patients in hospital or home and Prepare education program for family to increase knowledge to support the children with cancer and their families. The researcher also recommended conducting longitudinal study to follow up the psychiatric disorders for children with cancer and their families.

52

50

, "PTSD"

.RC MAS

CDI

%38 ,

%30

. %32

%11.54

%56

%27

%64 ,

% 19.2

% 58 ,

%92

%90

LIST OF ABBREVIATIONS

ALL	Acute Lymphatic Leukemia
AML	Acute Myeloid Leukemia
APA	American Psychiatric Association
CDI	Children Depression Inventory
CMH	Community Mental Health
CPTSD	Child Post Traumatic Stress Disorder
DSM-IV	Diagnostic and Statistical Manual of Mental Disorder
EGH	European Gaza Hospital
GCMHP	Gaza Community Mental Health Programme
MOH	Ministry Of Health
NIMH	National Institute of Mental Health
PCBS	Palestinian Central Bureau of Statistics
PNA	Palestinian National Authority
PTSD	Post Traumatic Stress Disorder
PTSS	Post Traumatic Stress Symptoms
RCMAS	Revised Children's Manifest Anxiety Scale
SAD	Separation Anxiety Disorder
UNRWA	United Nations Relief and Word Agency
WHO	World Health Organization

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Definitions

Cancer

Cancer is a complex of diseases arising from alterations that can occur in a wide variety of genes. Alterations in normal cellular processes such as signal transduction, cell cycle control, DNA repair, cellular growth and differentiation, translational regulation, senescence, and apoptosis (programmed cell death) can result in a malignant phenotype (Worth, 2000).

Anxiety

Anxiety is one of the feelings all of us experience when we are under stress, physical, social, economic and psychological. Anxiety results in a feeling of impending doom, fear, (which can be intense), dryness of mouth, sweating, restlessness, racing heart, butter flies in the stomach, itching and tingling all over the body, shortness of breath, having to visit bathroom repeatedly, inability to concentrate, make decisions, carry out work, eat a sleep (WHO 2001).

Depression

Depression is the experience of feeling blue, low and worried at times but if these feelings become pervasive, being there all the time, and intense. It can include disturbances of sleep, appetites, feeling self-guilty and worthless and deserving of punishment, feeling weepy, and complaining of difficulty with memory (WHO 2001).

Post traumatic stress disorder (PTSD)

PTSD is exposure to an extreme traumatic stress involving direct personal experience of an event that involves actual or threatening death or serious injury, or other threat to one's physical integrity, or witnessing an event that involve death, injury, or violent death, serious harm, or threat of death or injury experienced by a family member or other classed associate (DSM-IV 2005).

Chapter (1)

Introduction

1.1 Research background

Globally, cancer is and will become an increasingly important factor in the global burden of disease in the decades to come, the estimated number each year is expected to rise from 10 million in 2000 to 15 million by 2020. Some of all these new cases will occur in the less developed parts of the world. A national control program is a public health program, designed to reduce cancer incidence and mortality to improve quality of life of cancer patient (PCR 2000). The systematic and equitable implementation of evidence based strategies for prevention, early detection, diagnosis, treatment, and palliation, making the best use of available resources.

Cancer is the third leading cause of death among Palestinian after cardiovascular disease, and it is the major cause of mortality among Palestinian population. Health efforts aimed to reducing many of environmental and behavioral factors that associated with the onset of cancer.

Cancer is the leading cause of death due to illness in childhood and adolescence, except in infancy (Vaughan, 1987).

Malignant neoplasm was the leading cause of death for 30 child aged 0-18 years in 2003, 15 child aged from 0-4 years and 15 child aged from 5-18 years old (Ministry Of Health, 2004). In United States, cancer causes more deaths than any other disease of

children between the ages of 15 years (Behrman, 1992).

Most of cancer children have periods of anxiety and depression during the course of their illness, e.g. acute lymphatic Leukemia, Myeloid Lymphatic Leukemia and Hodgkin's diseases. For many of children anxiety relates to procedures receiving chemotherapy or even anticipating going to the hospital. A child may appear depressed during acute exacerbation. They may feel better when there is physical improvement. Children may also be depressed and having hospital thereby and missing regular daily activities or not seeing friends (Selter, 1990). A fore most consideration should be psychological and emotional support for patient and family.

Cancer ranks among the most dreaded of disease, a diagnosis can cases extreme fear, helplessness, and psychological trauma. The outcome of the treatment compounds the anxiety and leads of patients feeling powerless cancer is the product of cumulative lifestyle and environment factors that place everyone at risk. In the United States each year, approximately 1.3 million cancers are diagnosed, and so it is the second leading cause of death (Weaver, 2004).

WHO (2004) stated that mental health is an important as physical health to the over all well-being individuals, societies and countries. Yet only small minorities of the 450 million people suffering from a mental or behavioral disorder are receiving treatment. Advances in neuroscience and behavioral medicine have shown that, like many physical illnesses, mental and behavioral disorders are the result of a complex interaction between biological, psychological and social factors. Mental and

behavioral disorders have a basis in the brain; affected people of all ages in all countries. Mental and behavioral disorders estimated to account for 12% of the global burden of disease, yet the mental health budgets of the majority of countries constitute less than 1% of their total health expenditures. The relationship between disease burden and disease spending is clearly disproportionate. More than 40% of countries have no mental health policy and over 30% have no mental health programs. Over 90% of countries have no mental health policy that includes children and adolescents. A child with major psychiatric disorder has a very serious illness affecting several areas of his or her life. These areas may include emotional, social and intellectual ability and the use of language. Children with major psychiatric disorder may also have physical problems. Major psychiatric disorder often last along time and may be lifelong. However, when children with cancer begin treatment early, their health and ability to perform everyday tasks usually improve (McKesson, 2002).

The psychological aspects, of cancer in childhood and adolescence, taking a longitudinal perspective, chronic physical illness in childhood is established risk factor for psychological disturbance (Pless, and Nolan, 1989), thus all pediatrics patients with cancer would be expected to be at increased risk of psychiatric disorder, and important subpopulations may be especially vulnerable. Improved survival from cancer in childhood and adolescence has come at the expense of increased treatment toxicity, which may include second malignant neoplasm's, Gonadal dysfunction, growth failure, and Hobbies, 1986)

1.2 Problem statement

The Problem statement determined by the following question

What is the rate of psychiatric disorder among cancer children?

1.3 Study Justification

The importance of this study comes from the professional observation of Palestinian children treated in pediatric hospital in oncology department for cancer children specially anxiety, depression and PTSD to achieve good life for the cancer children and their families.

WHO (2004) the world is suffering from an increasing burden of mental disorder, and widening "treatment gap". Today, 450 millions people suffer from a mental or behavioral disorder, yet only small minorities of them receive even the most basic treatment. Globally, many are victimized for their illness and become the targets of stigma and discrimination. Further mental disorders represent four of the 10 leading causes of disability worldwide. This growing burden amounts to a huge cost in terms of human misery, disability and economic loss (WHO, 2004).

Although, the increase number of cancer as a serious disease (MOH 2005), and consequences of psychiatric problems in the children, and their parents in our society and so to make attention to psychiatric disorders.

In professional level as the researcher working in psychiatric hospital for the last 23 years, the researcher observed that Palestinian cancer children are needed to be helped psychological in order to integrate them socially regarding to their diseases.

It was arise from the researcher experience in psychiatric hospital and multiple counseling to children cancer in oncology department in pediatric hospital to fulfill psychological needs for helping children to treatment and coping.

To the researcher knowledge, there are no local studies about psychiatric disorders among cancer children.

1.4 Aim of the study

To study the prevalence of psychiatric disorders such as anxiety, depression, and PTSD among cancer children, compared with other children attending pediatric hospital.

1.5 Research objectives

1. To compare the prevalence rate of psychiatric disorders in cancer children comparative to other children attended pediatric hospital for acute and chronic illness.
2. To know gender differences between cancer children and control group according to different psychiatric disorders.
3. To assess the relationship between the type of cancer and psychiatric disorder.

4. To determine differences between socio-demographic and economic factors (age, family income, place of residence) that may contribute to psychiatric disorders in cancer children.
5. To recommend programs for improving mental health for cancer children and other children attended pediatric hospital for chronic disease.

1.6 Research questions

1. What are the rates of anxiety, depression, and PTSD in childhood cancer and case control study?
2. Are there differences of PTSD, anxiety, depression according to residency?
3. Are there gender differences between cancer children and control group according to different psychiatric disorder?
4. Is there relationship between psychiatric disorder and type of cancer?
5. Are there differences between family income and children with cancer?

1.7 Demography of Gaza strip

1.7.1 Geographical context

Gaza Strip is a narrow place of land lying on the coast of the Mediterranean Sea. Its position on the crossroads from Africa to Asia made it a largest for occupiers and conquerors over the centuries. The last of these was Israel who occupied the Gaza strip from Egyptians in 1967. Gaza Strip is very crowded place with an area of 360 km. About 126.6 km. (34.6%) is considered an agricultural area (PCBS.2005).Gaza Strip is an administratively divided into five areas, North, Gaza Mid-zone, Khan-Yonis and Rafah.

1.7.2 Populations

The estimated number of Palestine in over the world by the end of 2004 is 9.305.222 millions distributed, there of 2.3million (63.3%) in west bank and 1.4million (36.7%) in Gaza strip. 42.6% of the populations in Palestine are refugees they are estimated 1.6million at the end of 2004 there of 695.000(29.4) in west bank and 897.000(65.5%) in Gaza strip (MOH2005).

1.7.3 Population density

The population density was 3.443.737/1sequare kilometer, WB 418.7/1 square kilometer. Refugees represent population Palestine 4136.449, Gaza strip about

922.674 (65.5%), of total Palestinian refugee, West Bank less than Gaza strip was 665.246 (29.4%) (PCBS 2004).

Palestinian population pyramid shows age and sex distribution 46% from 0-14 years, 48.3% from 15-64 years, 2.7% from 65 years and over (MOH, 2004).

MOH in (2004) reported that population growth rate 3.83%, birth rate 27.2 births/1,000 population, in 2003 Declined Crude Death Rate to 2.7 deaths/1,000 population and life expectancy which found total population: 72.3 years, male: 70.7 years, female: 73.8 year. Infant mortality rate (IMR) in West Bank 11.2 per/1000 live births in Gaza strip IMR 24 deaths/1000 births (MOH, 2004).

In 2004 the main leading cause of death were heart disease (20.1%), cerebrovascular disease (11.1%), malignant neoplasm (9%), accident (8.8%), senility (5.7%), hypertension (4.9%), pneumonia and other respiratory disorder (4.8%) (MOH 2004).

1.7.4 Palestinian economy

According to Palestinian economy, it is reported that Palestine is considered a middle low-income country.

In 2003, the reported that the unemployment rate is sharply increased from 11.8% in 1999 to reached 31% with constant fluctuation during the last five year due to political

situation and the occupations practices including closure of Palestinian regions and cities and other constraints activities (MOH, 2003).

According to Palestinian Monetary Authority (PMA 2005) The Gross National Product (GNP) in Palestine has been subjected to high fluctuations during the last five years. Gross National Production (GNP) was 5.754 million us in 1999 and decreased to 3.705 million.

The number of worker in Israel decreased from 135.000 in 1999 to 50.000 in 2003. Using the poverty line of us \$2 per day, 2, 25 million Palestinians (60% of the population) living under the poverty line in second quarter 2004. At this stage this could be referred to the increase in the unemployment rate and to incapability of the Palestinian economy to adapt to this difficult phase resulting from Intefada.

The huge number of Palestinian laborers who had lost their job in Israeli labor market and the destruction of the Palestinian economy infrastructure contributed largely to the severity of poverty (PCBS, 2004). In 1998 the average daily consumption of poor person was equivalent to US\$1.47 per day this has now slipped more than 75 percent of the population of the Gaza Strip is now poor (MOH, 2004).

1.7.5 Political situation

Since the beginning of, Alaqsa Intefada, The present wave of violence by Israeli government is essentially an attempt by them to achieve their maximal political goals and avoid the choice necessary to bring the negotiation to successful conclusion

indeed. Peace has become major concern at this time of trouble and unrest where the Palestinian leadership makes it clear to the whole world (MOH, 2004).

The whole area under the control of Palestinian has witnessed very difficult and dreadful time of war, and poverty due to the continue incursions in almost entire area. The Israeli force reinforced with bulldozers and combat helicopters invaded the various Palestinian occupied territories (MOH, 2004).

In 1998, Israel implemented new policies to increased Palestinian life difficulties by increased the closures, restriction on Palestinian travel and other security procedures on the movement of Palestinian goods and labor. Palestinian self-rule areas and a severely in 2002, Israeli military measures in Palestinian Authority areas resulted in the destruction of capital plant and administrative structure, widespread business closures, and a sharp drop in GDP. Including West Bank, the UN estimates that more than 135,000 Palestinians in 1999 then decrease to 50,000 in 2003 due to political situation and recurrent crisis in Palestine. The worker in Palestine increases from 453000 in 1999 to 474000 in 2004 (MOH 2005).

1.8 Health services for cancer children

Health services for cancer children are provided by El Nasser pediatric hospital and Gaza European hospital.

1.8.1 El-Nasser Children's Hospital

Al-Nasser Children's Hospital in Gaza is a governmental hospital related to the MOH. It is the central hospital for children in Gaza strip and it provides secondary, tertiary and non- surgical services for children from delivery up to 12 years of age. This hospital consists of 184 beds distributed into eight departments as follow:

Four general departments with 100 beds, nursery with 24 incubators, reception and day care 24 beds, Hematology and Oncology department with 24 beds + 9 daily care beds and intensive care unit with 6 beds. This is in addition to out patient department, laboratory, X-ray department, pharmacy, administration supportive services, units or offices. The number of formally employed manpower was 234 persons who were classified according to the type of profession into: 99 Nurses, 47 physicians, 30 total paramedical staff (13 laboratory technicians, 8-ray technicians and 9 pharmacists) and 58 total supportive staff employees. The cleansing services were performed by the private sector and meals were prepared in the near psychiatric hospital. The average monthly occupancy rates in 2003 as the following: inpatient department was 86%, and number of visits to hematology–Oncology daily care was 336 cases. The inpatient and outpatient departments were crowded most of the time. (Al-Nasser Children's Hospital records, 2004)

1.8.2 The oncology department of El Nasser pediatric hospital

The oncology department of El Nasser pediatric hospital was opened in 1998, it contains 30 beds, 20 for in patients and 10 beds for the out patient in the clinic, and

its manpower consists of 6 physicians, 9 nurses, one psychologist and one pharmacist. The services in this department are provided for children with cancer and with blood diseases (hematology).

The patients are treated by chemotherapy and pharmacy therapy in these two hospitals. Those patients who need surgical interventions are usually transferred to El Shifa hospital or to hospitals in other countries like Israel, Jordan or Egypt.

Early detected cases has better prognosis, but if the disease was discovered in the later stages, the improvement responses decrease. Children are treated form birth to 12 years old, many of the patients are in the school age who suffers from immune suppression due to chemotherapy and they need more nurturing and caring even after their discharge form the hospital and return to school these hospitals used an International protocol for chemotherapy (MOH 2005).

1.8.3 Oncology department at European Gaza Hospital (EGH)

Oncology department was open in 2001 due to repetitive closures and obstacles imposed by Israeli occupation. This step was taken to facilitate and minimize the suffering of people in the southern zone. The patients receive their medical and nursing care and their chemotherapy treatment in areas where their live. The oncology department services are divided into two parts:

First, either through admitting the patients and the Second, through daily cares for out patient clinic either young or adult to all ages. The department consists of two rooms

one for males and another for females. Daily care has ten beds directed by medical and nursing staff of eleven doctors and ten nurses, (EGH 2003).

Summary

Psychiatric disorder is result of an interaction between the child's constitution, experience, and environment (family, peers or school) Thabet A (1996). Mental health is very important to complete cycle of health as WHO define health as not merely the absence of disease or infirmity, but rather, a state of complete physical, mental and social well-being (WHO, 2004).). So it is very important to give attention for these cancer children.

Today mental and physical illnesses are influenced by a combination of biological, psychological, and social factors; diagnosis and treatment with cost-effectively. From the sum of our understanding people with mental or behavioral disorders today have new hope of living full and productive lives in their own communities.

This chapter highlighted to the background of study, subject, problem, objective, research questions and the rule of psychiatric disorders particular anxiety, depression and PTSD in cancer children by scientific models.

Chapter (2)

Literature review

Introduction

In this chapter, the researcher will discuss the Literature review of psychiatric disorders among cancer children compared with other group non-cancer children, concerned with the studies of anxiety, depression, PTSD and psychosocial factors related to the study.

2.1 Psychological aspect in cancer children

Pediatric oncology patients must endure prolonged and endless treatment protocols, severe side effects caused by treatment, and uncertainty regarding progression of their disease Yeh and Wong (2004). Since major advances in cancer treatment has dramatically improved survival rates for cancer patients. Western studies have not yet shown conclusive findings of long-term behavioral or emotional problems in children with cancer.

The studies suggest a link between cancer treatment toxicity and psychological outcome. Mulhern et al. (1989b) using the Child Behavior Checklist, reported that administration of prophylactic cranial radiation, known to produce cognitive impairment (Fletcher and Copeland, 1988) was predictive of psychological disturbance

in long-term survivors, and Greenberg et al. (1989) found that the severity of several adverse medical late effects, including cognitive impairment, predicted depression and poor self-concept in survivors

The study of Yeh and Wong (2004) aimed to examine the factor structure of Achenbach's child behavior checklist that is widely used to screen the children's behavior and emotional problems, the child Behavior checklist 4-18 included 2 parts, the first part had 20 competence items and the second part had 118 problem items. Competence items assess children competence in 3 domains, activities, social and school. The problem items were developed on the concerns of parents and mental health professionals as well as clinical observations and the research literature, using confirmatory factor analysis, in a group of oncology patients in Taiwan and to compare the competence and behavioral /emotional problems scores of these children of Taiwanese children with cancer. Subjects included parents (124 mothers and 22 fathers) of 146 pediatric oncology children 96 boys and 50 girls who completed the measures. Results showed that Taiwanese children with cancer had significantly lower competence scores on the child behavior checklist 4-18 than did Achenbach's sample, except Taiwanese girls with cancer, who had higher activity competence scores, but these scores were not statistically significant. Taiwanese boys with cancer had significantly higher scores on all of emotional behavioral problems, but lower delinquent behavior, aggressive behavior, and externalizing syndrome scores in contrast; girls with cancer had significantly higher scores on somatic complaints and internalizing syndrome, but significantly lower aggressive behavior and externalizing syndrome scores.

2.2 Anxiety and Depression in children with cancer

Koocher and O'Malley (1991) the study aimed to investigate psychiatric disorder among childhood cancer survivors Compared to a control group of children with chronic, non-life-threatening illnesses, comprehensively assessed 114 long-term childhood cancer survivors retrospectively, using self-report measures of anxiety, depression, and self-esteem, and assignment of "a combined adjustment rating" from independent interview data of a psychiatrist and psychologist. In this study, 53 of the 114 subjects (47%) were judged to exhibit at least "mild" psychological symptoms. Of the total, 26% had "mild" symptoms without functional impairment, 10% were moderately symptomatic and unimpaired, and 11.2% had moderate or severe symptoms and functional impairment. Psychiatric interviews revealed more anxiety and depression and lower self-esteem in the 47% judged "poorly adjusted" than in the 53% judged "well adjusted." Paralleling the interview findings, among several psychological and demographic variables assessed using standardized measures, levels of depression and anxiety and low self-esteem accounted for the greatest proportion of the variance in overall adjustment. Compared to a control group of children with chronic, non-life-threatening illnesses, the group of cancer survivors exhibited significantly poorer overall adjustment and lower self-satisfaction. Founding that is well-adjusted survivors in this study used denial adaptively and were more likely to have been informed promptly of their diagnosis of cancer.

In the study of last and Veldhuizen (1996) in Amsterdam, the aim of the study was to test the hypothesis that being openly informal about the diagnosis and prognosis benefits the emotional well-being of children with cancer. The sample was a stratified 56 children with cancer aged 8-16 years and their parent participated. The parents were interviewed about the information they had given to their child. Self report questionnaire were administered to the children measuring anxiety and depression by using Dutch Version of the state Trait Anxiety Inventory for children. They found that children who received open information about their diagnosis and prognosis at the initial stage of the disease showed significantly less anxiety and depression. According to the findings suggest that parents should be advised to inform their child with cancer openly and soon after the initial diagnosis.

Physicians should offer help to the parents in dealing with the different task of confronting the child with diagnosis, prognosis and treatment.

In Iran the study of Zarin (1998) aimed to identify the development of depression in ill and healthy children is explored and the question of whether hospitalization is accompanied by improvement in depression among cancer and non-cancer patients is addressed. The three groups of subjects were (1) patients with cancer (N=30; mean age=15.5 years); (2) patients with some other disease (N=30; mean age=15.8 years); and (3) normal subjects (N=30; baseline age=16 years). Mean hospitalization was 55 days. The Beck Depression Inventory was used to assess depression. The design was carried out. MANOVA and ANOVA analyses were used. The study found that. The pretest revealed a significant difference among the three groups in depression. After 4 months results show (1) depression was positively correlated with hospitalization stays

of patients, and (2) there is a significant relationship between patients' (both groups) and healthy adolescents' depression.

2.3 Psychosocial Factors

Psychosocial Factors, mental health and pediatric primary care of the study of Tonb, et al (1999) their study aimed to identify the relationship of mental factors of pediatric medical care in a 12-month period is examined using cross-sectional and prospective data from a community-based cohort of children (aged 4-8 years) and their families. Results from this study demonstrate that mothers self report mental health is statistically significantly related to a number of pediatric visits. In the cross sectional analysis, the effect of mother's mental health on children with 5 or more pediatric visits is moderated by poverty and mothers with depressive symptoms are much more likely than those without such symptoms to have children who are very high Service users (10 visits or more). In the longitudinal analysis, an inconsistent pattern of mother's mental health problems over 24-month period increases the persistence of maternal mental health problems in increases the likelihood of very high use.

Of United States, Manne et al (1995) the study aimed to examine predictors of depressive symptoms among 59 parents providing primary care to children newly diagnosed with cancer.

Parents were studied for a 3- month period. The parent providing primary care to the child during medical treatment completed measures of depressive symptoms, endorsement of family functioning care to the child, child behavior problems, as well

as measures of the severity of the child's treatment. The researchers found a strong relationship between child behavior problems and parent depressive symptomatology. The results revealed that the child's behavior problems were most strongly associated with parent depressive symptoms and the family cohesiveness also had a contributory role in the maintenance of parent depressive symptoms.

In Egypt The study of El-Hamarwi et al (2003) was to assess the anxiety in cancer children and their family by using the test anxiety scale for children and their parents were examined by psychiatric interviewing guided by ICD-10 classification for psychiatric disorders and they were given also the Arabic version of Beck depression inventory scale, the sample size forty-three cancer children and the control group was 30 chronically ill children matched for age, sex, duration of illness and education. The study approved a significant psychiatric and psychological impact of the diagnosis cancer on both diagnosis and longer hospitalization period, and the study also approved increased burden of cancer lower social status families.

Engel and Romy (2000) in the study aimed to explore the factors associated with children's psychological adjustment with cancer, including gender, treatment status, reciprocity of parent-child coping, and family functioning variables. Participants were 40 children with cancer, 7-16 years of age, who completed the Child Behavioral Style Scale (CBSS), and their parents who completed the Personality Inventory for Children (PIC), Monitoring/Blunting Behavioral Scale (MBSS), State-Trait Anxiety Inventory (STAI), Family Adaptability and Cohesion Scale-11(FACES 11), and the Dyadic Adjustment Scale (DAS).

The data also indicate that family adaptability was associated with children's Adjustment. However, parental anxiety and the quality of the marital relationship were not found to be associated with children's adjustment.

2.4 Studies of anxiety

Gershon, et al (2004) the study was aimed to pilot and test the feasibility of a novel technology to reduce anxiety and pain associated with an invasive medical procedure in children with cancer. Method: Children with cancer (ages 7-19) whose treatment protocols required access of their subcutaneous venous port device (port access) were randomly assigned to a virtual reality distraction intervention, a non-virtual reality distraction, or treatment as usual without a distraction. The researchers obtained assessments of the child's pain and anxiety from the parent, child, and un-blinded nurses. Pulse rate was monitored throughout the procedure, and behavioral indices of distress were recorded, as observed by the researchers. Results: Reductions in pain and anxiety were found for children who used the virtual reality distraction in comparison with the no distraction condition as evidenced by lower pulse rate and reports of pain by nurses. No significant differences were found for the non-virtual reality condition versus the no distraction condition on pulse rate. The results suggest that virtual reality may be a useful tool for distraction during painful medical procedures, but further studies are needed to test potential efficacy and feasibility during other, more distressing medical procedures with larger sample sizes.

In South Australia, the study of (Sawyer, et al 1997) was aimed to investigate the prevalence of psychological problems experienced by children with cancer aged 2-5 years and parents during the first 2 years after the children's diagnosis, (n=38) were assessed immediately after diagnosis, at each assessment, the psychological adjustment of the children and their families was compared with the adjustment of a cohort of children and families in the general community (n=39). All 38 children with cancer received some of chemotherapy as part of their treatment. Children with acute lymphatic leukemia were treated (n=25) and children with other types of cancer (n=13) were treated according to the protocols of Australian and New Zealand children's cancer study group.

The control group was randomly selected from primary school and preschool health clinic that agreed to participate in the study. Emotional and behavioral problems were assessed by means of the child behavior checklist {CBCL} 2-3 or CBCL, 14-18 completed by mothers (Achenbach, 1991, 1992). And the psychological adjustment of parents was assessed by means of the 28- items General Health Questionnaire (GHQ) (Goldberg, 1978). The results of the study was the children with cancer were reported to be more anxious, dependent, and tearful and to experience more sleep disturbance than children in the community and that problems reflected the impact of hospitalization chemotherapy, and other invasive medical procedures on the children with cancer. However, although the internalizing score on CBCL reported for children with cancer was significantly higher than that previously reported for children attending mental health clinics (Achenbach, 1991, 1992). During the post diagnosis period mothers and fathers of children with cancer reported that that they were

experiencing significantly more than strain, anxiety, and sleep loss than parents in the general community.

Salas et al (2002) in this study aimed to assess the pain and anxiety experienced by children with cancer undergoing painful medical procedures. Issues such as the prevalence of pain in childhood cancer, the psychological impact of medical procedures in children, and the efforts some institutions are making to implement pediatric pain assessment programs are also reviewed, bearing in mind that pain is a subjective and multidimensional experience. Behavioral measures, self-reports, multidimensional, assessment tools and physiological measures are included, emphasizing the importance of self-reports, which are considered the gold standard in pediatric pain assessment. The study indicates the need for research and for the education of health care professionals in pediatric pain assessment is suggested.

The study by Yeh, et al (2002) was aimed to assess competence and emotional/behavioral problems of children in cancer children. The subjects were oncology patients recruited from pediatric oncology wards and hospital, Taiwan. Eligible subjects for this study were children between the ages of 7 and 18 years at the time of cancer diagnosis. Data were collected from parents of eligible children who had cancer. The sample size-146 patients participate in the study (124 mothers and 22 fathers) documented the factor structure testing of Achenbach's CBCL 14-18 using CFA. The results were found that clearly indicate that healthcare for children with cancer should include psychological services to prevent long-term emotional/behavioral problems.

Bessell and Ann (1999) the purpose of the study was to describe the social anxiety, self-perception, quality of life, and school experiences in post-treatment survivors of pediatric cancer. A multimodal, multi-source approach, including both quantitative and qualitative data collection methods was utilized to comprehensively describe the children and adolescents perceptions and adjustments to cancer. This investigation gave voice to survivor's views related to educational and psychosocial sequel of treatment.

Data were collected from 51 survivors of childhood cancer who were 8-17 years old, off treatment for at least 6 months, and attending school. Participants completed the Social Anxiety Scale, Self-perception Profile, Miami Pediatric Quality of life Questionnaire, and participated in the semi-structured School Experience Interview. This study examined the influence of grade level, retention history, school placement following treatment, Quantitative assessments revealed higher social anxiety in children than adolescents. Students in ESE classes following cancer treatment and those who were homebound during treatment experienced the greatest difficulties in psychosocial adjustment in the areas of scholastic competence, emotional stability and social competence. Gifted/honors students reported significantly higher behavioral conduct than students ESE or regular classes. Qualitative results revealed that students who repeated a grade in school were generally unhappy in school and were particularly concerned with their academic performance and peer relationships. Students found homebound instruction during treatment academically inadequate and socially isolating.

Last, & Veldhuizen (1996) this study was aim to test the hypothesis that being openly informed about the diagnosis and prognosis benefits the emotional well-being of children with cancer. A stratified sample of 56 children with cancer aged 8-16 years and their parents participated. The parents were interviewed about the information they had given to their child. Self-report questionnaire were administered to the children measuring anxiety and depression. Children who received open information about their diagnosis and prognosis at the initial stage of the disease showed significantly less anxiety and depression. Our findings suggest that parents should be advised to inform their child with cancer openly and soon after the initial diagnosis. Physicians should offer help to the parents in dealing with the difficult task of confronting the child with the diagnosis, prognosis and treatment.

White, et al (1993) this study reviews research literature pertaining to the pain and anxiety associated with pediatric cancer and the use of hypnosis as an adjunct treatment. It is noted that pain and anxiety are most often associated with the procedural treatment of cancer, and that the literature suggests that both pain and anxiety are multi-faceted constructs. This review focuses on the pain and anxiety associated with treatment of the disease (bone-marrow aspirations, lumbar punctures, and chemotherapy), rather than the disease itself. The general results of the literature review suggest that pain and anxiety are significant aspects of unique pediatric cancer conditions, and that hypnosis can be effective in helping to alleviate the distress associated with cancer treatment. Limitations of the present research are considered; it is noted that assessment of cancer-related pediatric distress is difficult because only a small number of instruments are available for measuring distress and because the

assessment process must take into account the developmental stage and coping styles of the child. Hypnosis is viewed as a behavioral technique that can help the child distort, displace, or transform the perception of pain, and self-hypnosis is viewed as a way of empowering the child which has both medical and non-medical benefits. Recommendations are made for future research, both in the area of pain assessment and in the field of hypnosis for children.

2.5 Studies of PTSD in cancer children

The nature of childhood cancer as a trauma is that it is not discrete, it is repetitive (diagnosis and treatments) and chronic in the form of follow up visits, medical late effects, and the risk of recurrence or second cancers (Stuber, et al 1998). Furthermore, childhood cancer is a life threatening trauma, experienced by children and their parents with fear, horror, and helplessness (Kazak, et al 1998). Given the nature of this traumatic experience short and long- term, responses to childhood cancer can be understood as trauma responses and symptoms of posttraumatic stress identified.

This study assessed the prevalence of posttraumatic stress symptoms in young adult survivors of childhood cancer and the association of posttraumatic stress with anxiety, adjustment, perceptions of illness and treatment, and medical data extracted from oncology records. Patients and Methods: Seventy-eight young adults (ages 18 to 40 years) who had been treated for childhood cancer completed questionnaires and psychiatric interviews assessing posttraumatic stress, anxiety, perceptions of their illness and treatment, and symptoms of psychologic distress, data on treatment

intensity and severity of medical late effects were collected via chart review. Results: Of the patient sample, 20.5% met American Psychiatric Association Diagnostic and Statistical Manual criteria for posttraumatic stress disorder (PTSD) at some point since the end of their treatment. Clinically significant levels of intrusive (9%) and avoidant (16.7%) symptoms were reported. Participants also reported elevated state and trait anxiety. Participants with PTSD reported higher perceived current life threat, more intense treatment histories, and higher (and clinically significant) levels of psychologic distress than those who did not have PTSD. Conclusion: One-fifth of this sample of young adult survivors of childhood cancer met criteria for a diagnosis of PTSD, with clinically significant symptoms of intrusion and avoidance reported. As in other samples, PTSD in young adult survivors was associated with anxiety and other psychologic distress. Survivor's perceptions of treatment and its effects were more highly associated with posttraumatic stress than were more objective medical data. The data suggest that cancer-related posttraumatic stress may emerge in young adulthood and may affect the achievement of developmental milestones and orientation toward health care.

Meeske, et al (2000) this study aimed to examines the association between Posttraumatic stress disorder (PTSD), long- term quality of life and psychological outcome in young adult survivors of childhood cancer. The sample of 51 childhood cancer survivors (18-31 years of age, mean time of treatment =11years) 20% met full criteria for PTSD using the Structured Clinical Interview for DSM IV PTSD. The survivors with PTSD reported clinically significant levels psychological distress on all Brief Symptom Inventory subscales, while the survivors without PTSD reported

symptoms levels well within the population norms. The survivors with PTSD also reported a poor quality of life on all subscales of the Rand SF-36 compared to the survivor's without PTSD.

The study in Oslo, Norway of Markus et al (2004) aimed to identify the incidence and association of parental and child posttraumatic stress symptoms in pediatric patient.

The study examined, the incidence rates and determinants of posttraumatic stress symptoms PTSD and posttraumatic stress disorder PTSD in the patient and with their mothers and fathers and also the association between the child their parents. The method was, 209 children (aged 6.5-14years) were interviewed often an accident as anew diagnosis of cancer or diabetes mellitus, by the means of child PTSD-RI, their mother (n=180), fathers (n=175) were assessed by PTSD-diagnostic scale according to DSTL-IV Results, children reported PTSD levels in the mild range, 16% of the fathers, 239% of the mothers. In children, accident related injury was associated with higher PTSS score. Conversely in parents, diagnosis if cancer in their child associated with more symptoms, however, child PTSS were not significantly related to PTSS of mothers and fathers. This was true for total scores as well as for DSM-IV symptoms clusters.

Baracat, et al (2000) the study was to examine prospectively the impact of posttraumatic stress symptoms (PTSS) in response to childhood cancer and treatment on general adjustment while accounting for the role of other stressful life events and appraisal of life threat and treatment intensity. The sample was 56 childhood cancer survivors, aged 8 to 18, and 65 mothers completed self-report measures of PTSS and

appraisal of the intensity and life threat associated with cancer by using Post Traumatic Stress Disorder Reaction Index and Impact of Event Scale (IES) for both children and their mothers. Treatment at time 1 and self-report measures of stressful life events and general adjustment at time 2 (approximately 18 months after time 1), Results found that the children survivors and their mothers, posttraumatic stress at time 1 significantly predicted general adjustment at time 2, over and above the significant contribution of lifetime stressful events. The life events variable did not function as a mediator in the association of PTSS and general adjustment. Conclusion, that trauma responses to childhood cancer and its treatment have implications for the long-term adaptation of children and their families. Early signs and symptoms of post traumatic stress and stressful life experiences require early assessment and intervention.

Hobbie, (2000) unfortunately, for 20.5% of adult survivors of childhood cancer, post-traumatic stress disorder (PTSD) may stand in the way of a happy, productive life. Although studies have shown that child and adolescent survivors of cancer are "generally well adjusted," researchers in Philadelphia, Rochester and Los Angeles believed that young adults may be more at risk for PTSD and related disorders. Young adults, they proposed, might begin having PTSD symptoms as they face the new challenges of adulthood. Additionally, they may now have to cope with physical complications stemming from their original illnesses.

In the study of Cortes, et al (2005) aimed to identified The current study was conducted to determine if post-traumatic stress disorder (PTSD) symptomatology predicted later development of non-PTSD anxiety disorders in children and

adolescents victimized by interpersonal trauma. Methods: Thirty-four children with a history of interpersonal trauma and no initial diagnosis of anxiety disorder participated in the study. Children were assessed at time one (T1) and then 12-18 months later at time two (T2). At T1, the Clinician Administered PTSD Scale for Children and Adolescents (CAPS-CA) and the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL) were used to evaluate children's PTSD symptoms and comorbid non-PTSD anxiety disorder diagnosis. At T2, the CAPS-CA and the K-SADS-PL were repeated. Results: The diagnosis of PTSD and PTSD symptoms in children exposed to interpersonal trauma at T1, particularly the symptoms associated with avoidance and constricted emotional expression (criteria C) as well as physiological hyperarousal (criteria D), predicted the development of other anxiety disorders at T2. Conclusion: Traumatized children with initial PTSD symptomatology may be at risk of later development of other anxiety disorders.

2.6 The studies of PTSD and anxiety in cancer children

Niles and Marianne (1995) the study discussed the Post-traumatic stress in response to childhood cancer; an examination of child/adolescent cancer survivors and their parents. This study examined the psychological impact of treatment for childhood cancer in light of markedly improved treatment methods and an increasing number of long –term survivors. The methodology utilized a post-traumatic stress model to understand the experience of the child/adolescent cancer survivor and that of the mother and father. A sample of 50 pediatric leukemia survivors (male=25, female=25)

age 7-19 years and their parents (mothers=50, fathers=39) completed questionnaires which assessed symptoms of post-traumatic stress (post-traumatic stress disorder reaction index), impact of stressful events (Impact of Events Scale), and anxiety (State-trait Anxiety Inventory; Revised Children's Manifest Anxiety Scale). A comparison group was comprised of 70 non-medically ill children/adolescents (male=30, female=40) and their parents (mothers=70, fathers=40). It was hypothesized that childhood cancer survivors and their parents would report greater levels of post-traumatic stress and anxiety than a comparison group of non-ill children/adolescents and parents. The results in large part support the model of post-traumatic stress as an explanatory concept for the experiences of some survivors and their parents. Specifically, according to normative data for the Reaction Index. The results found 14% of the survivor's children reported symptoms characteristic of a severe level of post-traumatic stress. Parents of survivors reported higher levels of post-traumatic stress, with 33.3% of fathers and 40.8% of mothers reporting symptoms at the severe levels. When compared with a group of non-ill children/adolescents and their parents, report significantly higher levels of post-traumatic stress than the comparison group.

In the study of Cortes, et al (2005) aimed to identify The current study was conducted to determine if post-traumatic stress disorder (PTSD) symptomatology predicted later development of non-PTSD anxiety disorders in children and adolescents victimized by interpersonal trauma. Methods: Thirty-four children with a history of interpersonal trauma and no initial diagnosis of anxiety disorder participated in the study. Children were assessed at time one (T1) and then 12-18 months later at time two (T2). At T1, the Clinician Administered PTSD Scale for Children and

Adolescents (CAPS-CA) and the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL) were used to evaluate children's PTSD symptoms and comorbid non-PTSD anxiety disorder diagnosis. At T2, the CAPS-CA and the K-SADS-PL were repeated. Results: The diagnosis of PTSD and PTSD symptoms in children exposed to interpersonal trauma at T1, particularly the symptoms associated with avoidance and constricted emotional expression (criteria C) as well as physiological hyperarousal (criteria D), predicted the development of other anxiety disorders at T2. Conclusion: Traumatized children with initial PTSD symptomatology may be at risk of later development of other anxiety disorders.

2.7 Studies of depression

Despite new technology, screening, and rigorous treatments, cancer still contributes to 25% of all deaths in the United States.(1) It is estimated that 20% to 25% of cancer patients suffer from unrecognized and untreated long-term depression([2) This means that, on average, one in four cancer patients are clinically depressed. Furthermore, recent national attention has focused on the unacceptable under-treatment of cancer-related pain, depression, and fatigue (3). Despite the fact that depression can cause a major decrease in the quality of life, the issue of depression among palliative care cancer patients has received relatively little nursing attention; in fact, few studies could be found that focused on the recognition of depression by US nurses in palliative cancer care (Liza, et al 2005).

Lesperance et al (2000) defined depression is not bad attitude, and it is not simply being pessimistic. It is not feeling sad or down and moody for a few days. It is more

than transitory psychological distress. Depression is a consideration of its similarities and differences with the experience of grief. Whereas a sense of loss, despair, and sadness and withdrawal from usual activities are normal following the loss of a loved person, they are also symptoms of depression. However, experiencing and expressing sadness during bereavement is not only normal, but also probably necessary. It is part of the healing process facilitating the psychological separation imposed by the death of a loved person. Similarly, it can also be appropriate to be sad for some period of time following the loss of something significant other than a person; for instance, health, social status, long life expectancy. However, in depression, the period of sadness or lack of interest is abnormally interest, or abnormally long, and interferes with a variety of personal, interpersonal, and social activities.

Challinor et al (1997) their study aimed to identify the behavioral performance of children with cancer; Assessment using the Behavioral Assessment System for Children (BASC).All children has biological, school, and family risk and protective factors that influence their success in school. A child who is diagnosed with cancer has increased risks for school failure related to the illness and treatment. School performance is composed of three equally important domains; behavioral performance, neurocognitive performance, and social competency. The first purpose of this descriptive comparative study is to describe the behavioral performance of children with cancer and children who have survived the disease compared to normative data on the Behavior Assessment System for children (BASC) questionnaire .Behavioral performance of these children was measured according to the child's self-report as well as parent and teacher report on the BASC questionnaire. The second purpose of

the study is to determine the congruence among parent and teacher responses .The study result was the children with cancer did not have an increase in behavioral problems or negative self perception compared to the normative data when they were evaluated by their teachers or themselves. However, Parents reported statistically higher scores for the internalizing problems composite scale for children with cancer than did their teachers. In addition, the parents reported a higher level of depression for their child with cancer than did the children's teachers.

In Iran the study of Zarin (1998) aimed to identify the development of depression in ill and healthy children is explored and the question of whether hospitalization is accompanied by improvement in depression among cancer and non-cancer patients is addressed. The three groups of subjects were (1) patients with cancer (N=30; mean age=15.5 years); (2) patients with some other disease (N=30; mean age=15.8 years); and (3) normal subjects (N=30; baseline age=16 years). Mean hospitalization was 55 days. The Beck Depression Inventory was used to assess depression. The design was carried out. MANOVA and ANOVA analyses were used. The study found that the pretest revealed a significant difference among the three groups in depression. After 4 months results show (1) depression was positively correlated with hospitalization stays of patients, and (2) there is a significant relationship between patients' (both groups) and healthy adolescents' depression.

Mariann and his colleagues (2005) aimed to study perceived distress among adolescents recently diagnosed with cancer, 56 adolescents (13-19years) were interviewed by telephone 4-8weeks after diagnosis: the interviews included structured

(HADS) interview guide, the hospital Anxiety and Depression scale was employed to measure the prevalence and levels of self-reported anxiety and depression. HADS consists of two subscales, one assessing Anxiety (seven items) and one assessing depression (seven items), using a four grade verbal scale coded (0-3). Subscale scores ranged from 0(no distress) to 21(maximum distress).HADS found to possess adequate test retest reliability and sensitivity for the use with adolescents and correctly identify a majority of clinical cases of psychiatric mood disorders among adolescents with cancer. To measure the levels of well being , two subscales, the SF-36 test were used: vitality (four items) and mental Health (five items).The prognosis for the adolescent was estimated by the treating doctor on aspects on a five-grade scale from very good to worse. The most prevalent aspects of distress were identified as losing hair (91%), missing leisure activity (84%), weight loss/gain (80%), fatigue (62%), worry about missing school (62%).The aspects with the highest level of distress its mean value were missing leisure activities (3.75), worrying about missing school (2.84),fatigue (2.80) .The aspects that were rated as the overall worst aspects by most adolescents were: worry about not getting well (n=10), mucositis (n=7), pain from procedures and treatments(n=10), worry about missing school (n=7). The mean value for HADS-A was 4.68(Sp3.03, for HADS-D) it was 4.32 (sd.2.80). 12%reached the cut off score for potential clinical anxiety and 21%for potential clinical depression .The Pearson product –moment correlation between the two scales was $r=0.34$ ($p<0.01$) cronbach alpha values for HADS-A was 0.66 and for HADS-D was 0.54. Findings show that more adolescents among those scoring in the clinical range of anxiety and depression reported experiencing a number of aspects of a social/psychological nature, pain from procedures and treatments, and weight changes than among those hot scoring in the

clinical range of those problems. The mean values for vitality 47.8 (SD21.9) and mental health 65.9 (SD18.7) were lower than the normal values. Prevalence of pain from procedures/ treatments was high among those who scored in the clinical range of depression, and more adolescents who were treated at a local hospital scored in the clinical range of anxiety girls reported experiencing lower self-esteem more worry about changed appearance and higher level of anxiety than boys adolescents with better prognosis more worry about changed appearance than adolescents with a worse prognosis (N =12). Findings shows that ratings of prevalence, levels, and aspects perceived as the worst are not necessarily in a correlation that adolescents scoring in the clinical range are in the minority, and that the adolescents experience reduce physical and mental well-being. Results imply that a distress aspect has a high prevalence does not necessarily mean that it is rated as highly distressing.

2.8 Psychiatric disorders among chronic illness disorders

Childhood Asthma is a serious and vexing problem for many children and their families. Asthma, like most syndromes, has many symptoms and potential causes and effects. Studies have shown that pediatric asthma is associated with psychiatric disorders, but the specificity and temporality of these relations is not well known. Ortago, et al (2002) this study examined the associations between any and specific psychiatric disorders and both childhood asthma and other childhood chronic illnesses. The study used the Methods for the Epidemiology of Child and Adolescent Mental Disorders data, a four-site, community-based study of 1,285 pairs of youths and caretakers. Psychiatric disorders were assessed using the Diagnostic Interview

Schedule for Children Methods for the Epidemiology of Child and Adolescent Mental Disorders was also used to assess individual characteristics, parental reports of asthma, and other chronic illnesses. Asthma and 'other' chronic illnesses were associated with different psychiatric disorders. In particular, having a history of asthma was associated with having an anxiety disorder, after adjustment for potential confounding, but was not associated with having an affective disorder. Having a chronic illness other than asthma or cancer was associated with having any affective disorder and dysthymia but not anxiety disorder. These results call for more mechanistic research that explores the specific relations between childhood anxiety disorder and asthma and between affective disorder and other pediatric chronic illnesses.

This community-based study observed higher proportions of asthma among the Puerto Rican sub sample compared with children from the New York, New Haven, and Atlanta sites, but being from Puerto Rico did not mediate the relation between asthma and anxiety disorder. Further, this study suggests that the relation between pediatric asthma and psychiatric.

In this study, approximately half of the children with asthma and other serious chronic illnesses lived in low-income households. Finally, the finding that children with severe asthma have significant odds of having anxiety disorder and that this association does not extend to children with other chronic illnesses, raises several unanswered questions. Results found that a total of (15%) children were reported to have had a history of asthma.. Comparisons of mental illness were made between children with and without a history of asthma. Children with a history of asthma were more likely to have any anxiety disorder, simple phobia, separation anxiety, and overanxious disorder

than children without a history of asthma and no differences by history of asthma were found for affective disorder or disruptive disorders. (Mcquaid et al., 2000; Perrin et al., 1992) and psychiatric disorders (Bryant and Panasetis, 2001; Jackson et al., 2001);

Krister, et al (2004) the study aimed to compared the incidence of disease-related disease symptoms of children with cancer and diabetes and their family. A total of 675 of children with cancer and parents, and children with diabetes and control subjects were assessed for 11 distress symptoms clusters. Patient and control parent mean differences were tested by 2-tailed t. tests; illness group were compared by means of analysis of variance. Distress variations as a function of time since diagnosis were examined by regression analysis. The results was childhood illness depend and time passed since diagnosis, symptoms profiles verify the need for psychosocial attention at the initial shock after the cancer diagnosis and indicate long-term consequences for many parents. in pediatric diabetes, the persistence or intensification of distress over time is of specific clinical relevance. Annex 8.

2.9 Mental health problems among Palestinian children

World health organization (WHO) defined health as a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity. Mental health and well-being have nearly always had lower priority than physical disease, despite their significant impact on mortality and morbidity.

Palestinian children constitute 50% of Palestinian social and the state of the children has always worse than that of the Palestinian community in which they live (Abu Hein 1997).

About mental health problems Thabet, (2000) in his study was include (322) child (169) female, and (153) male found that 75% from children suffered 63% neurotic problem, 56.5% worries, 24.6% lees concentration.

Other study of conducted by Thabet and Vostains from (1999-2000) found the level of mental health problems among children's from age "6-11" years are 26%. The study revealed high rates of post traumatic stress reactions in children of primary school age that had experienced war.

A study of (Quota et al 1995) of the relation between the level of traumatic experience, the degree of active participation in the Intefada, cognitive and emotional responses among 108 Palestinian children of "11-12" years of age in the Gaza Strip showed significant results.

The highest level of neuroticism was found among active boys who were experience (Quota et al 1995).

According to a study conducted in Gaza to investigate the rate and nature of anxiety symptoms and disorders in children, and their relation to social adversities (Thabet et al 1998), children reported high rates of significant anxiety problems 21.5%. Anxiety problems, particularly negative conditions, increase with age and were significantly higher among girls, low socioeconomic states was the strongest predictor of general mental health problems and living camps was strongly associated with anxiety problems.

National institute of mental health in US reported that (10%) of general school age suffered from behavioral disturbances and there is at least 1/4 million of children's suffered from mental health problems (Elmati 2001).

About the psychiatric disorder among cancer children in Gaza, there is no study measure the anxiety, depression and PTSD (2001).

Summary

Psychiatric disorder is result of an interaction between the child's constitution, experience, and environment (family, peers or school) Thabet A (1996). So it is very important to give attention for these cancer children. Mental health is very important to complete cycle of health as WHO define health as not merely the absence of disease or infirmity, but rather, a state of complete physical, mental and social well-being (WHO, 2004).

Today mental and physical illnesses are influenced by a combination of biological, psychological, and social factors; diagnosis and treatment with cost-effectively. From the sum of our understanding people with mental or behavioral disorders today have new hope of living full and productive lives in their own communities.

This chapter highlighted to the background of study, subject, problem, objective, study questions and the rule of psychiatric disorders particular anxiety, depression and PTSD in cancer children by scientific methods.

Chapter (3)

Conceptual Framework

Introduction

In this chapter we will define cancer, anxiety, depression, posttraumatic stress disorder, types, symptoms, causes and treatment related to the literature review.

3.1 Cancer in children

3.1.1 Definition and characteristics of cancer

Cancer in children, rather than being a single entity includes a heterogeneous group of conditions, the common characteristics being a proliferation of malignant cells. Hematological malignancies involving the blood-forming tissues (i.e. Leukemia and lymphoma) account for approximately half of the cancer diagnosis, tumors of the brain and central nervous system make up the second-largest group, and the tumors affecting specific tissues and organs systems, such as bone and kidney, come in third (Dolgin and Jay 1989).

Cancer is a complex of diseases arising from alterations that can occur in a wide variety of genes. Alterations in normal cellular processes such as signal transduction, cell cycle control, DNA repair, cellular growth and differentiation, translational regulation, senescence, and apoptosis (programmed cell death) can result in a malignant phenotype, (Worth, 2000).

While comparatively rare, cancer accounts for a large number of disease-related deaths in persons less than 16 years of age, however, there has been a heartening increase in survival rate. The introduction of chemotherapy in the 1970s, for example reduced the relapse rate for 80 to 90 percent to just 10 percent (Powers, et al, 1995).

Treatment of acute lymphoblastic leukemia is a heroic undertaking involving four phases as follows.

The first phase is designed to eliminate all evidence of leukemia cells. This is followed by central nervous system prophylaxis such as brain radiation therapy. Next comes a consolidation phase designed to eliminate leukemia cells that may have developed drug resistance, and finally a maintenance phase lasting 2 to 3 years.

Many of these procedures are painful, involving finger sticks, intramuscular intravenous (IV) injections, lumbar procedures (Spinal Tap) and bone marrow aspirations (removal by suction).

Moreover, the side effects of treatment are themselves noxious (e.g. loss of hair, pain) or socially embarrassing (e.g. loss of hair, weight gains) (Weaner, & Kerig, 2000).

3.1.2 Children coping with procedural pain

How well the child copes with the pain involved in treatment depends on a number of factors in the child, in the family, and the medical staff. Some of these factors are proximal in that they come into play in connection with the procedures themselves, other are distal in that they serve as general background factors (Verni et al 1995).

Interpersonal factors

Children's reactions to painful procedure depend on their ability to cope with the distress involved. An encouraging finding is that 25-30 percent of children cope well with the pain. Coping does not mean an absence of distress, rather, the children see the anxiety and pain as manageable though unpleasant.

The ability to cope with distress is, in turn, a function of a number of distal factors. These include the children's general levels of fearfulness and counterbalancing coping mechanisms, such as the ability to divert their thought away from the pain or to tell themselves that they can "take it" some children are sensitizers "approaches" who cope by actively seeking information as a means of preparing to experience pain others are repressors "avoiders" who avoid information and deal with threat by not thinking about it, either rationalizing or denying its potential stressfulness. However the procedures become more distressing, as in the case of the girl being given information before a procedure that she wanted to shut her eyes and scream just do it (Weaner, & Kerig, 2000).

Intrapersonal factors

Children's reactions to procedural pain are significantly influenced by parental behavior, as empathy, reassurance and apologies even the procedure does with best intentions are of little help the child on the other hand providing specific coping mechanisms. Distal family factors serve as a background to parental behavior in medical situation as a positive marital and parent-child relation, good support, and no under stress increase, the chances of helpful parental behavior.

Staff behavior

Medical staff may be more or less competent in performing procedures, have different degrees of confidence or anxiety and have different levels of interpersonal skills as well as different personalities. All these factors will serve either to make the situation more (Weaner, & Kerig, 2000).

3.2 The Acute Leukemia

Acute Leukemia involving myeloid precursors (white cells, red cells, and platelets) is known as acute myeloid Leukemia (AML), and Leukemia involving cells of lymphoid lineage is known as Acute lymphoblastic Leukemia (ALL). Acute Leukemia is characterized by a rapid clinical course and requires immediate treatment. Untreated acute leukemia is uniformly fatal, with a median survival time less than 3 months, with the available current treatments, most patients will achieve a complete response (CR). May have a prolonged survival, and some will be cured (Abraham and Allegra 2001).

3.2.1 Etiology and risk factors

Report by Abraham and Monaphan (2001) for most cancer acute Leukemia, the etiology is unknown, but there are some factors as the following:

1. Ionizing radiation:-

It is the most conclusively identified leukemogenic factors in human, children exposed to atomic bombs in Japan had 20-fold incidence of AML and CML that peaked 5-9 years after the explosion.

2. Chemical agents' occupational chemical exposure has been associated with higher incidence of AML.

High-dose occupational benzene exposure (e.g. petroleum products and leather tanning in the third world countries) increase the risk of AML.

3. Viruses: Retroviruses like human T-cell lymphoma virus.

4. Genetic disorder: Blood syndrome, Fanconi's anemia, Diamond- Black fan anemia, Kostmann's syndrome and Down syndrome.
5. Acquired disorders: Myelodysplastic syndrome (increased risk for AML) and primary thrombocytosis (rarely).
6. Secondary Leukemia: prior chemotherapy increases the risk of Acute Leukemia, and 90% of these are AML.
 - Chemotherapy agents that can cause secondary Leukemia.
 - Cytogenetic abnormalities.
 - Radiation treatment with or without chemotherapy.

Clinical features (signs and symptoms)

According to all manifestation, there are the following symptoms:

- Anemia, leading to fatigue and shortness of breath.
- Thrombocytopenia, cancer bleeding and easy bruising.
- Neutropenia and increased susceptibility for infection.
- Bone pain from myeloid expansion.
- Infiltration of other organs and soft tissues.
- Leukocytosis increased (WBC) of > 50,000/ul.
- Disseminate intravascular coagulation (DIC).

3.2.2 Initial diagnosis of Leukemia

- History and physical examination.
- Complete blood count with differential count.
- Examination of the peripheral blood smear.
- Coagulation studies (PT, APTT and Fibrinogen).

- Serum electrolytes, chemistries with uric acid, calcium and phosphorus.
- Hepatitis Band C and human immunodeficiency virus (HIV).
- Bone marrow aspirate.
- Lumber puncture in all patients with ALL and AML.
- Complete tomography (CT) of the chest and abdomen.

3.2.4 Epidemiology of acute lymphatic leukemia

In The United States, annual incidence of acute Leukemia is 4/100.000 population (AML 2.5 and ALL, 1.3/100.000).

Worldwide incidence is similar to that of the U.S. 80% of ALL is seen in children, and only 20% of the cancer reported in adults.

Palestinian Cancer Registry (PCR) reports that in Gaza strip among age under 15 years (21.27%).

The incidence rate per 100.000 children were 13.2, (15.5 in male and 10.9 in female) of total hematological malignancy cancer under the age of 15 years old in Gaza strip lymphomas 27.3% of total cancer (30.7% in male and 27.8% in female).

3.3 Anxiety

Anxiety is something everybody has only some of us have the rotten luck to be sick with it .This group of disorders include those with primary clinical phenomena of excessive fears and worries , phobic avoidance , generalized vigilance and anticipatory anxiety , and panic attacks in which autonomic symptoms are coupled with a subjective sense of overwhelming dread . This may include people with more severe

cases of separation anxiety disorder , up to half of whom may have longer-lasting problems , and chronically anxiety children of affectively ill parents .(Keller et al , 1992).

3.3.1 Definition of anxiety

Anxiety is the uncomfortable feeling of dread that is a response to extreme or prolonged periods of stress. It is rated as mild, moderate, severe or panic (Kalman and Waugh Field 1993).

World health organization, WHO (2001) defined anxiety as one of the feelings all of us experience when we are under stress, physical, social, economic and psychological. Anxiety results in a feeling of impending doom, fear, (which can be intense), dryness of mouth, sweating, restlessness, racing heart, butter flies in the stomach, itching and tingling all over the body, shortness of breath, having to visit bathroom repeatedly, inability to concentrate, make decisions, carry out work, eat a sleep.

Anxiety defined by (Livingston, 1996) as the emotional uneasiness associated with anticipation of danger. It is usually distinguished from fear, the emotional response to objective danger, although the physiologic manifestations are the same.

Anxiety characterized by intense negative affect, associated with an undefined threat to one's physical or psychology self-patients use words such as tense, panicky, terrified, nervous and apprehensive. Additionally anxiety characterized by somatic, cognitive, behavioral and perceptual symptoms (Sadock and Sadock, 1999).

Anxiety: a state of psychic distress which, according to Freud, occurs when the ego loses its struggle to reconcile the divergent demands of the id, the superego, and reality, (Wortman 1992).

Karin Houranis (1950) defined anxiety as an emotional response to danger facing the basic personality content.

Wasbbeen, (1956) defined anxiety as fear or bad mood from Terror or hope in the future and the conflict is type from powerless anxiety.

Kaliy and Abu Allam, (1974) anxiety as a state of irritable and restless and crisis which cause to the person state of suffering phenomena as disappear if the symptoms appear on the surface of mental life for person.

Richard Sween, (1977) defined anxiety as a state of unpleasant emotionally as a result of person of danger, and the feeling of irritability and frustration banding with identity.

Mokhamar, (1983) defined anxiety as the state of expecting for happening of a dangerous action will be occur at any time.

Thabet, (1996) defined anxiety as the individual response to a danger that threatens from within the form of a forbidden instinctual drive that is about to escape from the individuals control.

Anxiety is the state of being uneasy, apprehensive, or worried about what may happen. It is also described as a feeling of being powerless and unable to cope with threatening events characterized by physical tension (Lark 2002).

Stress produces anxiety; stress is everywhere in our society. Most often, stress associated with negative situations. A stressor is any person or situation that produces anxiety responses, Stress and stressors a different for each person.

Anxiety may also be influenced by one's culture, it may be acceptable for some people to acknowledge and discuss stress, but others believe that one should keep personal problems to oneself.

3.3.2 Types of anxiety disorder

Anxiety disorder referred to a group of illness, generalized anxiety disorder, panic attack, phobias and PTSD (APA 2004).

3.3.3 Generalized anxiety disorder (GAD)

In (GAD), the anxiety referred to "excessive worry" or 'sever stress". It self is the expressed symptoms.

The DSM-TV requires that this excessive worry 6 months and the patient must show six or more to be considered "anxious", some behaviors that may be present in the anxious person include restlessness, fatigue, feeling "on edge" or frightening very easily. Patient may have sleep disturbances also. The symptoms may include, muscle aches, shakes, palpitations, dry mouth, nausea, vomiting hot flashes, chills, polynria, difficulty swallowing (APA 2004). Annex 2

Phobia (school phobia)

School phobia is defined as an irrational dread of some aspect of the school situation accompanied by physiological symptoms of anxiety or panic when attendance is imminent and resulting in partial or total inability to go to school (Kearney et al (1995) there is evidence that school phobia "school refusal" may be due to a fear of separation from the caregivers.

The prevalence of school phobia is estimated to be 1 percent of the general population and 5-7 percent of clinically referred children (Blagg and Yule, 1994). And the mean age is below 10 years. Annex 3.

Panic disorder

Panic is a state of extreme fear that cannot be controlled. It is also referred to as panic attack.

DSM- IV criteria for panic disorder requires 4 at least of following possible symptoms.

- (1) Fear (usually of losing control of oneself or of "going crazy").
- (2) Dissociation (a feeling that it is happening to someone else or not happening at all).
- (3) Nausea, (4) Diaphoresis, (5) chest pain, (6) increased pulse, (7) shaking, (8) unsteadiness, (9) shortness of breath (APA 2004). Annex 4.

Separation Anxiety disorder (SAD)

The core characteristic of separation anxiety disorder is excessive anxiety over separation from people to whom the child is attached, typically the parents.

The DSM-IV criteria as listing symptoms of 5-8 year olds are excessive worry about harm befalling an attachment, nightmares involving separation, and school refusals because of separation anxiety 9-12 year olds are distressed at separation itself and somatic complaints such as headaches stomachaches (APA 2004).

The prevalence of SAD is found in 2 to 3.5 % of general population and in 10% of the clinical population. It is the most prevalent of the all anxiety disorder and ranks third among childhood disorder in general (Tonge, 1999).

According to Socioeconomic status Children with SAD tend to come from the lower class, and their parents have lower than average education. The families tend to be caring, close and the incidence of SAD in children seems to be higher in mothers who have a panic disorder (Crowell and waters, 1990).

3.3.4 Epidemiology of anxiety disorder

This disorder appears to be equally common among boys and girls; the peak incidence is around age 11. Compared to other anxiety disorder, children with separation anxiety tend to come from a slightly lower socioeconomic class (last et al 1987). Costello (1989) summarized several recent studies, reports a prevalence of 3.5-5.4%.

Rates of any psychiatric disorder range from 9-22% (Costello 1989 and Lavigne et al 2006), and extend to 42% when children with sub-threshold diagnosis are included (Costello and Shugart 1992). Epidemiological findings show that anxiety disorders are

ales removable common in this setting. Costello (1989) reported that the prevalence rates of anxiety disorders among children 7-11 years old, ranged from 1.0-9.1% simple phobia =9.2%, separation anxiety =4.1% overanxious disorder =4.6%, avoidant disorder =1.6%, social phobia =1.0%.

3.3.5 Causes of Anxiety in childhood

There are three kinds of anxiety, reality, neurotic and moral. Reality anxiety is the fear of danger from the external world, and the level of such anxiety is proportionate to the degree of real threat. Neurotic and moral anxiety is evoked by threats to the "balance of power" within the person. They signal to the ego that unless appropriate measures are taken, the danger may increase until the ego is overthrown. Neurotic anxiety is the fear that the instincts will get out of hand and cause one to do something for which one will be punished. Moral anxiety is the fear of one's own conscience. People with a well-developed conscience tend to feel guilty when they do something contrary to their moral code. When ego cannot control anxiety by rational and direct methods, it relies on unrealistic ones—namely, ego-defense behavior (Corey Gerald, 1996).

The child theories of how minds work—what makes the child worry, and how does the child enhance good feeling about self through fantasy, imaginative play, and direct action—lead to decreased egocentricity and increased self-observation (Marans et al, 1993c).

3.3.6 Psychoanalytic Theory

Sigmund Freud, the founder of psychoanalysis and psychoanalytical psychotherapy, described psychoanalysis as a procedure by which mental process is investigated a neurotic disorders are treated, as well as abode of information that describes human behaviors (Weis and Benoit, 1989).__Psychoanalysis, which has deterministic, biological foundation, is based on the premise that behavior is largely beyond the real arm of conscious awareness.

Anxiety and repression are key focused on tension reduction and instinctive driver that are modified during the psychosexual developmental process

Frauds second (1926-1959) theory was formulated in the light of his structural theory was formulated in the light of his structural theory to respond with signal of anxiety to an external or internal threat or anticipated threat (i.e. danger situation) against which the individual felt helpless. The signal anxiety might never reach consciousness, but the unconscious ego presumable would recognize the danger, regulate the anxiety and defense and mobilize defense. If this first major response to the signal anxiety (i.e. the mobilization of various defense mechanisms) failed to inhibit or sufficiently control the anxiety, panic would ensue. The typical danger situations were viewed developmentally and consisted of loss of the mothering person, loss of that persons love, fear of bodily harm, and fear of guilt, Punishment or abandonment, (Lewis, 1996).

Freud's psychoanalytic system is a model of personality development, a philosophy of human nature, and a method of psychotherapy.

Focused on the role of the unconscious, and developed the first therapeutic procedures for understanding and modifying the structure of one's character.

According to the psychoanalytic view, the personality consists of three systems: the id, the ego, and the superego. These are names of psychological structures. One's personality functions as a whole rather than as three discrete segments. The id is the biological component, the ego is the psychological component, and the superego is the social component. From the Freudian perspective, humans are viewed as energy systems. The dynamics of personality consists of the ways in which psychic energy is distributed to the id, ego, and superego. Because the amount of energy is limited, one system gains control over the available energy at the expense of the other two systems. Behavior is determined by this psychic energy, (Corey Gerald 1996).

The fundamental issue in psychic development and to develop defenses in an adaptive fashion, defenses are aggression. The two key phenomena in psychoanalysis are transference and resistance. The focus on defenses, mechanisms and intrapsychic conflict, which are attributed to an imbalance among the id, the ego, and superego. The techniques of psychoanalysis used with adolescents differ from those used with adults, may be limited to facilitate emotional development (Gray, 1979), with the goal keeping anxiety to a minimum, performed by a variety of mental health professionals.

3.3.7 Behavioral Theory

Lazarus focused on function of occurrences outside the individual while psychoanalytical approach focused on inner processes. Resting on learning theory, view of behavior as function of learned responses that have occurred as result of a combination of reward and punishment, behaviors that are rewarded remain part of the repertoire of individual. Behavior view anxiety as learned that can be unlearned (Turner, 1999).

3.3.8 The Biologic Theory

The biologic theory sees this situation differently, it consider the sympathoadrenal (Fight or Flight) responses to stress and observes that the blood vessels constrict because of epinephrine and nor epinephrine have been released and blood pressure arises. If the body adapts to the stress, hormone levels adjust to compensate for the epinephrine-nor epinephrine relapse, and the body functions return to homeostasis. If the body does not adapt to the stress, then the immune system becomes challenged, lymph nodes increase in size, chances for heart and kidney failure increase, and death may occur...

Genetic Factors

Genetic factors see to have some relevance as rich factors for developing anxiety disorder. In studies of identical twins, the likelihood of both twins having an anxiety

disorder if one affected is statistically significant "greater than 30%" fraternal twins, who do not have the same genetic makeup, (Lark 2002).

Genetic predispositions to anxiety disorders are well established for some adult disorders, and there is some evidence that this holds true for childhood anxiety disorder (Last et al 1987). According to (Gorman 1989) report that Amino-butyric acid, serotonin, and nor-epinephrine appear to be neurotransmitters most closely associated with anxiety phenomena in the central nervous system, epinephrine release, dysfunctional autonomic regulation, variation in response to respirator carbon dioxide levels, and the generalized stress response are some of the peripheral physiologic mechanisms associated with anxiety.

3.4 Depression

The term depression has been used and refers to symptom, syndrome, or nosological disorder.

The symptom of depression is a mood characterized by feelings of sadness, gloom, misery, dysphoria or despair. It is typically is a transient state that is experienced by most people at various points in their lives and by itself is intense, persistent, and it occurs in combination with full symptoms complex, and it syndrome of depression, then it is considered to be clinically significant.

3.4.1 Definition of Depression

Tuner (1999) describe depression is a term used everyday language to connote a well-known dysphonic feeling state. A psychiatric depression is referring to a mood, a symptom or a syndrome. Another definition of depression is a cluster of symptoms and behavioral disturbances such as feeling blue, sad, and unhappy in response to difficulties and disappointment of everyday life, symptom is usually more intense, prolonged, varied, or inappropriate to the situation than the common dysphonic mood state.

Melvin (1996) defined depression as a mood characterized by feeling of sadness, gloom, misery, dysphonic, or despair and it is considered to be significant of depression are sleep disturbance, loss of appetite, difficulty concentrating, low self-esteem, guilt, low energy, psychomotor changes and suicidal ideation.

WHO (2001) defined depression experience feeling blue, low and worried at times but if these feelings become pervasive, being there all the time, and intense. It can include disturbances of sleep, appetites, feeling self-guilty and worthless and deserving of punishment, feeling weepy, and complaining of difficulty with memory .In sever case repeated finding it difficult to concentrate suicidal thoughts and plans can be there.

The most common presentation of depressive illness is in the form of vague bodily complaint like aches, pains all over the body weakness, tiredness, and feeling of heaviness in the head, gas circulating in the stomach, restlessness and palpitations.

Lesperance et al (2000) defined depression is not bad attitude, and it is not simply being pessimistic. It is not feeling sad or down and moody for a few days. It is more than transitory psychological distress. Depression is a consideration of its similarities and differences with the experience of grief. Whereas a sense of loss, despair, and sadness and withdrawal from usual activities are normal following the loss of a loved person, they are also symptoms of depression. However, experiencing and expressing sadness during bereavement is not only normal, but also probably necessary. It is part of the healing process facilitating the psychological separation imposed by the death of a loved person. Similarly, it can also be appropriate to be sad for some period of time following the loss of something significant other than a person; for instance, health, social status, long life expectancy. However, in depression, the period of sadness or lack of interest is abnormally interest, or abnormally long, and interferes with a variety of personal, interpersonal, and social activities.

3.4.2 Depression in children

Depression in children is as confusing a diagnosis as it is in adults. As in adults "depression" can have there meaning:

- 1- A normal lowering of mood i.e. an expected response to a certain situation.
- 2 An abnormality of mood that constitutes a specific disorder.
- 3- An illness characterized by a depressed mood qualitatively different from usual with a recognized an etiology and prognosis.

The concept of lass namely the loss of a loved person in subsequently as we shall see, each kind of loss has a distinctly different origin in normal development, and in both

cases psychopathological depression can be viewed as an exaggeration of the normal pattern of response. Thus loss serves to integrate conceptually what might otherwise be a bifurcated set of data.

However, this conceptual integration is too simple to encompass the complexity of etiological factors. Lengthy separation and death will concern us here. Next, we do not mean to imply that depression is the only response to loss. As we shall soon see depression is closely associated with both anger and anxiety. And, finally, we do not mean to imply that depression results exclusively from loss since it may have multiple roots. One possibility is that having a depressed mother puts the child at risk for becoming depressed. We will review the literature concerning this possibility. First, however, we will present relevant descriptive information concerning depression in middle childhood and adolescence before turning to infancy and the concept of loss.

3.4.3 Prevalence of depression

Depressive symptoms such as tearfulness is common in children and despondency in children was recognized by writers in the 17th century, but the expression of unhappiness by itself does not constitute a depressive illness. It was not until the early 1900's that manic –depressive psychosis was reported in children before puberty. This was followed by the recognition of specific forms of depression in children such as "anaclitic depression". In the Isle of Wight study, depressive symptoms were as common in all the three major childhood disorders, and there was poor agreement between teachers and parents as to whether a child was miserable or not. It is now

more accepted that children do experience depression as a mood change and the disagreement on whether children can suffer from a depressive disorder is less.

Prevalence of Depression in Oncology Patients

Multiple studies have attempted to measure the prevalence of depression in palliative cancer patients through clinically reported cases as well as patient questionnaires. Hotopf, and colleagues examined 46 palliative care studies that attempted to measure depression and found that the prevalence of depression in these studies varied from 5.6% to 32% and the most widely used assessment of depression was the Hospital Anxiety and Depression Scale (HADS). In a study of 142 terminally ill cancer patients, the authors found that 17.6% of the patients were clinically depressed, using the most conservative cut-off point of the HADS, and the prevalence increased to 38% when borderline cases were included. Of the 17.6%, or 25 patients, only 8 were currently taking antidepressants.[9] Patients were also asked if they wished for an early death and if they were taking antidepressants. Only 2 of the 142 patients indicated that they wished for an early death; however, of these two, only one of them was being treated with antidepressants, (Little, et al 2005).

Depression in middle childhood

Depression, like anxiety and anger, is a normal phenomenon experienced by most people. Some individuals are moody "by nature", having a generally gloomy outlook on life. Rejection and despair, loss of appetite and fatigue, viewing oneself as worthless and life as futile are expected reactions to situations such as failure to achieve a crucial goal or loss of a loved one. Thus psychopathology is a matter. ..
Annex 6.

3.4.4 Causes of depression

3.4.5 The Organic Context

The evidence that organic factors play an important etiological role in depression is more extensive and definitive. Family history studies of depressed children and adolescents and studies of offspring of depressed adults show a genetic component similar to that found in adults; for example, children of depressed are at considerable risk for developing depression themselves. Unlike research on adults, neither twin studies nor adoption studies have been reported, both of which are better able to disentangle the relative influence of heredity and environment than are family studies. In the former, monozygotic and dizygotic twins are compared for the incidence of depression, and, in the latter, the correlation between depression in the biological and adoptive parents is compared. In adults, the risk of depression is higher in monozygotic twin pairs, while adoptive studies support the importance of both genetic and environmental factors.

Biochemical research

Biochemical research with adults indicates a hormonal imbalance as an etiological agent. Since hormonal production regulates mood, appetite, and sexual interest, all of which are adversely affected by depression, such a relation is to be expected. The particular imbalance involves the hypersecretion of the hormone cortisol. Evidence for hypersecretion comes from the dexamethasone suppression test (DST). Dexamethasone is a drug that, in normal adults, suppresses the secretion of cortisol for at least 24 hours. Depressed individuals, however, resist the drug's effect, their cortisol returning to high levels within a 24- hour period. However, the DST response may be variable and not specific to depression, since it is found in people with schizophrenia and obsessive-compulsive and eating disorders.

Psychosocial factors

People with certain characteristics of permissive thinking, low self -esteem, a sense of having little control over life events, and a tendency to worry excessively-are more likely to develop depression. The effect of stressful events or interfere with taking action to cope with or with getting well. it appears and develops as a negative thinking pattern in childhood and adolescents.

Classification of depression

Before any classification of depression a distinction must be made between the state of clinical depression as a pathological and depression as a basic affect, NIMH (2000) depression was classified as the following.

3.4.6 Major depression

The DSM-iv defines a major depressive episode as a syndrome in which of least five of the following symptoms have been present during the same 2week period.

- Depressed or irritable mood.
- Diminished inters or loss of pleasure in almost all activities.
- Sleep disturbance.
- Weight change or appetite disturbance (failure to achieve expected weight gain in children or loss of body Weight in month).
- Decreased concentration.
- Suicidal ideation or thoughts of death.
- Psychomotor agitation or retardation.
- Fatigue and loss of energy.
- Feelings of worthlessness or inappropriate guilt. . Annex 5.

Clinical studies of psychiatric disorder during cancer treatment have largely focused on depression. Kashani and Hakami (1982) the study was probably on the first to

address categorical psychiatric diagnosis in a pediatric oncology population, as a major depressive disorder was diagnosed in 17% of the study population compared to 1.9% and 4% in child and adolescent control study.

Dysthymic disorder

Dysthymic disorder can be diagnosed when there is a depressed or irritable mood that lasts a year or longer and the affected individual is never symptoms free more than 2 months. And characterized by:- Appetite change, sleep change, decreased energy, low self-esteem, difficulty making decisions or poor concentration and feeling of hopelessness.

Dysthymia should not be diagnosed if there is a major depressive episode during the first year of disturbance, if there is a history of manic, hypomania, or mixed episode.

Annex 9.

Dysthymia often starts in childhood, adolescence or early adult life; it is often referred to as depressive personality children who have dysthymia and subsequently develop a major depressive episode have a so called double depression (Melvin 1996).

The dysthymic children are at risk for developing depression and mania on follow up (Kovacs et al 1984).

3.4.7 Theories of Depression

3.4.7.1 Psychoanalytic theory

Sigmund Freud is the leader of psychoanalysis school; psychoanalytic conceptualization of depression was focused on the role of unconscious and development stages and modifying the structure of one's basic character. Depression is regarded as a disorder due to the imagined or real loss of a valued or loved "object" through separation, rejection, or death. The object is the individual who is significant in the early childhood life as the parents, especially the mother or caregiver, that leads to depression, especially in early childhood.

3.4.7.2 An Attachment Theory

As evidence has accumulated regarding a link between insecure attachment and depression in children and adolescents; children who internalized an image of themselves as unworthy and others as unloving are more vulnerable to the development of cognitive, emotional, and biological processes that are associated with depression (Cicchetti and Toth 1998).

Attachment theory distinguishes between two different kinds of depression. Blatt and Homann (1992) the first dependent depression, is characterized by feelings of loneliness and helplessness as well as fear of abandonment and being left unprotected. Individuals with dependent depression cling to relationships with others. The second, in contrast, self-critical depression is characterized by feelings of unworthiness, inferiority, failure and guilt. Individuals with self-critical depression have extremely high internal standards, resulting in harsh self-criticism.

Harter's (1990) research revealed two groups of depressed children and adolescents. In the large group depression was due to low self-esteem, while in smaller group it was due to the loss of significant person.

3.4.7.3 Cognitive Theory

This theory center on cognitive triad consisting of appraisals of worthlessness, helplessness and hopelessness Harter and Whitesell, (1996) the concept of Worthlessness is good evidence of a relationship between childhood depression and feelings of low-self-worth.

Harter (1990) finds a strong relation between self-worth and mood, in the children between 8 to 15 years of age. Longitudinal research has also demonstrated that low self-esteem is a specific predictor of depression (Lewinsohn, Gottib and Seebley (1997). The concept of learned helplessness, Seligman and Peterson's (1986) has cognitive and motivational components. The individual learns that responding is futile; this knowledge reduces the motivation to respond. (3) The concept of hopelessness, Abramson, Seligman and Teasdale (1978) contribute to our standing of helplessness dimension of attribution theory, when uncontrollable events are attributed to characteristics of the individual, rather than to external agents, self-esteem diminishes as helplessness increase. Rose and Abramson (1991) negative events during childhood-such as traumatic loss, maltreatment and guilt challenge the child's self-esteem, the child's own level of cognitive development, and the reactions of events.

Beck's (1967) explanation postulates that depressive cognitive processing is characterized by (1) generalized negativistic evaluation of the self, the world, and the future (2) well organized schemata which form the basis of negativistic information selection and interpretation (3) systematic errors in the processing of information such as arbitrary inference.

The negative cognitive schemata effect not only the present but also the child's future orientation toward the world. Dodge (1993), schemata are stable mental structure that incorporates children's perceptions of self, their experiences in the past, and their expectations for the future. Moreover, our understanding of cognitive development makes it difficult to picture the cognitive triad of worthlessness, helplessness and hopelessness in infancy. Poise and Abramson (1991) while the onset of depressive attribution style may indeed develop may early childhood Wenar and Kerig (2000).

Life stressor

This model assumes life stressors or changes in the environment that necessitate readjustments cancer depression. Some have theorized that depressive symptoms in children are often a rejection to family turmoil (Lefkowitz and Burton, 1978).

Poznanski and Zrull (1970) reported that high incidence of parental aggression, marital discord and scapegoat or rejection in the illness or the illness contributed the manifestation of the stressor, so a biosychosocial approach in treating the depression alleviated both the depression and coexisting problems. Nimh (2000) reported that sometimes the onset of depression is associated with acute or chronic physical illness.

Life stressors events in the occurrences of depression i.e. loss of parents and closed relationship, financial problems and change in academic or residential situation are specific events that are associated with depression (Turner 1999).

Family and social factors

The family environment may build upon these biological vulnerabilities. When parents, suffer from emotional disturbances, which are left untreated, their ability when a parent is depressed, she may be less responsive to the child, which in turn can precipitate depressive symptoms in the child (McKesson, 2002) family factors and parenting behaviors influencing levels of anxiety symptoms in children, existing theoretical models for children anxiety disorders stressors (Chorpita and Barlow 1998 and Mills, 1991).

Children of depressed mothers they need mental health services (Peterson and colloquies 1993) and approximately 40% of children of depressed mothers are themselves diagnosed with depression. It is not clear how the intergenerational transmission of depression from parent to child takes place. Depressed mothers are observed to be less psychologically available to their children and to make negative attributions to about child and behavior and to be less accurate in reading children's affect (Cicchetti and Toth, 1995).

Health mothers aid the development of emotion regulations by soothing their children and helping to build their competency. However, depressed mothers inability to modulate their own negative feelings states interferes with the ability to modulate their

children's mood. A seven-year longitudinal study by (Hops, 1992) shows stronger relationships between mother and daughter depressed mood than exists among other family factors and maternal depression is also associated with the development of other disorders in children, such as ADHD, anxiety, substance abuse, conduct disorder and predictive of a variety of poor outcomes.(Wenar, 1996).

3.4.7.4 Grief versus depression

Although depression is a clinical condition that is treatable and should not be considered a necessary or normal part of the dying process, the evidence suggests that depression is under diagnosed and under treated in the palliative care cancer population. There are several possible reasons for this. First and foremost is that common symptoms of depression such as decrease in appetite, fatigue, weight loss, and insomnia can be easily confused with common side effects of cancer and chemotherapy treatment and common physiologic changes due to the disease process (Little, et al 2005).

Second, depression can also be mistaken for grief and be overlooked. Preparatory grief is a normal reaction to the losses that one must face when dying. Palliative care cancer patients may grieve the future separation from loved ones, missed opportunities or experiences, and the loss of simple pleasures of living. When facing death, a person's self-image often drastically changes as the medical condition worsens during grief, a person must move through physical, psychological, and cognitive changes to reach acceptance of their losses Grief tends to come in waves, progresses, and eventually diminishes in intensity on its own. Patients who are grieving are usually still able to

feel pleasure and maintain a sense of hope. Patients suffering from grief may be agitated in the early stages and have fleeting thoughts of early death, but overall they are able to maintain a normal self-image. Proper support can assist with preparatory grief. Patients suffering from grief do not usually benefit from treatment by medications such as antidepressants or psycho stimulants (Little, et al 2005).

Depression is a clinical condition that is treatable and should not be considered a necessary or normal part of the dying process. Unlike grief, depression is a constant persistent feeling that has a major impact on a person's life. Depression commonly does not resolve on its own and will persist unless treated. Patients who are depressed may have feelings of worthlessness and low self-esteem. Depressed patients may also suffer from hopelessness and anhedonia (an inability to feel pleasure). Depressed patients often become socially withdrawn and agitated and may have strong wishes for early death. Research suggests that if depression is present, it is more likely to be associated with a desire for hastened death, suicidal ideation, and end-of-life despair. Depression can be effectively treated with counseling and pharmacotherapy, if diagnosed in time.

It is a common belief of patients that feelings of depression are a natural part of the cancer experience and must be tolerated silently. Patients may also feel that they are wasting their caregiver's time and will not mention their feelings, or may feel that they are somewhat to blame for their depression and may purposely hide it (Little, et al 2005).

3.4.8 Posttraumatic stress disorder PTSD

The concept of PTSD was first developing in relation to studies of adult reactions to major stress. Following the Second World War, there was four better understanding of the psychological nature of so-called battle fatigue, and as the dramatic and long-lasting psychological affects of the Vietnam War being to be recognized.

3.4.8.1 Definition of PTSD

PTSD is the development of characteristic symptoms following exposure to an extreme traumatic stress involving direct parasol experience of an event that involves actual or threatening death or serious injury, or other threat to one's physical integrity, or witnessing an event that involve death, injury, or violent death, serious harm, or threat of death or injury experienced by a family member or other classed associate (DSM-IV 2005).

Both the major system of psychiatric classification, ICD-10 (World Health Organization 1992) and DSM-IV (American Psychiatric Association 1987) have been reflected the increased awareness that major stressors can cancer serious morbidity, and how the PTSD may affect children of widely differing ages.

Posttraumatic stress disorder can occurred at any age, including childhood symptoms usually being within the first 3 months after the trauma, although may delay of months or even years, before symptoms appear. Frequently, the disturbance initially meets the criteria for acute stress disorder in the immediate after the trauma. The symptoms of

the disorder and the relative predominance of re-experiencing, avoidance and hyperarousal symptoms may vary over time.

3.4.8.2 Epidemiology of PTSD

Post traumatic stress disorder, is not only a problem for veterans, however although there are unique cultural-and gender-based aspects of the disorder, it occurs in men and women adults and children, Western and non-Western cultural groups, and all socioeconomic that the lifetime prevalence of post-traumatic stress disorder (PTSD) was 5% in men and 10% in women (Ithinte 1996).

Yule (1992) reported that the proportion with PTSD, as categorized on their total stress reaction index, scores, and girls scored significantly higher than boys on both scales, was 5% in the no exposure and 29% in the high group exposure.

Most studies have found evidence that child trauma survivors suffer from post-traumatic stress disorder (PTSD). Rates vary from 10% depending upon the status of the stressor, type and degree of exposure to the traumatic event, subjective appraisal of life threat and gender (Upwin 1993, Yule 1994).

History of post traumatic stress disorder in children

The concept of PTSD was first developing in relation to studies of adult reactions to major stress. Following the Second World War, there was four better understanding of

the psychological nature of so-called battle fatigue, and as the dramatic and long-lasting psychological affects of the Vietnam War being to be recognized.

Following The Aberfan disaster of 21 October 1960 In which a hug coal Tip slid down a mountain side killing 116 children and 28 adults lacey (1962) reported how 56 children guidance clinic over the following 4 years. Symptoms varied but the commonest were sleeping difficulties, nervousness, lack of Friends, unwillingness to go to school or out to play, instability. Some of the children too, had shown some of these symptoms before the disaster, but they were said to vary much worse after it (Ratter et al 1996).

Post traumatic disorder (PTCD), is a psychiatric disorder that can occur following the experience or witnessing, exposed to life-threatening events such as military combat disasters, terrorist incidents, serious accidents, or violent personal assaults like rape. People who suffer from PTSD often realize the experience through nightmares and flashbacks, have difficulty sleeping and feel detached or estranged and these symptoms can be severe enough and last long enough to significantly impair the person's daily life (Berliner, 1997).

PTSD is complicated by the fact that it frequently is co-morbid with other disorders such as depression substance abuse anxiety and other problems of physical and mental health (Kulka et al, 1990). Post traumatic stress disorder is also associated with impairment of the person's ability to function in social or family life, and including occupational instability.

Physiological versus psychological reactions

Reactions to major stress have both physiological components. Any major life-threatening experience may activate primitive Flight /Fight /Freeze mechanisms. In some individuals following some threats, these reactions seem to get stuck. The trauma is then relived at all levels, behavioral, emotional, physiological, and neuroendocrinological. The reactions involve many systems, including the release of nor-adrenaline from the locus coeruleus and endogenous opiates in the septohippocampal system (Googyer, 1990). A better understanding of these mechanisms may lead to better therapy, to prevent chronic reactions, this is demonstrated by Ornitz and Pynoos (1989) in their study of persisting startle reactions in child with PTSD.

According to DSM-IV the manifestation of PTSD the following

- 1- Per-experience of the original trauma may include intrusive recollections, Nightmares, Flashbacks and intense distress of reminders of the trauma.
- 2- Persistent may include increased arousal and sleep disturbance, irritability, concentration impairment, hypervigilance, exaggerated startle response; heightened physiological reactivity i.e. increased heart rate and sweating.
- 3- Avoidance responses to alleviate anxiety and emotional numbing Avoiding trauma-related thoughts and feelings, Avoiding trauma-related activities and situations, psychogenic amnesia, diminished interest in significant activities,

feeling detachment and estrangement, restricted range of emotion and sense of bleak future.

3.4.8.3Categorizing of PTSD

After the exposure to unusual traumatic event, the reactions of post traumatic stress disorder are started to arise on the victim, it is manifested by four main groups of behaviors and attitude that are expressed by the victim.

These groups of symptoms are:

- 1- Re- experiencing symptoms.
- 2- A voidance symptom.
- 3- Hyper-arousal symptoms.
- 4- Associated features.

Experiencing (intrusive) symptoms

Here, the traumatic event remains a dominating psychological experience that evokes panic, terror, grief, or despair which manifested in daytime fantasies, traumatic nightmares, and psychotic reenactments known as PTSD flashbacks which is uncommon in children (Friedman, 1996). These flashbacks are so strong that the individual thinks that he or she is actually experiencing the trauma again. When a person has a server flashback, he or she is in a dissociate state (APA, 1997). When this

occurs, the individual may actually start to act out the incident as if he or she was experiencing the traumatic event again.

Avoidance symptoms

Avoidance symptoms are characterized by emotional constriction or numbing – a need to avoid feelings, thoughts, and situations reminiscent of the trauma, a loss of normal emotional responses, or both (Long, 1997). These symptoms reflect the behavioral, cognitive, and emotional strategies used by PTSD patients in attempt to reduce their psychological response to the traumatic stimuli (Friedman, 1996).

Patient try to avoid all situations that might serves as stimuli for the traumatic event. When taken to the extreme, this may superficially resemble agoraphobic because the PTSD patient is afraid to leave the house for fear of confronting reminders of the traumatic event (Friedman, 1996). Dissociation and psychogenic amnesia are included among avoidant numbing symptoms by which individuals cut off conscious experience of trauma based memories and feelings.

Because PTSD patients cannot tolerate string emotions of any kind, they perceive only the cognitive aspects of psychological experience and not the emotional aspects. This "psychic numbing" acts as an emotional anesthesia and makes meaningful interpersonal relationships extremely difficult (Friedman, 1996; Long, 1997).

Hyper-arousal symptoms

Individuals with PTSD often act as though they were constantly by the trauma that caused their illness (Long, 1997). These symptoms most closely resemble those seen in panic and generalized anxiety disorder (Friedman, 1966). Although some symptoms such as insomnia and irritability are generic anxiety symptoms, hypervigilance and startle are more unique. The hypervigilance in PTSD may sometimes become so intense that it appears to simply be paranoia. The startle reaction of PTSD patients also has neurobiological for more on the neurobiological causation of PTSD.

Associated features

The person with PTSD may attempt to rid themselves of painful flashback, loneliness, and panic attacks by abusing alcohol and other drugs. These serve the purpose of blunting the patient's emotions and helping them to forget their trauma. Related, a PTSD patient may also show poor control over his or her impulses, increasing the risk of suicide (APA, 1997). Annex 7.

Pfefferbaum, (1999) found that, PTSD has been described in children exposed to a variety of traumatic experiences. Partial symptomatology and co-morbidity are common. A variety of factors influence response to trauma and affect recovery, they include characteristics of the stressor and exposure to it; individual factors such as gender, age, developmental level, psychiatric history, family characteristics, and cultural factors.

Hobbie et al (2000) pinpoint a number of possible reasons why the children with cancer experience PTSD:

- Frequent anxiety about their lives being in danger
- Reminders such as going to hospitals, hospital smells, etc.
- Life change from a "protective childhood environment" to "adult uncertainties"
- New health challenges such possible infertility, neurocognitive deficits, cardiac impairments, and/or second cancers
- Memories of particularly intensive treatment of the childhood cancer
- Incomplete understanding of what was happening to them and what could happen to them

The researchers point out that besides PTSD limiting the quality of life for these young adults, it could also threaten their physical health through avoidance of medical care.

Chapter (4)

Methodology

Introduction

This chapter will deal with the methods utilized for the collection of data to obtain the information to answer the research questions posed in chapter 1 and also with steps of implementation according to research plan such as study design, sampling, instruments used in the study data collection, data entry, and data statistical analysis.

4.1 Study design

This study based on case control design, it has been selected to investigate psychiatric disorders, (anxiety, depression and PTSD) among cancer children. Case control study is an observational study in which characteristic of one group exposed to an agent of changed (cases) compared with selected sample (control) the prime advantages of the case control study are practical, simple, logistic are easy and less expensive. Altman (1999) report that the basic strategy of a case-control study is to compare a group which has a practical outcome of interest (cases) with a control group (control) that does not have that outcome but often matches the first group with respect to select characteristics.

4.2 Setting of the study

The study was conducted in El Nasser pediatric hospital-oncology department in Gaza Strip. The cases control group was selected from the same hospital as inpatients and of the reception department.

4.3 sample and sampling

4.3.1 Sample size

The sample was of all cases coming to oncology department. The number was 50 cases (24 male and 26 female), and 52 case controls was sufficient for detection psychiatric disorder of two, with 90% power as significant at the 0.05 level.

Table 1 Distribution of population sample according to sex

Group		Sex		Total
		Male	Female	
Case	No.	24	26	50
	%	48	52	100
Control	No.	26	26	52
	%	50	50	100
Total	No.	50	52	102
	%	49.02	50.98	100

4.3.2 Sampling process

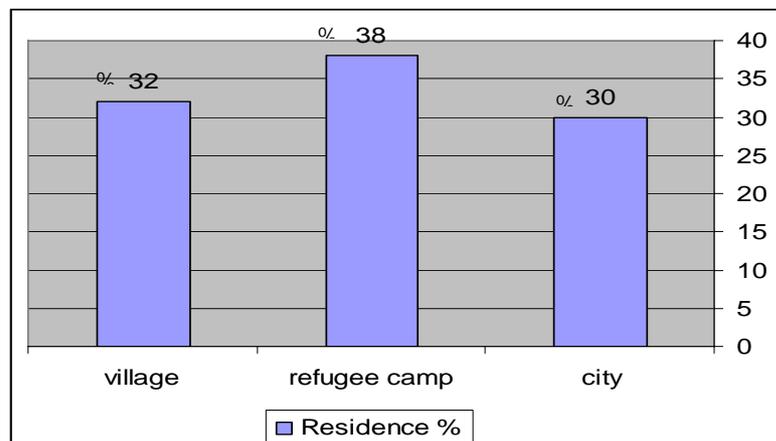
The sample was purposive sample taken from the El Nasser pediatric hospital in oncology department where all total 57 cases, 2 cases were mentally retarded, 2 cases complained from psychiatric disorders, (the 4 cases are excluded from the study) and 3 cases refused to fulfill the questionnaire. The total sample was 50 cases were available for pediatric hospitalization and follow up in out patient clinic in oncology department. A total sample was taken according to the information from the medical cancer registry in the same department concerning the number and all population resides in Gaza City, Middle Zone, and north area.

Data collection:

In this study, 102 subjects "case control" was interview by the researcher and others three investigators professional and qualified people's one psychologies and other 2 psychiatric stuff nurse.

The researcher teaches the group how to collect data from the children either in oncology unit or other children a attending pедиatric hospital as a select control, the questionnaire fulfill by investigators with demographic data, socioeconomic data, anxiety, depression and PTSD scale, often collecting data from the child himself. The written instruction makes up the consent from, and includes who the investigator is the purpose of the study and the potential benefit and risk to subject. Each interview was done 20-25 minutes, 4-5 interview/day. There are some difficulties facing the researcher, which some of cancer children suffering from painful procedures are difficult to communication with them and other children was suffering from psychiatric disorder as severe depression.

Figure 1 Distribution of population sample according to residency



4.3.3 Selection control

Controls were children residing in the same geographical area matched with cases for age and sex, who has been admitted to pediatric hospital for acute medical condition other than malignant, and were coming to reception department diagnosed as pneumonia, diabetes mellitus, heart problems, chest infection or other diseases.

The sample was selected randomly, at the first 3 days of the week from 10 to 12 o'clock; all the selected children were in the same age from 6-12 years

The time of the interview was 20-25 minutes to fulfill the questionnaire and a total of 52 cases.

4.4 Period of the study

Data collection was conducted from June 2006 to October 2006.

4.5 Questionnaire design

Data was collected through structured interview questionnaire, a set of questions were prepared to enable the researcher focus on necessary information that meet the objectives of the study. The questionnaires include questions about personal profile, age, sex, demographical data, anxiety scale, depression scale, and PTSD scale. The researcher was select using the questionnaire through interview to ensure proper and related answers by responders.

4.5.1 Instruments of the study

Research instrument have two parts:

- (1) Questionnaire of socio-demographic and economics, include age, sex family income, and educational level.
- (2) Instruments used depression, anxiety, and PTSD scale.

The following is the description of the instruments used in this investigation, and methods for their scores calculating.

4.5.2 Children Posttraumatic Stress Disorder Clinically Administered Scale

Description of the scale

A standardized 17 items, self report measure designed to assess posttraumatic stress disorder of children of 6-12 years following exposure to a threatening illness and cancer as a traumatic event.

It includes three subscales. Intrusion (0-4 items), Avoidance (5-11 items), items and Hyper arousal (11-16 items), the scale has been found to detecting the likelihood of PTSD.

The CPTSD used in this study was based on DSM criteria and has already been validated in the Arab culture (Thabet and Vostains, 2004).

4.5.3 Revised Children's Manifest Anxiety Scale (RCMAS), Reynolds and Richmond (1985) Annex 13

Description of the scale

The anxiety scale is a standardized 37-item, self-report questionnaire for children of 6-19 years of age. It measures the presence or absence of anxiety-related symptoms (Yes, or no answers) in 28 anxiety items and 9 lie items, factor analysis of the items has identified three factors, physiological, worry over sensitivity and concentration. A cut-off 9 of total score to become 28 items has been found to predict the presence of anxiety disorder (Thabet, and Vostains, (1998).

4.5.5 Children Depression Inventory (CDI) Gareeb, (2000) Annex 12

Description of the scale

The CDI is a standardized self-report questionnaire of depressive symptomatology (Gareeb, 2000).

This has been developed for children and young people of 6-17 years old. The CDI include (27 items), each scored on a 0-2 scale (from not diseased to sever) for the previous 2 weeks. The total score ranges between 0-54, and the score of above 19 has been found to indicate the Likelihood of a depressive disorder.

The CDI has been validated in Arabic (Thabet, Abdulla, El Helou, and Vostain, in press). Were the validity and reliability of the CDI have been demonstrated by several investigations (Carey, Faulistich, Greshman) Ruggiero and Enyart, 1987 Fristad, et al, Kovacs, Saylor, Soirito and Bennett 1984). Cronbach Alfa coefficients have ranged from 0.84 to 0.94 (Saylor, et al, Smucker, Cairghead, and Greene 1986) and Menke,

1998). And in the study of Edna Menke (1998), the Cronbach alpha coefficients were 0.79.

4.5.6 Validity and reliability of the CPTSD scale are clinically administered.

4.5.7 Revised Children's Manifest Anxiety Scale (RCMAS)

Validity and reliability of anxiety scale

Researcher select the pilot study sample (N=50) from the original study population of cancer children, to provide the validity and reliability of Anxiety scale.

Validity of the anxiety scale (RCMAS)

Internal consistency

To compute the internal consistency of the Anxiety scale, the researcher calculates the correlation coefficient of every item (28 items) of the scale with the total scores of the scale, as shown in table 2.

As shown in table 2 there are most of the items had good levels of Internal Consistency, were the correlation coefficients ranged $R= (0.373-0.761)$, that significant at 0.01.

Table 2 Internal consistency of anxiety scale items with total scores

Anxiety					
Item	Pearson Correlation	Sig.	Item	Pearson Correlation	Sig.
B1	0.761	Sig. at 0.01	B19	0.383	Sig. at 0.05
B2	0.524	Sig. at 0.01	B21	0.623	Sig. at 0.01
B3	0.679	Sig. at 0.01	B22	0.752	Sig. at 0.01
B5	0.451	Sig. at 0.05	B23	0.682	Sig. at 0.01
B6	0.536	Sig. at 0.01	B25	0.637	Sig. at 0.01
B7	0.652	Sig. at 0.01	B26	0.370	Sig. at 0.05
B9	0.605	Sig. at 0.01	B27	0.582	Sig. at 0.01
B10	0.661	Sig. at 0.01	B29	0.679	Sig. at 0.01
B11	0.502	Sig. at 0.01	B30	0.373	Sig. at 0.05
B13	0.606	Sig. at 0.01	B31	0.492	Sig. at 0.01
B14	0.570	Sig. at 0.01	B33	0.561	Sig. at 0.01
B15	0.400	Sig. at 0.05	B34	0.646	Sig. at 0.01
B17	0.385	Sig. at 0.05	B35	0.400	Sig. at 0.05
B18	0.403	Sig. at 0.05	B37	0.624	Sig. at 0.01

4.5.8 Reliability Of the Anxiety scale (RCMAS)

To calculate the reliability of the anxiety scale, the researcher uses the following two methods.

Split half method

Researcher calculate the reliability of the anxiety scale by using Split half method (items =28) were the spearman brown coefficient correlation t was before modification was (R1=0.884) and after modification was (R2=0.939).

Crronbach's Alpha equation

Researcher calculate the reliability of the anxiety scale by using the equation of cronbach (N of items=28), were the value of alpha = (0.905). The Anxiety measurement device is valid and reliable for data collection in the current study.

4.5.6 Children depressive inventory (CDI), Kovacs (1985) Annex 14

Internal consistency

To compute the internal consistency of the Depression scale, the researcher calculates the correlation coefficient of every item (27 items) of the scale with the total scores of the scale, as shown in table 3.

As shown in table 3 there are most of the items had good levels of Internal Consistency, were the correlation coefficients ranged R= (0.372-0.867), that significant at 0.01.

Table 3 Internal consistency of CDI scale items with total scores

CDI	Pearson Correlation	Sig.	CDI	Pearson Correlation	Sig.
C1	0.629	Sig. at 0.01	C15	0.381	Sig. at 0.05

C2	0.519	Sig. at 0.01	C16	0.867	Sig. at 0.01
C3	0.634	Sig. at 0.01	C17	0.376	Sig. at 0.05
C4	0.367	Sig. at 0.05	C18	0.690	Sig. at 0.01
C5	0.698	Sig. at 0.01	C19	0.501	Sig. at 0.01
C6	0.372	Sig. at 0.05	C20	0.638	Sig. at 0.01
C7	0.734	Sig. at 0.01	C21	0.738	Sig. at 0.01
C8	0.652	Sig. at 0.01	C22	0.686	Sig. at 0.01
C9	0.363	Sig. at 0.05	C23	0.517	Sig. at 0.01
C10	0.703	Sig. at 0.01	C24	0.851	Sig. at 0.01
C11	0.819	Sig. at 0.01	C25	0.630	Sig. at 0.01
C12	0.527	Sig. at 0.01	C26	0.733	Sig. at 0.01
C13	0.720	Sig. at 0.01	C27	0.766	Sig. at 0.01
C14	0.587	Sig. at 0.01			

Reliability Of the CDI

To calculate the reliability of the CDI scale, the researcher uses the following two methods:

Split half method

Researcher calculate the reliability of the CDI scale by using Split half method (items =27) were the spearman brown coefficient correlation was before modification was (R=0.933) and after modification was (R=0.965).

Crronbach's Alpha equation

Researcher calculate the reliability of the anxiety scale by using the equation of crronbach (N of items=28), were the value of alpha = (0.923). The CDI measurement device is valid and reliable for data collection in the current study.

4.6 Ethical consideration

- 1- The researcher ensured participants privacy and confidentiality, participants in the study were received complete explanation about the purpose of the study including the time and how long interview will take.
- 2- Consent forms signed from the parents of the children especially their mothers.
- 3- An official letter of approval Helsinki committee.
- 4- Obtained approval of director of the hospital.
- 5- The researcher was given the participants sufficient time to answer the questions and assuring them that information given in the interview will be confidential.
- 6- The researcher promised that the names were confidential.

4.7 Eligibility criteria

4.7.1 Inclusion criteria

Case

- Any child with diagnosed confirm of malignancy between 6-12 years of age, living in Gaza Strip, and had been register in medical index.
- Any child that admitted or readmitted in the department and had a periodic follows up in the outpatient clinic.

Control

- Cases that had been admitted to internal pediatric hospital, rather than oncology condition or attended to reception department

4.7.2 Exclusion criteria

- Children with psychiatric disorders.
- Children with mentally retarded.

4.8 Statistical analysis

The collecting data was analyzed by using the statistical package of social sciences (Windows Version 8, SPSS, and Chicago, USA). Data entry model was used to complete data entry and then data analysis was carried out as follow:

- Clearing of data
- Frequency and recording were used to present data for each variable.
- Means and standard deviations were computed for continues numeric variables also the researcher tested the reliability and validity of the study instrument.
- Frequency and recording were used to present data for each.
- Cross tabulation and advanced statistical analysis.
- Factor analysis was done to examine the structure of the questionnaire. Relationship between the variables was tested by using T-test.
- One way ANOVA for study PTSD, anxiety, and depression with relationship with age, monthly income, and level of education.
- Person coefficient for internal consistency.

- Statistical relationship between the variables were assessed using P value were calculated for the ordinal level measures ($P < 0.05$).

4.9 Limitation of study

The researcher faced many obstacles during implementation the study such as

- Lack of resources in Gaza Strip the researcher travel to Egypt and collect information related to study form Academy of Scientific Research and Technology Information Sector.
- Time limitation of the researcher.
- Sampling was convenient, for all cancer cases.
- Political situation, as a result of the Israeli invasion to Gaza, there was difficulties to interview some of the selected sample.
- Some cancer children were not cooperative especially during chemotherapy treatment.

Conclusion

In this chapter was clear that study was case-control. The sampling method was convenient sample, the sample size was 102 cases (children with cancer and control) and implementing research tools during the pilot study, it was valid and reliable that allows collecting data, then entry data and analysis by using SPSS as shown in chapter 5.

Chapter (5)

Results

Introduction

This chapter aimed to describe and analyze the main socio-demographic, economic variables, and prevalence of anxiety, depression post traumatic stress disorder related to the study. The researcher will pose the methods utilized to finding the results of the study.

The researcher clarified the main results of the study after data collection and analysis by using the statistical tools of the sample included of 102 cases and control.

The researcher used SPSS program for data entry and analysis, the results of the study were shown in sociodemographic characteristics of the study sample and in the psychiatric questionnaire shown in PTSD, scale CDI, scale and revised children's manifest anxiety scale, to reach the following results.

The results of current study are presented by description of the sociodemographic characteristics of the study sample, using the descriptive, statistics, frequencies, percentages, means and standard deviation. Analysis of the relationship between sex and categories of the psychiatric disorder (posttraumatic stress disorder, anxiety, depression in general mental health difficulties between the cases of cancer and the cans control, and also used ANOVA test in statistical analysis.

5.1 Sociodemographic characteristics of the study sample.

As shown in table 4, the total number of children selected for the current study was 102 children 50 cases of children with cancer, 24 male, and 26 female, and the matched control was 52 cases, 26 male, and 26 female. The total number of male was 50 (49.01%) and total number of female was (50.02%).

Table 4 Distribution of sample according to sex

Group		Sex		Total
		male	female	
Case	No.	24	26	50
	%	48	52	100
Control	No.	26	26	52
	%	50	50	100
Total	No.	50	52	102
	%	49.01961	50.98039	100

Table 5 shown the distribution of the cases according to age, the highest percentage of age of children with cancer was at 7 years was 16 (32%) and the lowers among 6 years were 2 (4%), and the control group the highest percentage of age was at 11 years (21.2%), and the lowers among 8 years (13.5%).

Table 5 Distribution of the cases according to age

GROUP		AGE						Total
		6-	7-	8-	9-	10-	11-12	
Case	Count	2	16	12	7	7	6	50
	%	4	32	24	14	14	12	100
Control	Count	8	9	7	9	8	11	52
	%	15.4	17.3	13.5	17.3	15.4	21.2	100.0
TOTAL	Count	10	25	19	16	15	17	102
	%	9.8	24.5	18.6	15.7	14.7	16.7	100.0

As shown in table 6, distribution of the cancer cases according to residency there were 15 children with cancer represent 30%, 19 cases represent 38%, and 16 represent 32%, these indicate that the most children with cancer was from refugee camp.

Table 6 Distribution of the cases according to residency

Residence	Frequency	Percent
City	15	30
refugee camp	19	38
Village	16	32
Total	50	100

Table 7 In order to find the differences between psychiatric disorders, and type of residency, one-way ANOVA was conducted to study the differences between anxiety, depression, PTSD, according to type of residency (city, camp, village), the result shown that there were not significant differences between the mean of anxiety, and PTSD according to residence, but the means of depression $M=280.183$, it is statistically significant at level 0.044. Scheffe test was used in the following table.

Table 7 One-way ANOVA comparing anxiety, depression, PTSD and type of residency (city-camp-village)

Factor	Groups	Sum of Squares	df	Mean Square	F	Sig.	sig. level
CDI	Between Groups	560.366	2	280.183	3.340	0.044	sig. at 0.05
	Within Groups	3943.154	47	83.897			
	Total	4503.520	49				
PTSD	Between Groups	329.547	2	164.774	1.160	0.322	not sig.
	Within Groups	6677.273	47	142.070			
	Total	7006.820	49				
Intrusion	Between Groups	20.861	2	10.430	1.148	0.326	not sig.
	Within Groups	427.139	47	9.088			
	Total	448.000	49				
Avoidance	Between Groups	79.053	2	39.527	1.157	0.323	not sig.
	Within Groups	1605.827	47	34.167			
	Total	1684.880	49				
Hyper arousal	Between Groups	35.720	2	17.860	0.815	0.449	not sig.
	Within Groups	1030.460	47	21.925			
	Total	1066.180	49				
Anxiety	Between Groups	83.897	2	41.948	1.035	.363	not sig.
	Within Groups	1905.083	47	40.534			
	Total	1988.980	49				

“f” standard table at sig. (0.05) and df (2, 49) = 3.19

“f” standard table at sig. (0.05) and df (2, 49) = 5.08

Table 8 Scheffe statistical analysis, show that, there is a higher statistically significant in depression at level 0.05, mean=28.13 the result revealed that the children with cancer had higher level who live in city than in village, and refugee camp.

Table 8 Scheffe test to know trends of differences according to residence

	Village M= 19.750	refugee camp M= 22.631	City M= 28.133
Village M= 19.750	-	2.881	8.383*
refugee camp M= 22.631	-	-	5.501
City M= 28.133	-	-	-

Table 9 shown distribution of children with cancer according to family income, the family income was less than 300 Shekel represent (30%) and (76%) of the total sample less than 1500 Shekel, it means low family income, and the high family income from 2001-3000 Shekel 8 cases represent (16%).

Table 9**Distribution of children with cancer according to family income**

Family Income	Frequency	Percent
less than 300 NIS	15	30
from 301-600 NIS	5	10
from 601-900 NIS	8	16
From 901-1500 NIS	10	20
from 1501-2000 NIS	4	8
from 2001-3000 NIS	8	16
Total	50	100

As shown in table 10 in order to find the differences between psychiatric disorders, and, and socioeconomic factor, one-way ANOVA was conducted to study the differences between anxiety, depression, PTSD, according to socioeconomic factor, statistical analysis was used to explain the differences between anxiety, depression, PTSD, and socioeconomic factor, it shown that depression and anxiety in cancer children are not statistical significant, while the intrusion factor of PTSD was significant at 0.01 but the other factors of PTSD avoidance and hyper arousal are not significant, which mean that the children with cancer re-experiencing the trauma in high socioeconomic factor.

Table 10 Differences of anxiety, depression, PTSD according to socioeconomic factor

Factor	GROUP	N	Mean	Std. Deviation	t. value	Sig. (2-tailed)	sig. level
CDI	Low socioeconomic	23	24.739	10.310	0.938	0.353	Not sig.
	High socioeconomic	27	22.185	8.953			
PTSD	low socioeconomic	23	33.391	13.224	-0.909	0.368	Not sig.
	High socioeconomic	27	36.481	10.814			
Intrusion	Low socioeconomic	23	6.696	3.390	-2.509	0.016	sig. at

	High socioeconomic	27	8.741	2.347			0.05
Avoidance	low socioeconomic	23	14.696	6.399	-1.098	0.278	Not sig.
	high socioeconomic	27	16.519	5.345			
Hyper arousal	Low socioeconomic	23	12.000	5.152	0.584	0.562	Not sig.
	High socioeconomic	27	11.222	4.273			
Anxiety	Low socioeconomic	23	18.652	6.699	0.333	0.741	Not sig.
	High socioeconomic	27	19.259	6.193			

As shown in table 11, distribution of the cases according to educational Level, there are 16 cases in the second class (32%) which represents the high rate, and in the first class 2 cases (4%) which represent the lower rate.

Table 11 Distribution of the cases according to their educational level

Education	Case		Control		Total	
	Frequency	Percent	Frequency	Percent	No.	%
first class	2	4	2	3.85	4	3.92
second class	16	32	16	30.78	32	31.37
third class	12	24	12	23.07	24	23.52
fourth class	7	14	7	13.46	14	13.73
fifth class	7	14	8	15.38	15	14.71
sixth class	6	12	7	13.46	13	12.75
Total	50	100	52	100	102	100

5.2 Diagnosis of cancer in children

As shown in table 12, distribution of children with cancer according to diagnosis, the most cases was diagnosed as acute lymphoblastic Leukemia (ALL) 37 cases (74%) of total cases, acute myeloid Leukemia (AML) 9 cases represent (18%), Hodgkin's, (2%) Brain tumor represents (2%) and Lymphoma (4%) of the total cases.

Table 12 Distribution of children with cancer according to diagnosis

Diagnosis	Frequency	Percent
Acute lymphatic Leukemia	37	74
Acute myeloid leukemia	9	18
Hodgkin's	1	2
Brain tumor	1	2
Lymphoma without Hodgkin's	2	4
Total	50	100

Period of treatment of children with cancer

As shown in table 13, distribution of children with cancer according to period of treatment, 3 of cancer children treated since 3 months, (6%), 15 cases treated from 3-6 months (30%), 15 cases from 6-12 months (30%), 15 cases treated from one-two years (30%) and the lower cases are treated more than 2 years represent (4%).

Table 13 Distribution of children with cancer according to period of treatment

date exploration	Frequency	Percent
3 months	3	6
From 3-6 months	15	30
from 6- 12 months	15	30
one - two years	15	30
more than two years	2	4
Total	50	100

Types of therapy of cancer children

As shown in table 14, most of cases treated by chemotherapy, 48 children with cancer represent (96%), and by Bonmarrow Transplantation and radiation therapy 2 cases represent (4%).

Table 14 Distribution of the cases according to type of treatment

Type treatment	Frequency	Percent
Chemotherapy	48	96
Radiation therapy	2	4
Total	50	100

5.5 Outcome of treatment of children with cancer

Table 15, distribution of the cases according improvement, most of cases are improved by medication 45 cases (90%). and 5 cases not improved (10%).

Table 15 Distribution of the cases according improvement

treatment result	Frequency	Percent
Improve	45	90
Not improved	5	10
Total	50	100

5.6 Psychiatric disorders in children with cancer and control group

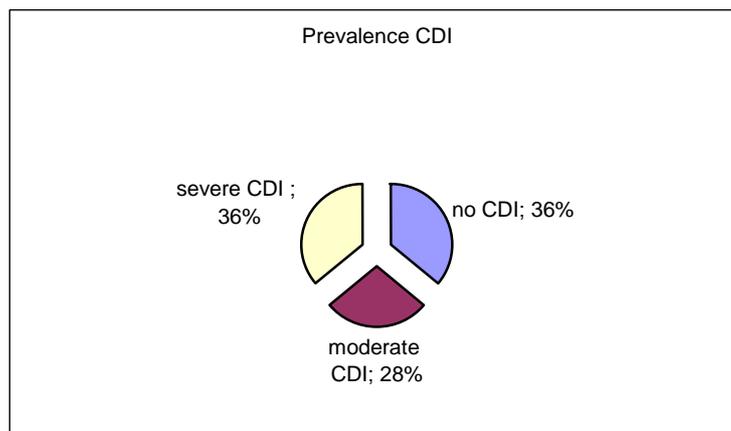
5.6.1 Prevalence of depression disorder

Table 16, Prevalence of depression between children with cancer and control, shown that moderate depression in cancer children were 28% while the case control 21.2% and severe depression in cancer children 36% while the case control 5.8%. The result revealed that depression in cancer children are higher rate than control group.

Table 16 Prevalence of depression between children with cancer and control

Depression	Case		control	
	Frequency	Percent	Frequency	Percent
No depression	18	36	38	73.1
Moderate depression	14	28	11	21.2
Severe depression	18	36	3	5.8
Total	50	100	52	100.0

Figure -2- Prevalence of depression among children with cancer



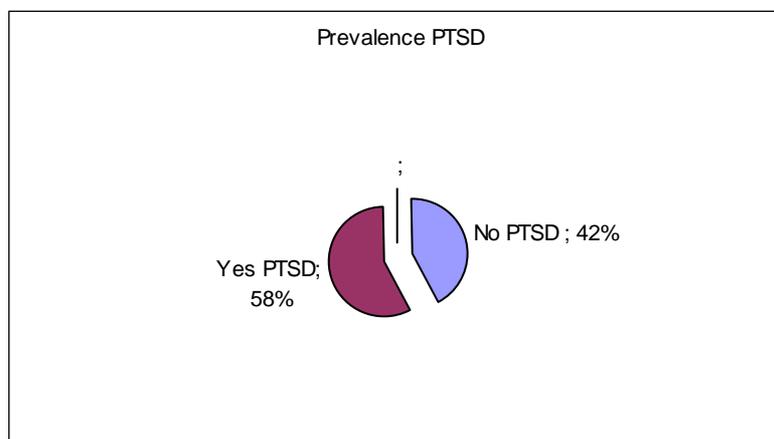
5.6.2 Prevalence of PTSD

Table 17 shown, Prevalence of PTSD between children with cancer and the control, that 42% of cancer children not have PTSD, comparing to the control 80.8% have not PTSD, and 58% of cancer children had PTSD, while the case control had 19.2% the results revealed that cancer children are higher incident rate than control group.

Table 17 Prevalence of PTSD between children with cancer and the control

PTSD	Case		Control	
	Frequency	Percent	Frequency	Percent
No PTSD	21	42	42	80.8
Yes PTSD	29	58	10	19.2
Total	50	100	52	100.0

Figure -3- Prevalence of PTSD among children with cancer



5.6.3 Prevalence of anxiety disorder

Table 18 shown, the prevalence of anxiety, among cancer children and the control, that 44% of cancer children not have anxiety, comparing to the case control 88.46% have not anxiety, and the cancer children who have anxiety, 56% while the control group have 11.54% the results revealed that cancer children are higher incident rate than control group.

Table 18 Prevalence of anxiety, among cancer children and the control

ANXIETY	Case		Control	
	Frequency	Percent	Percent	Percent
No anxiety	22	44	46	88.46
Yes anxiety	28	56	6	11.54
Total	50	100	52	100

Figure -4- Prevalence of anxiety among children with cancer

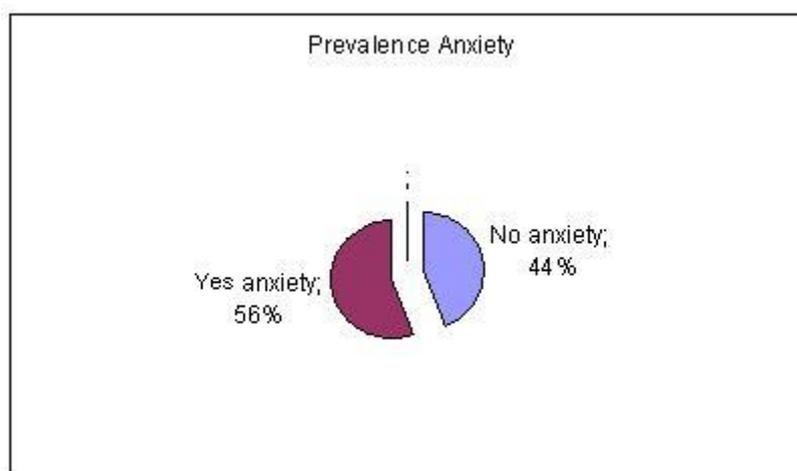


Table 19 shown, differences in the (PTSD, Anxiety, depression) between cancer children and control group, the depression mean was =23.360 in cancer cases, while the control mean was =12.942, t. test =5.693, P =0.01 this revealed that the depression among cancer children are higher than the control.

PTSD in cancer cases mean =35.060 and the control mean =21.250, this revealed that the prevalence of PTSD among cancer children are higher than the case control t. test = 5.642, P =0.001.

The anxiety in cancer cases mean =18.980 and the control mean =10.980, this revealed that the prevalence of anxiety among cancer children are higher than the case control, t. test =6.201, P =0.01.

The results indicate that depression, anxiety, and PTSD are higher in children with cancer than the control group.

Table 19 Differences in (PTSD, Anxiety, depression) between cancer children and control

Factor	GROUP	N	Mean	Std. Deviation	t. value	P.value	sig. level
CDI	case	50	23.360	9.587	5.693	0.000	sig. at 0.01
	control	52	12.942	8.890			
Intrusion	case	50	7.800	3.024	4.004	0.000	sig. at 0.01
	control	52	5.173	3.568			
Avoidance	case	50	15.680	5.864	5.811	0.000	sig. at 0.01
	control	52	8.846	6.008			
Hyper arousal	case	50	11.580	4.665	4.607	0.000	sig. at 0.01
	control	52	7.231	4.861			
PTSD	case	50	35.060	11.958	5.642	0.000	sig. at 0.01
	control	52	21.250	12.729			
Anxiety	case	50	18.980	6.371	6.201	0.000	sig. at 0.01
	control	52	10.981	6.647			

“t” standard table at sig. (0.05) and df (100) = 1.98

“t” standard table at sig. (0.01) and df (100) = 2.62

Table 20 shown Pearson correlation test for children with cancer that there is statistically significant between depression (CDI), intrusion, avoidance, hyper arousal of PTSD, anxiety, and PTSD is statistically significant between depression and anxiety, and anxiety is statistically significant between depression and PTSD, the results were indicating that there were associations between all the variables anxiety, depression and PTSD, at statistically significant 0.01.

Table 20 Pearson correlation test for children with cancer

	CDI	INTRO	AVIODANC	HYPERS	PTSD	ANXIETY
--	-----	-------	----------	--------	------	---------

CDI	-					
PTSD	**0.814	**0.841	**0.935	**0.843	-	
Intrusion	**0.633	-				
Avoidance	**0.748	**0.765	-			
Hyper arousal	**0.737	**0.547	**0.643	-		
Anxiety	**0.776	**0.671	**0.768	**0.697	**0.818	-

**Sig. at 0.01 =0.354.

**Sig. at 0.05 =0.273.

As shown in table 21 in order to find the differences between psychiatric disorders, and the age, one-way ANOVA was conducted to study the differences between anxiety, depression, PTSD, according to age, group from 6-12 years by using (Variance source, sum of squares, df, mean square, F value, sig. level).

These revealed that there were no statistically significant differences between anxieties, depression, PTSD according to the age.

Table 21 One-way ANOVA comparing prevalence of anxiety, depression, PTSD, according to the age

Age	Source of variance	Sum of Squares	df	Mean Square	F	P.vlaue	sig. level
CDI	Between Groups	284.118	5	56.824	0.593	0.706	not sig.

	Within Groups	4219.402	44	95.895			
	Total	4503.520	49				
PTSD	Between Groups	365.740	5	73.148	0.485	0.786	not sig.
	Within Groups	6641.080	44	150.934			
	Total	7006.820	49				
Intrusion	Between Groups	63.027	5	12.605	1.441	0.229	not sig.
	Within Groups	384.973	44	8.749			
	Total	448.000	49				
Avoidance	Between Groups	86.145	5	17.229	0.474	0.793	not sig.
	Within Groups	1598.735	44	36.335			
	Total	1684.880	49				
Hyper arousal	Between Groups	22.052	5	4.410	0.186	0.966	not sig.
	Within Groups	1044.128	44	23.730			
	Total	1066.180	49				
Anxiety	Between Groups	82.801	5	16.560	.382	.858	not sig.
	Within Groups	1906.179	44	43.322			
	Total	1988.980	49				

“F” standard table at sig. (0.05) and df (5, 49) = 2.41

“F” standard table at sig. (0.05) and df (5, 49) = 3.42

As shown in table 22, in order to find the differences between type of cancer and psychiatric disorders, one-way ANOVA was conducted in which type of cancer as dependent variable and psychiatric disorder (anxiety, depression, PTSD) as independent variable. Post-hock revealed that there were no statistical differences between anxiety, depression, PTSD according to type of cancer "Acute Lymphatic Leukemia, and Acute myeloid Leukemia, brain cancer or Hodgkin's disease."

Table 22 One-way ANOVA comparing anxiety, depression, PTSD and type of cancer

factor	Source of variance	Sum of Squares	df	Mean Square	F	P value	sig. level
CDI	Between Groups	171.212	4	42.803	0.445	0.776	not sig.
	Within Groups	4332.308	45	96.274			
	Total	4503.520	49				
PTSD	Between Groups	90.728	4	22.682	0.148	0.963	not sig.
	Within Groups	6916.092	45	153.691			
	Total	7006.820	49				
Intrusion	Between Groups	60.467	4	15.117	1.755	0.155	not sig.
	Within Groups	387.533	45	8.612			
	Total	448.000	49				

Avoidance	Between Groups	33.018	4	8.255	0.225	0.923	not sig.
	Within Groups	1651.862	45	36.708			
	Total	1684.880	49				
Hyper arousal	Between Groups	35.525	4	8.881	0.388	0.816	not sig.
	Within Groups	1030.655	45	22.903			
	Total	1066.180	49				
Anxiety	Between Groups	124.506	4	31.126	.751	.562	not sig.
	Within Groups	1864.474	45	41.433			
	Total	1988.980	49				

“F” standard table at sig. (0.05) and df (4, 49) = 2.41

“F” standard table at sig. (0.05) and df (4, 49) = 3.42

As shown in table 23 in order to find the differences between psychiatric disorders, and, and total educational level one-way ANOVA was conducted to study the differences between anxiety, depression, PTSD, according to educational level by using (Variance source, sum of squares, df, mean square, P value, sig. level). Post-hock revealed that there were no statistically significant differences between anxieties, depression, PTSD according to total educational level.

Table 23 One-way ANOVA comparing anxiety, depression, PTSD and total educational level

Educational level		Sum of Squares	df	Mean Square	F	Sig.	sig. level
CDI	Between Groups	284.118	5	56.824	0.593	0.706	Not sig.
	Within Groups	4219.402	44	95.895			
	Total	4503.520	49				
PTSD	Between Groups	365.740	5	73.148	0.485	0.786	Not sig.
	Within Groups	6641.080	44	150.934			
	Total	7006.820	49				
Intrusion	Between Groups	63.027	5	12.605	1.441	0.229	Not sig.
	Within Groups	384.973	44	8.749			
	Total	448.000	49				
Avoidance	Between Groups	86.145	5	17.229	0.474	0.793	Not sig.
	Within Groups	1598.735	44	36.335			
	Total	1684.880	49				
Hyper arousal	Between Groups	22.052	5	4.410	0.186	0.966	Not sig.
	Within Groups	1044.128	44	23.730			
	Total	1066.180	49				
Anxiety	Between Groups	82.801	5	16.560	.382	.858	Not

	Within Groups	1906.179	44	43.322			sig.
	Total	1988.980	49				

“F” standard table at sig. (0.05) and df (5, 49) = 2.41

“F” standard table at sig. (0.05) and df (5, 49) = 3.42

As shown in table 24 in order to find the differences between anxiety, depression, PTSD and number of siblings, one-way ANOVA was conducted to study the differences between anxiety, depression, PTSD, according to number of siblings by using (Variance source, sum of squares, df, mean square, P value, sig. level). Post-hock revealed that there were no statistically significant differences between anxieties, depression, PTSD according to number of siblings, that’s mean all the children were suffering however the number of siblings going up.

Table 24 Differences between anxiety, depression, PTSD and number of siblings

Factor		Sum of Squares	df	Mean Square	F	P. value	Sig.
CDI	Between Groups	87.218	2	43.609	.464	.632	Not sig.
	Within Groups	4416.302	47	93.964			
	Total	4503.520	49				
Intouision	Between Groups	9.087	2	4.543	.487	.618	Not sig.
	Within Groups	438.913	47	9.339			
	Total	448.000	49				
Avoidance	Between Groups	59.323	2	29.662	.858	.431	Not sig.
	Within Groups	1625.557	47	34.586			
	Total	1684.880	49				
Hyper arousal	Between Groups	21.530	2	10.765	.484	.619	Not sig.
	Within Groups	1044.650	47	22.227			
	Total	1066.180	49				
PTSD	Between Groups	209.666	2	104.833	.725	.490	Not sig.
	Within Groups	6797.154	47	144.620			
	Total	7006.820	49				
Anxiety	Between Groups	44.707	2	22.353	.540	.586	Not sig.
	Within Groups	1944.273	47	41.368			
	Total	1988.980	49				

“F” standard table at sig. (0.05) and df (2, 49) = 3.19

“F” standard table at sig. (0.05) and df (2, 49) = 5.08

Table 25 show the prevalence of anxiety, depression, PTSD according to gender (male and female), there are no statistical significant differences between depression, anxiety, PTSD according to gender. That's mean all the children with cancer male like female in suffering of psychiatric disorder.

Table 25 Prevalence of anxiety, depression, PTSD according to gender

Factors	GROUP	N	Mean	Std. Deviation	t. value	P. value	sig. level
CDI	male	24	25.583	11.474	1.600	0.116	not sig.
	female	26	21.308	7.064			
PTSD	male	24	34.708	15.516	-0.198	0.844	not sig.
	female	26	35.385	7.653			
Intrusion	male	24	8.000	3.742	0.446	0.658	not sig.
	female	26	7.615	2.228			
Avoidance	male	24	15.083	7.477	-0.688	0.495	not sig.
	female	26	16.231	3.912			
Hyper arousal	male	24	11.625	5.323	0.065	0.949	not sig.
	female	26	11.538	4.072			
Anxiety	male	24	18.917	8.070	-0.067	0.947	not sig.
	female	26	19.038	4.431			

“t” standard table at sig. (0.05) and df (48) = 2.02

“t” standard table at sig. (0.01) and df (48) = 2.70

Summery

In this chapter, the researcher presents the result with consistence with the research objectives and question, being description demographical characteristic such as (age, sex, income, educational level, number of siblings, father and mother work) between the cancer children and case control study (non cancer children).

The results reveal the psychiatric disorders as anxiety, depression and PTSD among cancer children as case control; it was shown from spss statistical analysis and also ANOVA style.

We conclude the relationship between the prevalence of anxiety, depression, PTSD and total with demographical data among children with cancer.

Chapter (6)

Conclusions and Recommendation

Introduction

In this chapter the researcher will discuss the main results according to research questions, after discussing the main result; the researcher put the recommendation consistent with the study problem result and other concordant with other literature. Followed by the conclusion about the study

The aim of study was to investigate the level of psychiatric disorders among cancer children with a comparison of other group of not cancer children, and find the differences of these problems according to sex, age, and sociodemographic characteristics.

Discussion

6.1 Socio-demographic variables

The study sample consisted of 102 children, 50 children with cancer, 52 children as a case control study, from pediatric hospital-Gaza, selected according to the inclusion criteria described previously by the researcher.

The study was investigate the prevalence rate of psychiatric disorders with cancer aged 6-12 years, compared with the prevalence rate of another matched group over this period of time. The results of the study showed that 30% of children live in city, 38% children live refugee camp, and 32% of children live in village. This result was revealed that high the number of children comes from refugee camp. All of these children are living in their families, and with their siblings. According to number of siblings, the researcher found that there are statistical differences between the

psychiatric disorders and number of siblings, the number of siblings are categorized into three groups, (less than 4), (5-7), and (more than 8), it is found when increased the number of children increased the anxiety, depression, and PTSD. The researcher also found their is statistical differences between the depression and residence, the cancer children who are live in the city high in rate of depression than the cancer children who live in camps and village, and the researcher found the are no statistical differences between anxiety, and PTSD return to type of residency city, camp, and village.

6.2 Domain of depression disorder

The result of this study found the cancer children in both sexes (male and female) represent 64% of depression, the high rates of depression included as moderate depression 28% and sever depression 36%, while the control group found lower rate of depression in both sexes, represent 27% of depression, moderate depression 21.2% and sever depression 5.8% that's mean depression in cancer children is very high than depression in control case study. The study of Yeh and Worg (2004) found there were children with cancer reported high rates of significant depression. The study of Sawyer, et al (1997) reported that depression in children with cancer were significantly higher than children in the community. It seems likely that depression reflected the impact of treatment, chemotherapy and other invasive medical procedures on the children with cancer. This is also consistent with the study by Dahlquist et al (1999), which also fined high levels of anxiety and depression among children with cancer and parents. It seems likely that these difficulties of depression reflect the concern of the

disease experienced by parents of children who are being treated for a life threatening illness. Depression may result due to children's fears about injections, and excessive vomiting experienced by children, or difficulty ingesting oral medication, which may lead to low self-esteem and no capacity to cope with their illness. The parent observation may be influenced by the distress as experiencing which reflects negative feelings toward their children's illness.

In comparison with study by Mariann and his Colloques (2005) found 21% for clinical depression, in children with cancer, because depression is often difficult to diagnose in cancer patients, as physical symptoms of depression such as disturbance in sleep, appetite, and concentration and decreased energy levels may occur as a consequence of cancer and its treatment. And according to pain from procedures and treatment is more common among the range of depression. However, the result is in concordance with previous finding by Varni et al (2004) showing that higher pain intensity is associated with higher depression and anxiety symptoms among children with cancer as a comparative study with community children the study found there is no significant differences between level of depression and sex of children with cancer. In comparison with the study by Marian and his Colleques (2005) girls reported higher level of anxiety and depression than boys, due to changed appearance, by losing hair.

6.3 Domain of anxiety disorder

The psychiatric disorder of anxiety the research found that 65% of children with cancer, and as a comparative with control group that 11.54%. The study of El-Hamarawi et al (2003) approved that there is statistically significant with cancer

children than other control group. The study of Marrian and his Colleques (2005) report that 21% of children with cancer compared with control study who treated in general hospital. Rating of anxiety due to pain procedure and treatment, highly distressing and worst aspects of distress, losing hair, fatigue were rated with highest and the same time worry about not getting well, mucositis, nausea, pain from procedure and treatment and worry about missing school.

The study of Sawyer et al (1997) and Goldberg (1978) they found the children with cancer were reported to be more anxious, dependent, and tearful and to experience more sleep disturbance than children in the community and the problems reflected the impact of hospitalization chemotherapy and other invasive medical procedures. Bessell and Ann (1999) revealed in their study that children with cancer higher social anxiety than others, and were generally unhappy in school particularly concerned with their school performance and peer relationship during treatment and socially isolated.

The interpretation of high anxiety of children with cancer in Gaza related to political situation, Thabet and Vostains (1998) found that there were children reported high rates of significant anxiety problems (21.5%), Thabet et al (2002) found that there is significantly more children exposed to bombardment. This would be the fact that Palestinian children are affected by other risk factors such as political violence and low socio-economic. The research found the results that the rate of PTSD among cancer children 58% compared with the case control study 19.2%, this indicate that children with cancer high rate than other children with no cancer. In comparison with other study Meesk et al (2002), found that children with cancer and survivors reported clinically significant levels with PTSD than the population, and the survivors with PTSD reported poor quality of life. The study of Niels and Marianne (2005), found

that the children survivors with cancer reported 14% of sever level of PTSD when compared with a group of non ill children.

Where the study of Libov et al (1999) found the children with cancer reported PTSD symptoms, reveal that 61% intrusive recollections, flashback experience 14% avoidance 3%, hypervigilance the most common arousal 41%. The result of their study found that there was consistency with the researcher study in Gaza.

Yeh and Wong (2004) found that children with cancer have significant PTSD symptoms, including intrusion and avoidance which return to the high tendency of emotional and behavioral problems scores for pediatric oncology patients and suggested that they should receive psychological care. While the study of Meeske et al (2000) reported and examine the association between children with cancer long term quality of life and psychological out come, revealed that survivors with PTSD reported clinically significant levels on all psychological distress. The research found there is no sex difference in PTSD with cancer children, but there are statistically significant differences between PTSD in children with cancer and the case control study.

6.4 Domain of social status income

The study found that cancer children's family had low social income 76%of other social families. This is consistent with the study of El-Hamrawi et al (2003) that found increased burden of cancer in lower social status families, and the searcher results of low social income consistent with the study of Zebrack et al (2004) that PTSD children with cancer increased with diminished social functioning.

The researcher found in the study that there are no significant differences of PTSD in children with cancer according to gender, and number of sibling's to the type of cancer and case control study. The study of Zebrack et al (2004) found 5% of siblings were associated with female sex increased psychological distress that may relate to brain tumor as a type of cancer.

The study found, no significant differences between the PTSD in children with cancer, return to type of cancer, acute lymphatic Leukemia and acute myeloid Leukemia, children are suffering from PTSD.

6.5 Domain of educational level

The searcher found no-significant differences between anxiety, depression, PTSD return to educational level of children with cancer, because the children in the same level of education, but the children were feel unhappy in school particularly concerned with their performance and peer relationship.

The study of Challinor et al (1999) found that a child who diagnosed with cancer has increased risks for school failure related to illness and treatment.

This interpreter the scores reported by children with cancer describe physical problems commonly present as headaches, nausea, vomiting worry, invasive medical procedures, disturbances of sleep or worry and feeling run down, low self-esteem due to chemotherapy. The researcher sees that the results of this study about psychiatric disorders was logical results, where the children in Gaza strip as a general lived in difficult circumstances due to daily traumatic events and the hard of socioeconomic

status due to political violence. In other words, the psychiatric trauma was accumulative affect in different period of life (Awwad, 1988).

6.6 Conclusion

This study aimed to study the rate of psychiatric disorders among children with cancer compared with case control group of children attending to pediatric oncology department aged 6-12 years old in Gaza strip and differences of these psychiatric disorders particularly anxiety, depression and PTSD to sex, number of sibling, type of residence, educational level, types of cancer, and socioeconomic factors.

The study focused on the psychiatric disorders, the researcher found that prevalence of anxiety in children with cancer were 56% while in the control group were 11.54% rated by Revised Children's Manifest Anxiety Scale, (RCMAC) and the prevalence of depression in children with cancer were 64% (moderate and sever) while in the control group were 27% (moderate and sever) rated by Children Depression Inventory, (CDI) Kovacs and prevalence of PTSD in children with cancer were 5.8% while in the control group were 19.2 % rated by Children Post traumatic Stress Disorder Clinically Administrated scale (CPTSD) in this study demonstrated acceptable psychometric properties and can be used as a clinical assessment tool in psychiatric disorders in children with cancer and in matched group of non-cancer children.

Many factors have been associated to prove psychiatric disorder among cancer children in oncology department; include sociodemographic factors types of cancer, and life style.

The study found most of children with cancer diagnosed as acute lymphatic Leukemia which represent 74%, acute myeloid Leukemia 18% Hodgkin's 2%, brain tumor 2% and Lymphoma (non-Hodgkin's) 4%, which the diagnosis affects to the child and family need more psychological support.

The children with cancer was treated by chemotherapy medication represent 96% and Bonmarrow trans plantation with radiation about 4%, about 90% of cancer children are improved and 10% of other cancer children not improved.

The researcher found that most of cancer children live in low socioeconomic status represent 76%, family income below 1500 shekel due to political situations. The result found that there were no gender differences in psychiatric disorders among children in cancer and non-cancer children.

The study find that there were no differences between type of residence and psychiatric disorders among cancer children who live in the city except intrusion factor of PTSD, re-experiencing the trauma was high in the city, than others which mean that the people in cities overwhelming by the traumatic events and feeling distressed when something reminds themes of their child illness.

Finally the researcher concluded that finding of the study can be generalized on the children of cancer in the oncology department in pediatric hospital other oncology department in Gaza strip.

6.7 Recommendation

- Establishment of multidisplenary team, psychiatrist, psychiatric nurse, psychologist and social worker to promote psychological needs of children and palliative care treatment.
- Developed the out patient clinic by computerized system for medical cancer index.
- More psychological programs directed to the children with cancer especially during invasive chemotherapy and educating family about cancer.

- Health care for children with cancer should include psychological services to prevent long-Term psychiatric problems.
- Enhancing community mental health program for psychological support for children with cancer and their families especially their mothers through home visits and follow up.

6.7.1 Further research

- Psychological impact to mothers and fathers of children with cancer.
- Health related quality of life of children with cancer.
- Psychosocial adjustment with cancer children and family.
- A longitudinal prospective study of psychiatric disorder to survivor's cancer children for improving their mental health.
- Coping strategies for parents of children with cancer.

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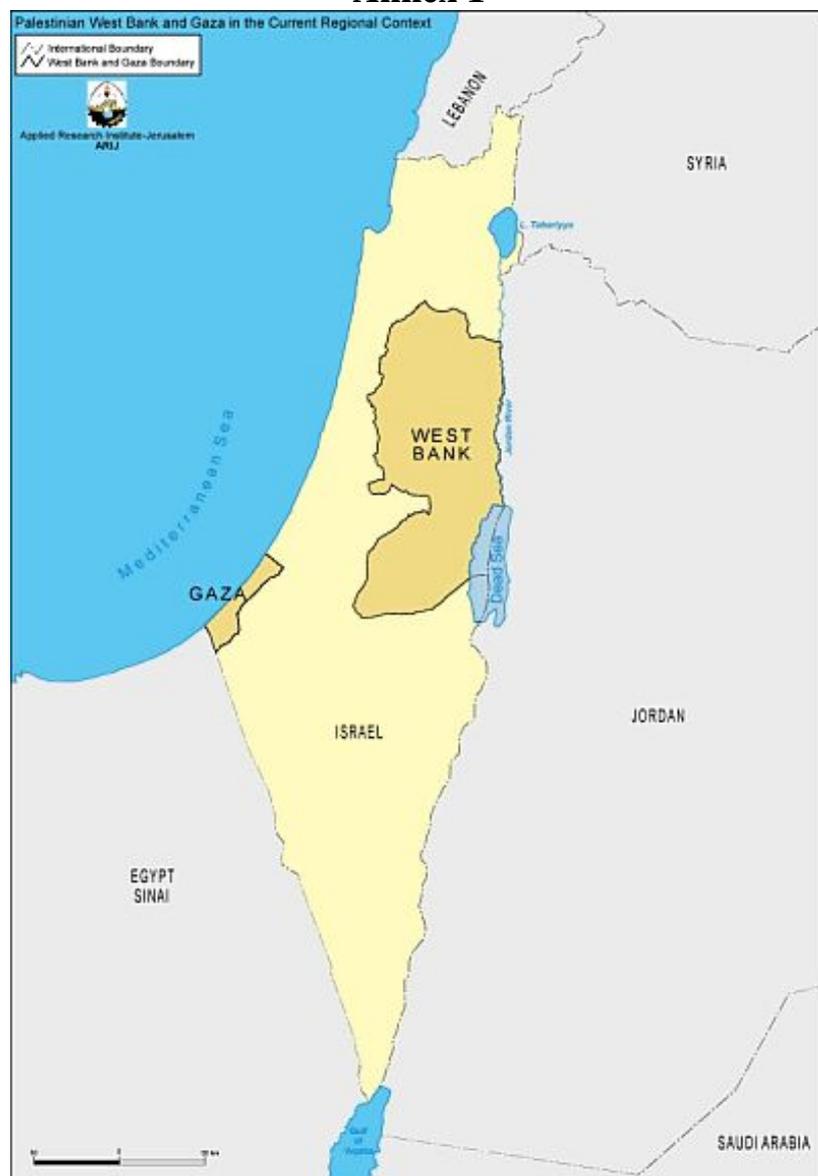
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Annex 1



Location Map of the Palestine's

Annex 2

DSM-IV Diagnostic Criteria for Generalized Anxiety Disorder

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).

B. The person finds it difficult to control the worry.

C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past 6 months). Note: *Only one item is required in children.*

(1) Restlessness or feeling keyed up or on edge.

(2) Being easily fatigued.

(3) Difficulty concentrating or mind going blank.

(4) Irritability.

(5) Muscle tension.

(6) Sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep).

D. The focus of the anxiety and worry is not confined to features of an Axis I disorder, e.g., the anxiety or worry is not about having a panic attack (as in panic disorder), being embarrassed in public (as in social phobia), being contaminated (as in OCD), being away from home or close relatives (as in separation anxiety disorder), gaining weight (as in anorexia nervosa), having multiple physical complaints (as in somatization disorder), or having a serious illness (as in hypochondriasis), and the anxiety and worry do not occur exclusively during PTSD.

E. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

F. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism), and does not occur exclusively during a mood disorder, psychotic disorder, or a pervasive developmental disorder.

Annex 3

DSM-IV Diagnostic Criteria for Specific Phobia

- A.** Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation (e.g., flying, heights, animals, receiving an injection, seeing blood).
- B.** Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which may take the form of a situationally bound or situationally predisposed panic attack. Note: in children, the anxiety may be expressed by crying, tantrums, freezing, or clinging.
- C.** The person recognizes that the fear is excessive or unreasonable. Note: in children, this feature may be absent.
- D.** The phobic situation(s) is avoided, or else endured with intense anxiety or distress.
- E.** The avoidance, anxious anticipation, or distress in the feared situation(s) interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships with others, or there is marked distress about having the phobia.

F. In individuals under age 18 years, the duration is at least 6 months.

G. The anxiety, panic attacks, or phobic avoidance associated with the specific object or situation are not better accounted for by another mental disorder, such as obsessive-compulsive disorder (e.g., fear of dirt in someone with an obsession about contamination), posttraumatic stress disorder (e.g., avoidance of stimuli associated with a severe stressor), separation anxiety disorder (e.g., avoidance of school), social phobia (e.g., avoidance of social situations because of fear of embarrassment), panic disorder with agoraphobia, or agoraphobia without history of panic disorder.

Specify type:

Animal type

Natural environment type (e.g., heights, storms, and water)

Blood-injection-injury type

Situational type (e.g., planes, elevators, enclosed places)

Other type (e.g., phobic avoidance of situations that may lead to choking, vomiting, or contracting an illness; in children, avoidance of loud sounds or costumed characters)

Annex 4

DSM-IV Criteria for Panic Attack

Note: A panic attack is not a codable disorder. Code the specific diagnosis in which the panic attack occurs (e.g., panic disorder with agoraphobia).

A discrete period of intense fear or discomfort, in which four (or more) of the following symptoms developed abruptly and reached a peak within 10 minutes:

- (1) Palpitations, pounding heart, or accelerated heart rate
- (2) Sweating
- (3) Trembling or shaking
- (4) Sensations of shortness of breath or smothering
- (5) Feeling of choking
- (6) Chest pain or discomfort
- (7) Nausea or abdominal distress
- (8) Feeling dizzy, unsteady, lightheaded, or faint
- (9) Derealization (feelings of unreality) or depersonalization (being detached from oneself)
- (10) Fear of losing control or going crazy
- (11) Fear of dying
- (12) Paresthesias (numbness or tingling sensations)

(13) Chills or hot flushes

DSM-IV recognizes three types of panic attacks:

- 1- The unexpected or spontaneous panic attack occurs without cue or warning, as that one occurs in panic disorder arising without any trigger or environmental cue
- 2- The situationally bound panic attack occurs upon exposure to, or in anticipation of, exposure to a feared stimulus
- 3- The situationally predisposed panic attack is more likely to occur, but does not necessarily have to occur, on exposure to a situational trigger.

Annex 5

DSM-IV Criteria for Major Depressive Episode

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

Note: Do not include symptoms that are clearly due to a general medical condition, or mood-incongruent delusions or hallucinations.

(1) Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: in children and adolescents, can be irritable mood.

(2) Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation made by others)

(3) Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. Note: in children, consider failure to make expected weight gains.

(4) Insomnia or hypersomnia nearly every day

(5) Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

(6) Fatigue or loss of energy nearly every day

(7) Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

(8) Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)

(9) Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. The symptoms do not meet criteria for a mixed episode.

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

E. The symptoms are not better accounted for by bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

1) DEPRESSED MOOD The term "depressed mood" refers to negative affective arousal. In severe form, suicide may represent an attempt to find deliverance from such unrelenting psychic torment; death can be experienced as comforting.

Patients with a milder form of the malady typically seen in primary care settings might deny experiencing mournful moods and instead complain of physical agony from headache, epigastric pain, precordial distress, and so on, in the absence of any evidence of diagnosable physical illness.

2) ANHEDONIA AND LOSS OF INTEREST Paradoxically, the heightened perception of pain in many persons with depressive disorder is accompanied by an inability to experience normal emotions. Patients exhibiting the disturbance may lose the capacity to cry, a deficit that is reversed as the depression is lifting.

When mild, anhedonia evidences with decreased interest in life. Later, patients complain that they have lost all interest in things.

Annex 6

DSM-IV Criteria for Minor Depressive Disorder

A. A mood disturbance, defined as follows:

(1) At least two (but less than five) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (a) or (b):

(a) Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: In children and adolescents, can be irritable mood

(b) Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

(c) Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. Note: In children, consider failure to make expected weight gains

(d) Insomnia or hypersomnia nearly every day

(e) Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

(f) Fatigue or loss of energy nearly every day

(g) Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

(h) Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)

(I) Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

(2) The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

(3) The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism)

(4) The symptoms are not better accounted for by bereavement (i.e., a normal reaction to the death of a loved one)

B. There has never been a major depressive episode, and criteria are not met for dysthymic disorder

C. There has never been a manic episode, a mixed episode, or a hypomanic episode, and criteria are not met for cyclothymic disorder. Note: This exclusion does not apply if all of the manic-, mixed-, or hypomanic-like episodes are substance or treatment induced
D. The mood disturbance does not occur exclusively during schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, or psychotic disorder not otherwise specified

Annex 7

DSM-IV Diagnostic Criteria for Posttraumatic Stress Disorder (PTSD)

A. The person has been exposed to a traumatic event in which both of the following were present:

(1) The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others

(2) The person's response involved intense fear, helplessness, or horror. **Note:** in children, this may be expressed instead by disorganized or agitated behavior

B. The traumatic event is persistently re-experienced in one (or more) of the following ways:

(1) Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: in young children, repetitive play may occur in which themes or aspects of the trauma are expressed

(2) Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognizable content

(3) Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). Note: in young children, trauma-specific reenactment may occur.

(4) Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

(5) Physiologic reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

(1) Efforts to avoid thoughts, feelings, or conversations associated with the trauma

- (2) Efforts to avoid activities, places, or people that arouse recollections of the trauma
- (3) Inability to recall an important aspect of the trauma
- (4) Markedly diminished interest or participation in significant activities
- (5) Feeling of detachment or estrangement from others
- (6) Restricted range of affect (e.g., unable to have loving feelings)
- (7) Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

- (1) Difficulty falling or staying asleep
- (2) Irritability or outbursts of anger
- (3) Difficulty concentrating
- (4) Hypervigilance
- (5) Exaggerated startle response

E. Duration of the disturbance (symptoms in criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than 3 months

Chronic: if duration of symptoms is 3 months or more

Specify if:

With delayed onset: onset of symptoms at least 6 months after the stressor

Annex 8

DSM-IV Diagnostic Criteria for Mood Disorder Due to a General Medical Condition

A. A prominent and persistent disturbance in mood predominates in the clinical picture and is characterized by either (or both) of the following:

- (1) Depressed mood or markedly diminished interest or pleasure in all, or almost all, activities
- (2) Elevated, expansive, or irritable mood

B. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition.

C. The disturbance is not better accounted for by another mental disorder (e.g., adjustment disorder with depressed mood, in response to the stress of having a general medical condition).

D. The disturbance does not occur exclusively during the course of delirium or dementia.

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify type:

With depressive features: if the predominant mood is depressed but the full criteria are not met for a major depressive episode

With major depressive-like episode: if the full criteria are met (except criterion D) for a major depressive episode

With manic features: if the predominant mood is elevated, euphoric, or irritable

With mixed features: if symptoms of both mania and depression are present and neither predominates

Annex 9

DSM-IV Diagnostic Criteria for Dysthymic Disorder

A. Depressed mood for most of the day, for more days than not, as indicated either by subjective account or observation by others, for at least 2 years. Note: In children and adolescents, mood can be irritable and duration must be at least 1 year.

B. Presence, while depressed, of two (or more) of the following:

(1) Poor appetite or overeating

- (2) Insomnia or hypersomnia
- (3) Low energy or fatigue
- (4) Low self-esteem
- (5) Poor concentration or difficulty making decisions
- (6) Feelings of hopelessness

C. During the 2-year period (1 year for children or adolescents) of the disturbance, the person has never been without the symptoms in criteria A and B for more than 2 months at a time.

D. No major depressive episode has been present during the first 2 years of the disturbance (1 year for children and adolescents); i.e., the disturbance is not better accounted for by chronic major depressive disorder, or major depressive disorder, in partial remission.

Note: There may have been a previous major depressive episode provided there was a full remission (no significant signs or symptoms for 2 months) before development of the dysthymic disorder. In addition, after the initial 2 years (1 year in children or adolescents) of dysthymic disorder, there may be superimposed episodes of major depressive disorder, in which case both diagnoses may be given when the criteria are met for a major depressive episode.

E. There has never been a manic episode, a mixed episode, or a hypomanic episode, and criteria have never been met for cyclothymic disorder.

F. The disturbance does not occur exclusively during the course of a chronic psychotic disorder, such as schizophrenia or delusional disorder.

G. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

H. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Early onset: if onset before age 21 years

Late onset: if onset is age 21 years or older

Specify (for most recent 2 years of dysthymic disorder):

With atypical features

DSM-IV Alternative Research Criterion B for Dysthymic Disorder

B. Presence, while depressed, of three (or more) of the following:

- (1) Low self-esteem or self-confidence, or feelings of inadequacy.
- (2) Feelings of pessimism, despair, or hopelessness.
- (3) Generalized loss of interest or pleasure.
- (4) Social withdrawal.
- (5) Chronic fatigue or tiredness.
- (6) Feelings of guilt, brooding about the past.
- (7) Subjective feelings of irritability or excessive anger.
- (8) Decreased activity, effectiveness, or productivity.
- (9) Difficulty in thinking, reflected by poor concentration, poor memory, or indecisiveness.

Annex 10

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Annex 11

بسم الله الرحمن الرحيم

عزيزتي ألام..

السلام عليكم ورحمة الله وبركاته...

تقوم الباحثة بعمل دراسة وصفية لمعرفة تأثير المرض على الصحة النفسية والعقلية على الأطفال من سن 6-12 سنة ، لذا
ترجو منك بالإجابة على فقرات الاختبار بصراحة وصدق و أمانة حسب إحساس الطفل مع العلم أن جميع البيانات المدونة
سوف تكون سرية ولا تستخدم إلا لأغراض البحث العلمي فقط ولا داعي لذكر الاسم.

ملاحظة :-

الرجاء وضع علامة X في المكان المخصص لذلك دون ترك أي سؤال حيث أنه لا توجد إجابة صحيحة وإجابة خاطئة

الباحثة //

منى عبد الهادي منصور

12 - 9

9 - 6

// العمر

أنثى

ذكر

// الجنس

ريية خيم

مدينة

// العنوان

..... / مستوي الدراسة

// كيفية اكتشاف المرض

أخرى

الـ

بـ

// تاريخ اكتشاف المرض

من سنتين

سنتان

12 شهر

6 شهور

بـ

التشخيص :-

// نوع العلاج

جراحي

باغ ذري

باوي

// نتيجة العلاج

لم يتحسن

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Annex 12

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Annex 13

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Annex 14

PTSD Scale according to DSM--IV



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Annex 15

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Date: 11/9/2005

التاريخ: 2005/9/11

Mrs./ Mona Mansour

السيدة: منى منصور

I would like to inform you that the committee
has discussed your application about:

نفيديكم علماً بأن اللجنة قد ناقشت مقترح دراستكم
حول:-

**Psychiatric Disorder among Children
Attending Cancer Unit in El Nasser Pediatric
Hospital-Gaza.**

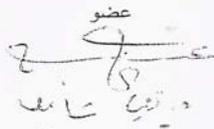
**In its meeting on September 2005
and decided the Following:-
To approve the above mention research study.**

و ذلك في جلستها المنعقدة لشهر سبتمبر 2005
و قد قررت ما يلي:-
الموافقة على البحث المذكور عالياه.

الموافق لخطه
د. طارق الطرند

Signature
توقيع

Member

عضو


Member

عضو


Chairperson



Conditions:-

- ❖ Valid for 2 years from the date of approval to start.
- ❖ It is necessary to notify the committee in any change in the admitted study protocol.
- ❖ The committee appreciate receiving one copy of your final research when it is completed.