

## The Relationship between Mothers' Mental Health and the Prevalence of Depression and Anxiety of Preschool Children after the War on Gaza Strip

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العلاقة بين الصحة النفسية للأمهات وانتشار الإكتئاب والقلق بين الأطفال ما قبل المدرسة في قطاع غزة بعد الحرب

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### Abstract

**O**bjective: The present study investigated the prevalence of depression and anxiety among preschool children and relationship to mothers' mental health. **Participants:** A sample of 380 preschool children aged 4-6 years with their mothers were selected from 24 kindergartens in the Gaza Strip. **Method:** Children were assessed by maternal reports for depression and anxiety; their mothers were assessed using the General Health Questionnaire-28. **Results:** Results showed the mean anxiety score for preschool children was 27.46, generalized anxiety mean was 3.42, social anxiety was 3.94, obsessive compulsive disorder was 4.92, physical injury fear was 10.47, and separation anxiety 4.94. No gender differences in showing anxiety symptoms except for physical injury fear which was greater in girls than boys. Anxiety problems were greater in children with low family income; no significant differences between the means of preschoolers' anxiety problems according to type of residence or number of siblings. Mean depression was 33.10, mean lack of vitality and worthlessness was 12.98, mean loneliness and anxiety was 9.03, and mean anger and aggression 7.37. There were significant differences in depression for children with low family income although no significant differences according to type of residence. For mothers, mean total GHQ scale was 6.54, somatic symptoms was 1.80; mean anxiety and insomnia was 2.18, mean social dysfunction was 1.26, and severe depression was 1. Using 4/5 cut-off points, cases of mothers according to GHQ-28 were 185 (53.6%) and 160 (46.3%) were not cases. **Conclusion:** There was a significant positive correlation between mental health problems of mothers and subscales and depression and anxiety and subscales of their children.

**Key words:** Preschool children anxiety, depression, Mothers' mental health

**Declaration of interest:** None

### Introduction

Anxiety disorders are among the most common and functionally impairing mental health disorders to occur in childhood and adolescence. An epidemiologic study with preschoolers included a sample of 307 children, ages 2 to 5 years recruited through pediatric practices in semirural North Carolina, drawn from Durham and the surrounding rural area<sup>1</sup>. Egger and Angold reported a 2.4%, prevalence rate for separation anxiety, 6.5% for generalized anxiety and 2.1%, for depression. Others reported point-prevalence estimates averaging 2.5 to 5% in community samples<sup>2</sup>. A study in Trondheim, Norway of all children born between 2003 and 2004, who attended a regular community health check-up for 4-year-olds, found the prevalence of anxiety disorders was 1.5%<sup>3</sup>.

Recently, in a two-stage study, parents of 339 children aged 4–6 years who came for a medical check-up at three primary care centers in Reykjavik were recruited for assessment of anxiety disorder in their children. Anxiety disorder in the population studied was a reported 5.7%<sup>4</sup>. Depression is one of the psychiatric categories of major interest for both clinicians and researchers. Most of the

epidemiological studies conducted in recent years using standardized methods of data collection based on DSM diagnostic criteria for depressive disorder report prevalence rates of major depression in children ranging from 0.4% to 2.5%<sup>5</sup>. There are only a few reports available on the prevalence of mood disorders in preschool children mainly due to the complexity of diagnosis. Prevalence rates of emotional disorders in children of this age-range were found to be less than 1%, and the prevalence of depression, not otherwise specified, was 0.3%<sup>6</sup>. Moreover, a study of prevalence of ADHD, ODD, depression, and anxiety in 796 children, aged 4 years old, who were recruited from schools and pediatric practices in a diverse, urban area found MDD ranging from zero with the algorithm-based questionnaire to a high of 2.1% with a structured interview; dysthymia rate was with rates below 1%.

However, previous studies have focused mostly on children aged 6 years and older. Although a growing body of data suggested that depression does exist among preschoolers, skepticism remains about whether it is clinically meaningful or increases the later risk of psychiatric conditions, similar to childhood depression,

which is not a developmentally transient syndrome but rather shows chronicity and/or recurrence. The results underscore the clinical and public health importance of identification of depression as early as preschool. Depression in preschool-aged children does not always look the same as depression in older children and adults, which is one reason why preschool depression has been largely neglected<sup>8</sup>. In a study of all children born between 2003 and 2004 in Trondheim, Norway, who attended the regular community health check-up for 4-year-olds, the prevalence of depressive disorders was found to be 2.0%<sup>3</sup>.

A number of studies have consistently found that a mother's mental health (particularly her level of depression) is a strong predictor of mental health problems experienced by her children. The psychological wellbeing of parents had been found to be a major risk factor for child development<sup>9</sup>. In addition, preschool depression may go unnoticed by parents because the symptoms may not be disruptive; these children may not seem obviously sad (as do many depressed adults) and may have periods of normal functioning during the day. A study of Palestinian mothers and their children found that PTSD in children was the best predictor of mothers' psychopathology<sup>10</sup>. Other studies had documented the influence of environmental factors, including parenting, on children's behavior and psychosocial functioning<sup>11</sup>.

The aim of the present study was to investigate the prevalence of depression and anxiety among preschool children and relationship to mothers' mental health and other socioeconomic variables in Gaza Strip after the war on Gaza on 2008-2009.

## Methodology

### Participants

The study population includes all children in Gaza Strip between the ages 4-6 who were found in 303 kindergartens totaling 31,689 children of whom 15,588 were boys (49.2%), and 16,101 were girls (50.8%) with their mothers<sup>12</sup>. The study sample consisted of randomly systematic cluster sample of 380 preschool children aged 4-6 years with their mothers. This study sample was selected from 24 kindergartens, 4 kindergartens from and equal number of children from each kindergarten was selected randomly from the registration book (North Gaza, East Gaza, West Gaza, Middle area, Khan Younis, and Rafah). The total number of questionnaires returned were 345, 174 (50.4%) were boys and 171 (49.6%) were girls with response rate of 90.7%.

## Instruments

### Sociodemographic questionnaire

A questionnaire to be completed by the parents was devised specifically for the present study in order to obtain information about the participants, including gender, age, number of brothers and sisters, birth order, health problems, area of residence, family income, maternal age, maternal education, and maternal occupation.

### General Health Questionnaire-28<sup>13,14,15,16</sup>

*Maternal mental health:* Ratings based on the General Health Questionnaire (GHQ-28). It covers severe depression and suicidal risk, anxiety and insomnia, social dysfunction, and somatic symptoms (10). Emphasis is on changes in condition so items compare current mental state to the person's normal mental health status.

GHQ-28 scores above the cutoff of 4/5 are considered to be possible psychiatric cases. In a previous study, Cronbach's alpha was 0.91 and test-retest coefficient after six months was 0.90. Validation of GHQ-28 as determined by comparison with the Clinical Interview Schedule yielded a sensitivity of 88.0 percent and specificity of 84.2 percent. This scale had been validated in the Arabic culture and showed reliability and validity<sup>15,16</sup>. The internal consistency of the scale, calculated using Cronbach's alpha, was  $\alpha=0.91$  and split half was 0.88.

### Spence Children's Anxiety Scale (SCAS)<sup>17</sup>

A preschool version (The Preschool Anxiety Scale) was adapted from the Spence Children's Anxiety Scale (SCAS)<sup>18</sup>. The Arabic version used in the current study consisted of 28 statements that describe anxiety of preschool children. It assessed generalized anxiety (1, 4, 8, 14, 28), social phobia (social anxiety) (2, 5, 11, 15, 19, 23), separation anxiety (6, 12, 16, 22, 25), obsessive-compulsive disorder (3, 9, 18, 21, 27), and physical injury fear (7, 10, 13, 17, 20, 24, 26). For each item, parent circles the response that best describes her/his child, e.g. circling 4 if the statement is "very often true", 3 if the statement is "quite often true", 2 if the statement is "sometimes true", 1 if the statement is "seldom true" or if it is "not true at all" circle 0. Parents were encouraged to answer all statements as well as she/he can even if some do not seem to apply to her/his child. In this study we tested the reliability of the SCAS as follows: generalized anxiety (5 items) where the value of alpha = (0.61) and the value of split half = (0.53), social anxiety (6 items) where the value of alpha = (0.68) and

the value of split half = (0.73), OCD (5 items) where the value of alpha = (0.57) and the value of split half = (0.41), physical injury anxiety (6items) where the value of alpha = (0.76) and the value of split half = (0.69), separation anxiety ( 5 items) where the value of alpha = (0.57) and the value of split half = (0.43).

#### ***The Preschool Children Depression Checklist (PCDC)***<sup>6</sup>

Depressive symptoms were transformed into 32 questions that cover an array of depressive behaviors in this age range (mood, affects, interaction with peers and with adults, play characteristics, somatic and vegetative disturbances, etc.). The Arabic version of the scale used in the current study consisted of 32 items. Items on the checklist were scored on a severity scale of 0 to 4 (0 = never observed; 1 = rarely observed; 2 = sometimes observed; 3 = often observed; 4 = always observed)<sup>4</sup>. The 32 questions cover an array of depressive behaviors preschool children where lack of vitality and worthlessness (2, 3, 6, 8, 9, 14, 15, 16, 17, 19, 22, 23, 28, 30), loneliness and anxiety (11, 12, 13, 18, 24, 25, 26, 31), while anger and aggression (4, 5, 21, 27, 29). In the current study reliability of the depression scale for preschool children was as follows: lack of vitality and worthlessness (14 items), alpha Chronbach was 0.84 and split half = (0.81), loneliness and anxiety (8 items), alpha Chronbach was 0.66, and split half = (0.56), anger and aggression (5 items) alpha Chronbach was 0.57 and split half = (0.57).

#### **Study procedure**

An approval letter was obtained from an authorized ethical committee within the Ministry of Health to allow the researcher to carry out the study. The researchers trained a team of three mental health professionals to help in data collection. The team collected data after meeting with the principal of each of the 24 kindergartens chosen randomly from Gaza Strip. We explained the purpose of the study then we asked them to select randomly from the registration book the number of children already prepared in a list for sampling. The mothers received a written form to sign explaining the study purpose and stressing that the data will be kept with the researchers for scientific research and will not carry any threat or harm to the children or mothers. The mothers were interviewed by researchers and field workers inside the kindergartens and every interview continued for 30 minute. The response rate was (90.7 %).

#### **Statistical analysis**

Data was entered by the statistical Package for Social Sciences (SPSS) ver. 18. Descriptive statistics including frequencies for socio-demographic variables, preschool anxiety items, preschool depression items, and for General Health Questionnaire-28 items was used. T-Independent test was used to test gender differences in depression and anxiety. One way ANOVA test was used to study the differences in means of preschoolers' anxiety and depression according to age, family income, and type of residence; also it was used to study the difference in means of mothers' mental health problems according to family income and number of sons. Pearson correlation test was used to demonstrate the relationship between preschool children anxiety and depression scales and mothers' mental health.

#### **Results**

##### ***Socio-demographic characteristics of the study sample***

As shown in Table 1, the total number of questionnaires returned were 345, 174 (50.4%) boys and 171 (49.6%) girls with response rate of 90.7%. Ages ranged from 4-6 years with mean age 5.13 years (SD=0.64). Regarding their place of residence, 21.2% of children were from North Gaza, 33.9% were from Gaza, 13.6% from Middle zone,<sup>19</sup> .1% from Khan Younis, and 12.2% from Rafah. Regarding the number of siblings, 52.5% had less than four, 35.9% had from five to seven and 11.6% had eight or more siblings Regarding mothers' education, 1.4% were illiterate, 3.8% had elementary education, 22.3% primary education, 41.7% had secondary education, 6.7% had diploma, 22.0% had a university degree, and 2.0% had postgraduate education. Regarding mothers job, 91.6% of mothers were housewives, 2.6% were simple workers, and 5.8% were civil employees. For family monthly income 55.1% had family income less than 300 USD, 22.0% had family income ranged between 301-600 USD, 13.9%, had family income ranged between 601-750 USD, and 9.0% had income of 751 USD and more.

**Table 1:** Socio-demographic characteristics of the study sample (N=345)

Items	No.	%
<b>Gender</b>		
Boys	174	50.4
Girls	171	49.6
<b>Age of children 4-6 years (Mean =5.13, SD = 0.64)</b>		
<b>Number of siblings</b>		
Less than 4	181	52.5
5-7 siblings	124	35.9
More than 8 siblings	40	11.6
<b>Place of residence</b>		
North Gaza	73	21.2
Gaza	117	33.9
Middle zone	47	13.6
Khan Younis	66	19.1
Rafah	42	12.2
<b>Mothers' education</b>		
Illiterate	5	1.4
Elementary	13	3.8
Primary	77	22.3
Secondary	144	41.7
Diploma	23	6.7
University	76	22.0
Postgraduate	7	2.0
<b>Mothers' work</b>		
Housewife	316	91.6
Simple worker	2	2.6
Civil employee	20	5.8
<b>Family monthly income</b>		
Less than 300 USD	190	55.1
301–600 USD	76	22.0
601 - 750 USD	48	13.9
751 USD and more	31	9.0

**Children anxiety and depression**

*Means of preschool anxiety*

Table 2 (below) shows that means of total anxiety was 27.46, generalized anxiety 3.42, social anxiety 3.94, obsessive compulsive disorder 4.92, physical injury fear 10.47, separation anxiety 4.94. T independent t-test was done comparing means of anxiety problems according to

gender. The *t*-test results showed that there were no significant gender differences in total anxiety problems and other subscales, but there was a significant difference in means of physical injury fear toward girls (boys mean = 9.68, vs. girls mean = 11.26) (*t*= -2.24, *p*= 0.03).

**Table 2.** Means and standard deviations of preschool anxiety scales

Preschool anxiety problems	Mean	SD
Total anxiety scale	27.46	16.63
Generalized anxiety disorder	3.42	3.09
Social anxiety disorder	3.94	3.80
Obsessive compulsive disorder	4.92	3.47
Physical injury fears	10.47	6.53
Separation anxiety	4.94	3.91

**Anxiety problems of preschool children and sociodemographic variables**

In order to investigate the differences in anxiety and other sociodemographic variables, such as place of

residence, number of siblings, family monthly income a one-way ANOVA test was used to find the differences in which the anxiety and subscales were entered as dependent variable and other socioeconomic variables as

independent variables. Post hoc tests using Bonferroni test showed that there were significant differences between the means of total anxiety problems according to family income for children from families with income less than 300 USD. Results showed that means of total anxiety problems were less in children from families with high family income than the other groups. However, there were no significant differences between the means of preschoolers' anxiety problems according to type of residence or number of siblings.

**Means of preschool depression**

Table 3 (below) shows that means of total depression scale was 33.10, lack of vitality and worthlessness was 12.98, loneliness and anxiety was 9.03, anger and aggression was 7.37.

**Table 3:** Means of preschool depression scales

Depression subscales	Mean	SD
<b>Total depression scale</b>	33.10	18.43
<b>Lack of vitality and worthlessness</b>	12.98	8.90
<b>Loneliness and anxiety</b>	9.03	5.27
<b>Anger and aggression</b>	7.37	3.92

In order to investigate gender differences in depression symptoms, an independent *t*-test was performed. The present study showed that mean depression for boys was 34.25 (SD=17.16) and 31.94 for girls (SD=19.62), mean of lack of vitality and worthlessness for boys was 31.74 (SD=8.72) and mean for girls was 12.21 (SD=9.03), mean for loneliness and anxiety for boys was 9.01 (SD=4.85) and for girls was 9.05 (SD=5.67), and mean anger and aggression for boys was 7.67 (SD=3.79) and for girls was 7.07 (SD= 4.03). No statistically significant differences between boys and girls in depression and all subscales.

In order to investigate the differences in depression and other sociodemographic variables, such as place of residence, number of sibling, a one-way ANOVA test was used. Post hoc tests using Bonferroni test showed that there were significant differences between the means of preschoolers' depression problems according to family income for children with family income of less than 300 USD. There were no significant differences between the means of preschoolers' depression problems according to type of residence or number of siblings.

**Mothers' Mental Health**

*Frequency of Mental health problems using General Health Questionnaire-28*

Results showed that the most common symptoms were "Been getting edgy and bad-tempered?" 47.2%, "Been feeling run down and out of sorts?" 42.0%; however, the lowest items answered yes were "Found the idea of taking your own life kept coming into your mind?" 0.9% and "Been thinking of yourself as a worthless person?" 7.5%.

**Means of mothers' general health**

Table 4 (below) shows that mean for total GHQ scale was 6.54, mean somatic symptoms was 1.80, anxiety and insomnia was 2.18, social dysfunction was 1.26, and severe depression was 1. Using 4/5 cut-off points, according GHQ-28 cases of mothers were 185 (53.6%) and 160 (46.4%) were not cases.

**Table 4:** Means of mothers' general health questionnaire scales

General health subscales	Mean	SD
<b>Total General Health Questionnaire</b>	6.54	6.02
<b>Somatic symptoms</b>	1.80	2.02
<b>Anxiety and insomnia</b>	2.18	2.23
<b>Social dysfunction</b>	1.26	1.53
<b>Severe depression</b>	1	2

**Relationship between mothers' mental health and preschool children anxiety**

In order to find the relationship between mothers' mental health and preschool children's depression and anxiety, a coefficient correlation test was conducted using the Pearson correlation test. Results showed there were positive correlations between all preschool children anxiety problems and total general health questionnaire and subscale of mothers. Table 5 (below) shows that total health problems of mothers was correlated and total anxiety scale of preschoolers ( $r=0.44$ ,  $p<0.001$ ), generalized anxiety ( $r=0.45$ ,  $p<0.001$ ), social anxiety ( $r=0.34$ ,  $p<0.001$ ), obsessive compulsive disorder ( $r=0.27$ ,  $p<0.001$ ), physical injury fear ( $r=0.34$ ,  $p<0.001$ ), and separation anxiety ( $r=0.32$ ,  $p<0.001$ ). Somatic symptoms scale of mothers was correlated with total anxiety of preschoolers ( $r=0.44$ ,  $p< 0.001$ ), generalized anxiety, ( $r=0.45$ ,  $p< 0.001$ ), social anxiety ( $r=0.34$ ,  $p<0.001$ ), obsessive compulsive disorder ( $r=0.27$ ,  $p<0.001$ ), physical injury fear scales of preschoolers ( $r=0.34$ ,  $p< 0.001$ ), and separation anxiety ( $r=0.32$ ,  $p<0.001$ ). Anxiety and insomnia of mothers were correlated with total anxiety of preschoolers ( $r=0.39$ ,  $p<0.001$ ), generalized anxiety ( $r=0.43$ ,  $p<0.001$ ), social anxiety ( $r=0.28$ ,  $p< 0.001$ ); obsessive compulsive

( $r=0.24, p<0.001$ ), physical injury fear ( $r=0.31, p<0.001$ ), and separation anxiety ( $r=0.29, p<0.001$ ). Social dysfunction scale of mothers and total anxiety scale of preschoolers ( $r=0.29, p<0.001$ ), generalized anxiety ( $r=0.26, p<0.001$ ), social anxiety ( $r=0.23, p<0.001$ ), obsessive compulsive ( $r=0.17, p<0.001$ ), physical injury

fear ( $r=0.23, p<0.001$ ), and separation anxiety scales of preschoolers ( $r=0.22, p<0.001$ ). Severe depression scale of mothers was correlated with total anxiety ( $r=0.43, p<0.001$ ), generalized anxiety ( $r=0.42, p<0.001$ ), social anxiety ( $r=0.34, p<0.001$ ), obsessive compulsive disorder ( $r=0.26, p<0.001$ ), physical injury fear ( $r=0.34, p<0.001$ ), and separation anxiety ( $r=0.31, p<0.001$ ).

**Table 5:** Correlation between mothers' mental health and preschool anxiety scales

	Total GHQ	Somatic Symptoms	Anxiety and Insomnia	Social Dysfunction	Severe Depression
<b>Total anxiety scale</b>	0.44**	0.44**	0.39**	0.29**	0.43**
<b>Generalized anxiety</b>	0.45**	0.45**	0.43**	0.26**	0.42**
<b>Social anxiety</b>	0.34**	0.34**	0.28**	0.23**	0.34**
<b>Obsessive compulsive disorder</b>	0.27**	0.27**	0.24**	0.17**	0.26**
<b>Physical injury fear</b>	0.34**	0.34**	0.31**	0.23**	0.34**
<b>Separation anxiety</b>	0.32**	0.32**	0.29**	0.22**	0.31**
<b>P ≤ 0.05*, P ≤ 0.01**, P ≤ 0.001***</b>					

**Relationship between mothers' mental health and preschool children depression**

Table 6 (below) shows that total mothers' mental health problems using GHQ scale and total depression symptoms of preschoolers ( $r=.43, p<0.001$ ); lack of vitality and worthlessness ( $r=0.35, p<0.001$ ), loneliness and anxiety ( $r=0.40, p<0.001$ ), anger and aggression ( $r=0.40, p<0.001$ ). Somatic symptoms of mothers was correlated with total depression symptoms of children ( $r=.43, p<0.001$ ); lack of vitality and worthlessness ( $r=0.35, p<0.001$ ); loneliness and anxiety symptoms of ( $r=0.40, p<0.001$ ); and anger and aggression symptoms of preschoolers ( $r=0.40, p<0.001$ ). Insomnia scale of mothers and total depression symptoms ( $r=0.38,$

$p<0.001$ ), lack of vitality and worthlessness ( $r=0.31, p<0.001$ ); loneliness and anxiety ( $r=0.38, p<0.001$ ); anger and aggression ( $r=.34, p<0.001$ ). Social dysfunction symptoms of mothers was correlated with total depression symptoms of preschoolers ( $r=0.31, p<0.001$ ), lack of vitality and worthlessness ( $r=0.25, p<0.001$ ), loneliness and anxiety ( $r=0.27, p<0.001$ ), social dysfunction anger and aggression symptoms ( $r=0.29, p<0.001$ ). Severe depression of mothers was correlated with total depression symptoms of preschoolers ( $r=0.37, p<0.001$ ), lack of vitality and worthlessness ( $r=0.31, p<0.001$ ), loneliness and anxiety ( $r=0.34, p<0.001$ ), and anger and aggression ( $r=0.34, p<0.001$ ).

**Table 6:** Correlations between mothers' mental health and preschool depression scales

	Total GHQ	Somatic Symptoms	Anxiety and Insomnia	Social Dysfunction	Severe Depression
<b>Total depression scale</b>	0.43**	0.43**	0.38**	0.31**	0.37**
<b>Lack of vitality and worthlessness</b>	0.35**	0.35**	0.31**	0.25**	0.31**
<b>Loneliness and anxiety</b>	0.40**	0.40**	0.38**	0.27**	0.34**
<b>Anger and aggression</b>	0.40**	0.40**	0.34**	0.29**	0.34**
<b>Note: p ≤ 0.05*, p ≤ 0.01**, p ≤ 0.001***</b>					

**Discussion**

The current study investigated the relationship between mothers' mental health and depression and anxiety among a sample of preschool children in Gaza Strip after war on Gaza. Results showed that the mean total preschool anxiety scales was 27.46, generalized anxiety was 3.42, social anxiety was 3.94, obsessive compulsive

disorder was 4.92, physical injury fear was 10.47, and separation anxiety was 4.94.

The current study found only significant differences in means of physical injury fear as one of the anxiety problems experienced by girls. This result was consistent with the study which reported no gender differences for generalized anxiety disorder, and separation anxiety

disorder, at any level of impairment<sup>7</sup>. In another study to validate the new version of preschool children scale, the study showed that the only gender difference across the Revised Preschool Anxiety Scale (PAS-R) scales was that girls scored higher than boys on specific fears only according to mothers' reports<sup>19</sup>. These data are consistent with other studies that have failed to demonstrate gender differences in anxiety symptoms at the pre-school age<sup>1</sup>.

Examination of gender differences also provided an interesting result. No significant differences were found between boys and girls in a large sample of 3 to 5 year olds for the total symptom ratings or any of the factor scores<sup>17</sup>. This finding contrasts with much of the literature relating to older children in whom it has been widely concluded that girls manifest higher levels of anxiety and anxiety disorders than boys<sup>20</sup>. Another study of pre-school Palestinian children in the Gaza Strip, aged 4 to 6 years, found no significant gender differences in total behavioral and emotional problems in preschool<sup>21</sup>.

In contrast with older children, who often present with post-traumatic stress and depressive disorders, pre-school children may respond through increased nonspecific behavioral problems and symptoms of underlying anxiety, such as those reported by parents in the present study. The high prevalence rates of certain symptoms; for example, the increased frequency of temper tantrums, fears, overactivity, attention seeking and poor concentration might be associated with exposure to trauma<sup>22</sup>. In this area of war and conflict, boys are more exposed to trauma and physical injury is represented as heroism especially when the injury is war-related. Even children were proud of injury, but girls had more fears due to concerns about their appearance.

The results of the current study also showed significant differences between the means of preschoolers' anxiety problems according to family income for children from families with incomes of less than 300 USD. We attributed this result to the inability of low income families in Gaza Strip to meet the basic needs of their children, which probably forces some parents to use violent ways of disciplining children as an expression of their failure to meet their needs. Therefore, this parental rearing could increase the anxiety and fear experienced by preschoolers.

Our study was consistent with studies which found low income parents reporting higher levels of frustration and aggravation with their children resulting in those children being more likely to have poor verbal development as

well as exhibiting higher levels of distractibility and hostility<sup>23</sup>. The results of the current study showed no significant differences between the means of preschoolers' anxiety problems according to type of residence. This result was expected because the Gaza Strip's entire population shares similar levels of high poverty and also socioeconomic characteristics.

For depression, the current study showed that the mean of total preschool depression scale was 33.10, for lack of vitality and worthlessness 12.98, loneliness and anxiety 9.03, anger and aggression 7.37. It is obvious that the most common depression symptoms were lack of vitality and worthlessness. According to the researchers' points of view, lack of vitality and worthlessness is the core of depression problems and the researchers hypothesized that the lack of vitality and worthlessness would be high in preschool children in Gaza Strip because of the war and conflict situation to which Palestinian children are exposed and the increased poverty level in Gaza Strip due to siege and conflict, which has escalated in the last five years. Poverty deprives children of many basic needs leaving them to feel as though they are not like other children and this outlook is often what leads to feelings of inferiority.

The current study also showed no significant differences between boys and girls regarding depression of preschool children. The result was consistent with a study in Spain which found the depression ratio between boys and girls was 1:1 24. Findings were also consistent with research that found no gender differences for major depressive disorder and dysthymia at any level of impairment<sup>7</sup>. A further study found no significant differences according to gender<sup>8</sup>. We postulated that such non-significant gender differences may be due to the actual situation in Gaza Strip whereby both boys and girls face the same political, social, and family situation which is a major source of their distress. As in anxiety, poverty is one of the risk factors in developing depression. The current study demonstrated that depression problems were greater among children from families with incomes lower than 300 USD. Other studies<sup>25</sup> have reported that children growing up in poor families are likely to have adverse home environments or face other challenges which would continue to affect their development even if family income were to increase substantially.

The results of the current study demonstrate that the cases of mothers were 185 (53.6%). High mental health problems in mothers could be attributed to continuous

stress and trauma inflicted on Palestinian mothers due to siege and blockade and after war on Gaza in 2009. Prevalence of mental health problems in mothers was higher than in that found in a study from Southern Norway, which found that clinically important psychological distress was reported by 29% of mothers<sup>26</sup>. The rate was also higher in a study that examined the relationship between psychological distress in mothers and separation anxiety disorder symptoms in children in which 35% of mothers were cases<sup>9</sup>. The results of the current study also showed mental health problems were greater in mothers where monthly family income was lower than 300 USD.

Finally, the results of the current study demonstrated that there were significant positive relationships between mothers' mental health problems and preschool children anxiety and depression in Gaza Strip. Our results were consistent with most studies that evaluated the relationship between the mental health problems of mothers and their children, which demonstrated how parental mental-health problems can compromise the parenting abilities of mothers and fathers while also representing a threat to their children's adjustment<sup>27</sup>. It has also been found that children's emotional and behavioral problems were strongly linked with maternal perceptions of attachment insecurity<sup>28</sup>. Similarly there was evidence that a significant and positive relationship existed between maternal anxiety and separation anxiety disorder in children<sup>9</sup>. A study of mothers and teachers evaluated children at age five and found an association between antenatal maternal anxiety and children's behavior rated by their mothers<sup>14</sup>. Similarly, a study of 324 preschool children, aged 4 to 6 years, showed a significant association between total mothers mental health problems and total preschool children mental health problems<sup>9</sup>.

### **Study limitations**

A possible limitation of the current study was the use of screening measures rather than extensive diagnostic or structured interview. Also, maternal reports as indicators of children's behavior will not necessarily detect emotional problems in preschool children.

### **Conclusion**

The current study contributes to the existing literature by highlighting the importance of the maternal role in preschoolers' mental health in Gaza Strip because it showed how mothers mental health and both anxiety and depression of preschoolers are positively correlated. It

showed that anxiety and depression of preschoolers are positively correlated too. Further, it showed that preschool children, whether they were boys or girls, reported the same depressive symptoms with the only clear difference being that physical injury fear was a symptom of anxiety where the results demonstrated that physical injury fear in girls was greater than in boys. Also the current study highlighted the way in which low income adversely influences the mental health of both mothers and preschoolers with an emphasis on how mothers' mental health was also adversely influenced if their sons' mental health was affected.

### **Recommendations**

In light of the current study results, the following recommendations are made within the context of the Gaza Strip: Mothers should communicate effectively in front of their children and should avoid revealing their bad feelings at the risk of these being transferred to their children. Also, mothers should promote active participation with their preschool children at home by talking with them since this has the potential to improve the relationship between mothers and their children, which would, in turn, promote better mental health for children. Training for preschool kindergarten staff in the early detection of emotional problems experienced by preschoolers would be to the children's benefit because early intervention during the preschool period has been found to be effective in ameliorating other childhood disorders. Kindergartens should reinforce activities that children prefer for recreation and to improve their mental health through activities, such as leisure trips, educational trips, and play.

### **References**

1. Egger HE, Angold A. Common emotional and behavioral disorders in preschool children: Presentation, nosology and epidemiology. *Journal of Child Psychology and Psychiatry* 2006; 47:313-337.
2. Rapee RM, Schniering CA, Hudson JL. Anxiety disorders during childhood and adolescence: Origins and treatment. *Annual Review of Clinical Psychology* 2009; 5:311-341.
3. Wichstrøm L, Berg-Nielsen TS, Angold A, Egger HL, Solheim E, Sveen TH. Prevalence of psychiatric disorders in preschoolers. *Journal of Child Psychology and Psychiatry* 2012; 53(6): 695-705.
4. Gudmundsson, OO, Magnusson P, Saemundsen E, Lauth B, Baldursson G, Skarphedinsson G, Fombonne E. Psychiatric disorders in an urban sample of preschool children. *Child and Adolescent Mental Health* 2013; 18(4): 210-217. doi:210.1111/j.1475-3588.2012.00675.x.

5. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. (4th ed, text rev) (DSM-IV-TR) 2000; Washington, DC: Author.
6. Levi G, Sogos C, Mazzei E, Paolesse C. Depressive Disorder in Preschool Children: Patterns of Affective Organization. *Child Psychiatry and Human Development* 2001; 32(1): 55-69.
7. Lavigne JV, Lebailly SA, Hopkins J, Gouze KR, Binns H J. The prevalence of ADHD, ODD, depression, and anxiety in a community sample of 4-year-olds. *Journal of Clinical Child and Adolescent Psychology* 2009; 38(3): 315-228.
8. Luby J. Preschool Depression: The Importance of Identification of Depression Early in Development. *Journal Current Directions in Psychological Science* 2010; 19 (2): 91-95.
9. Mofrad S, Abdullah R, Abu Samah B, Mansor M, Baba M. Maternal Psychological Distress and Separation Anxiety Disorder in Children. *European Journal of Social Sciences* 2009; 8 (3): 13-18.
10. Thabet AA, Abed Y, Vostanis P. The effect of trauma on Palestinian children and mothers mental health in the Gaza Strip. *Eastern Mediterranean Public Health Journal* 2001; 7: 314-321.
11. Javo C, Ronning JA, Heyerdahl S, Rudmin F W. Parenting correlates of child behavior problems in a multiethnic community sample of preschool children in northern Norway. *European Child & Adolescent Psychiatry* 2004; 13(1): 8-18.
12. Ministry of Education. Annual Report. Palestinian National Authority. 2011.
13. Goldberg DP. Manual of the General Health Questionnaire. Windsor. UK: NFER-Nelson 1978.
14. Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. *Psychological Medicine* 1979; 9: 139-145.
15. Thabet AA, Vostanis P. The Validity and Reliability of Arabic Version of General Health Questionnaire in the Gaza Strip. *Palestinian Medical Journal* 2005; 1 (1): 33-36.
16. Thabet AA, Dajani KK, Vostanis P. Palestinian mothers' and pre-school children's mental health problems. *International Journal of Medicine and Medical Sciences* 2013; 3 (2): 371-375.
17. Spence SH, Rapee R, McDonald C, Ingram M. The structure of anxiety symptoms among preschoolers. *Behaviour Research and Therapy* 2001; 39: 1293-316.
18. Spence SH. A measure of anxiety symptoms among children. *Behaviour Research and Therapy* 1998; 36: 545-66.
19. Edwards LS, Rapee RM, Kennedy SJ, Spence SH. The Assessment of Anxiety Symptoms in Preschool-Aged Children: The Revised Preschool Anxiety Scale. *Journal of Clinical Child & Adolescent Psychology* 2010; 39(3): 400-9.
20. Craske MG, Glover D. Anxiety disorders. In D. Glover, *Women's health: A behavioral medicine approach*. Oxford: Oxford University Press.
21. Thabet AA., Dajani KK, Vostanis, P. Palestinian mothers' and pre-school children's mental health problems. *International Journal of Medicine and Medical Sciences* 2013; 3 (2): 371-375.
22. Thabet AA, Karim K, Vostanis P. Trauma Exposure in Pre-school Children in a War Zone. *British Journal of Psychiatry* 2006; 188: 154-158.
23. Parker F, Boak A, Griffin K, Ripple C, Peay L. Parent-Child Relationship, Home Learning Environment, and School Readiness. *School Psychology Review* 1999; 28 (3): 413-25.
24. Laberia ED, Vinas F, Pla E, Jane MC, Mitjavila M, Corbella T, Canals J. Prevalence of major depression in preschool children. *European Child & Adolescent Psychiatry* 2009; 18(10): 597-604.
25. Dahl G, Lochner L. The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit. University of California, San Diego and NBER and University of Western Ontario and NBER. Retrieved from [dssucsdedu/~gdahl/papers/ children-and-EITC pdf] 2011.
26. Skreden M, Skari H, Björk MD, Malt UF, Veenstra M, Faugli A, Avitsland TL, Emblem R. Psychological distress in mothers and fathers of preschool children: a 5-year follow-up study after birth. *International Journal of Obstetrics & Gynaecology* 2008; 115 (4): 462-471.
27. Leinonen JA, Solantaus TS, Punamaki RL. Parental mental health and children's adjustment: the quality of marital interaction and parenting as mediating factors. *Journal of Child Psychology and Psychiatry* 2003; 44 (2): 227-241.
28. Cunningham J, Harris G, Vostanis P, Oyebo F, Blissett J. Children of mothers with mental illness: attachment, emotional and behavioural problems. *Early Child Development and Care* 2004; 174(7-8): 639-350.
29. Loomans EM, van der Stelt O, van Eijsden M, Gemke RJ, Vrijkotte T, Van den Bergh BR. Antenatal maternal anxiety is associated with problem behaviour at age five. *Early Human Development* 2011; 87: 565-570.

## المخلص

هدفت هذه الدراسة إلى معرفة نسبة إنتشار اعراض الاكتئاب والقلق بين الأطفال في سن قبل المدرسة و علاقتة بالصحة النفسية للأم الفلسطينية في قطاع غزة بعد الحرب . لعمل هذه الدراسة تم اختيار عينة عشوائية من 380 من الامهات , والأطفال في سن رياض الاطفال الذين تتراوح أعمارهم بين 4-6 سنوات من 24 روضة في قطاع غزة ، وقد تم تقييم الاطفال والامهات من خلال المقابلة الشخصية في رياض الاطفال باستخدام مقياسي القلق والاكتئاب للأطفال الذي تم تعينته من قبل الامهات عن الاطفال، و مقياس الصحة العامة النفسية للامهات. أظهرت نتائج الدراسة أن متوسط القلق عند الأطفال كان 27.46، أما بالنسبة لمحاور القلق الأخرى فقد كان متوسط القلق العام 3.43، ومتوسط القلق الاجتماعي 3.94 ، ومتوسط الوسواس القهري 4.92 ، ومتوسط الخوف من الإصابات الجسدية 10.47، و قلق الانفصال عن الأم . 4.94. هذه الدراسة لم تظهر أي فروق ذات دلالة أحصائية بين الأولاد و البنات في أعراض القلق ما عدا أعراض الخوف من الاصابات الجسدية الذي كان أكثر لدى الفتيات. أظهرت الدراسة فروق في معدلات القلق لدى الأطفال من الأسر التي يقل دخلها الشهري عن 300 دولار امريكي. و لم يكن هناك فروق في معدلات القلق على حسب مكان السكن. بينما كان متوسط الاكتئاب في الأطفال 33.10، ومتوسط فقرات فقدان الحيوية والشعور بفقدان القيمة 12.98، والوحدة والقلق 9.03، والغضب والعنف 7.37. وأظهرت الدراسة أن هناك فروق في معدلات الاكتئاب لدى الأطفال من الأسر التي يقل دخلها الشهري عن 300 دولار امريكي. و لم يكن هناك فروق في معدلات الاكتئاب على حسب الجنس أو مكان السكن . أما بالنسبة للامهات، فقد كان متوسط الصحة النفسية العامة هو 6.54، متوسط الاعراض الجسدية هو 1.80، ومتوسط أعراض القلق و قلق النوم هو 2.18، ومتوسط عدم الكفاءة الاجتماعية هو 1.26، ومتوسط الاكتئاب 1. وتم حساب وجود اضطراب نفسي لدى الامهات من خلال استخدام نقطة القطع 5/4 على مقياس الصحة العامة النفسية للامهات، و اظهرت الدراسة أن 53.6% من الامهات لديهن اضطراب نفسي يحتاج لمزيد من الفحوص. و أظهرت الدراسة وجود علاقة ايجابية قوية بين مشاكل الصحة النفسية لدى الامهات وأعراض القلق و الاكتئاب لدى الأطفال في سن رياض الاطفال.

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