

# **The relationship between Siege of Gaza Strip, anger, and psychological symptoms**

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# **The relationship between Siege of Gaza Strip, anger, and psychological symptoms**

## **Abstract**

**Background:** During the last two years of siege, Palestinian families in the Gaza Strip were exposed to a variety of stressors and traumatic events due to Israelis violence including incursion, bombardment, shelling of the area, and closure of the borders which had very negative impact on psychological wellbeing.

**Aim:** The aim of the study was to investigate the impact of siege of the Gaza Strip on Palestinians feelings of anger and anger state in relation psychological symptoms in relation to other socioeconomic variables.

**Methodology:** A random sample of 386 adults ' age range (18-64 years) selected from a community base. The subjects were interviewed using the following tools: Sociodemographic scale, Gaza Siege Checklist, Symptom Checklist (BSI-53), and State-Trait Anger Expression Inventory.

**Results:** The results showed that the most common impact of siege of Gaza items were: prices are sharply increased (97.67%), I feel I am in a big prison (92.23%), I can not find things I need in the market (91.70%), I quitted some purchased daily needs (88.30%), and social visits are less than before (85.23%). The main psychopathology showed that 75.91 % feel worthlessness, 56.5% blaming themselves for things, 55.7% feel that every thing in life is difficult, 54.4% had nervousness, 41.8% feel tense or keyed up, and 41.1% feel easily annoyed or irritated.

The results showed that females reported more somatization, obsessive compulsive disorder, and phobic anxiety. Palestinians live in camps reported more general psychological problems, somatization, obsessive compulsive problems, interpersonal sensitivity, depression symptoms, anxiety, hostility, phobic anxiety, paranoid ideation than those in cities and village. However, psychosis symptoms were more common in people live in villages than in camps cities and. The results showed that there were statistically significant positive correlation between total siege scores and BSI in which people who scored more in siege items had more psychopathology, somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, panic (phobic anxiety), paranoid ideation, and psychosis.

The results showed that the psychological problems were predicted by had suffering of not able to receive proper medical care, feel being in a big prison, sold some of furniture and gold, was not able to get specific medicine for themselves or for one of the family member, quitted purchasing daily needs.

The study showed that the most common anger state were: I feel upset (18.4%) and I barely burned from the inside (10.4%). While trait of anger items were: I feel upset when my work is not appreciated (21.1%), I became angry when I did a good job and get the estimate is weak (19.9%), and I am angry when mistakes of others delayed my work (16.1%). The results showed that the total anger state was predicted by were not able to get specific medicine for me or for one of the family member, thought of Immigration, one of the family members died due to prevention of traveling for treatment, their work affected so much due to shortage of fuel, papers, medicine, and raw materials, feel they are in a big prison. While anger trait was predicted by having a quick-temper was predicting.

## **Clinical implication and recommendations**

In this study, impact of siege on the Palestinians feelings of anger and inability to ventilate their anger, beside other socioeconomic adversities due to closure of the borders and unemployment due to siege lead to more psychological problems. This highlight the need to break down the siege of Gaza by the help of the international

organizations and this could be by lobbying with local and international human rights and civil society organizations to lift the siege.

## **Introduction**

On September 19, 2007 Israel's Security Cabinet voted to declare the militant Hamas-controlled Gaza Strip an "enemy entity" and enacted a number of sanctions. Among the sanctions approved by the Cabinet was reducing the fuel supply to a bare minimum. Only essential food and medical supplies would be permitted to enter the Strip and electricity would also be reduced. From that time till today the siege of Gaza was tightened and this was escalated in the last 7 months in which fuel shortage problem and closure of borders became the main issue of discussion in the Gaza Strip. Also, Palestinians were prevented from traveling outside Gaza due to closure of the borders. This also led to deterioration of the socioeconomic status of the Palestinian families which increase frustration, anger feeling, and aggression.

During the last two years of siege, Palestinian families in the Gaza Strip were exposed to a variety of stressors and traumatic events due to Israelis violence including incursion, bombardment, shelling of the area, and closure of the borders which had very negative impact on psychological wellbeing. Studies in area of war and conflict found that there was increase in psychological problems in families affected by stress and trauma. Psychological problems ranged from PTSD, anxiety, and depression. In study of Thabet et al (2008) of a sample of 200 Palestinian families from north area of Gaza Strip exposed to continuous shelling and incursions found that 120 parents (60%) had symptoms of potential clinical significance of PTSD, 52 parents (26.0%) reported severe to very severe anxiety symptoms. In the last century, the Belgian war was one of the devastated effect of a nation in which the area divided into small countries, one of consequences of the war was the siege of cities and ethnic cleansing of the people. A study from Croatia (Arcel, Folnegovic-Smalc, Tocilj-Simunkovic,

Kozarić - Kovac̃ić, & Ljubotina, 1998) based on the data of 1,926 refugees and displaced persons living in camps in Croatia reported traumatic experiences in 60.6%. Refugees from Bosnia had experienced an average of 14.8 severe traumatic events, and internally displaced persons from Croatia an average of 8 traumatic events. Other studies based also on refugees from Bosnia to Croatia reported an average of 2.1 traumatic events (Marušić et al., 1995). Across studies, it is reported that men generally encounter more traumatic events than women (Kessler et al., 1995). Rosner et al (2003) in a study to estimate the lifetime prevalence of traumatic events, the current prevalence of Posttraumatic Stress Disorder (PTSD), and the connection between the kinds of traumatic events experienced and the probability of developing PTSD in three study samples in Sarajevo, Bosnia-Herzegovina, three years after the end of the war. A total of 311 people surviving the siege of Sarajevo were assessed. Each individual survived an average of 24 traumatic events. According to the Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (DSM-IV; American Psychiatric Association, 1994) criteria, 18.6% of individuals in the resident's sample, 32.7% of those in medical treatment, and 38.6% of those in psychological treatment developed PTSD.

Marshall et al (2005) in study of total of 586 adults aged 35 to 75 years who lived in Cambodia during the Khmer Rouge reign and immigrated to the United States prior to 1993 were selected to examine the trauma exposure and mental health. Although on average more than 2 decades had elapsed since arriving in the United States, the sample revealed high rates of past-year PTSD (62%) and depression (51%).

Studies in war-afflicted civilians have reported high rates of war-related mental health problems. In a metaanalysis of 20 studies involving refugee populations living in high-income Western countries, Fazel et al (2005) found that at least 9% of adult

refugees were diagnosed with posttraumatic stress disorder (PTSD), and approximately 5% met criteria for major depression and generalized anxiety disorder. Prevalence estimates are much higher in civilians still living in war-afflicted countries. For example, as part of a national mental health survey in Afghanistan, Cardozo et al (2004) found very high prevalence rates for symptoms of anxiety (72%), depression (68%), and PTSD (42%). Similarly, among community samples involving survivors of war, conflict, or mass violence, de Jong et al (2001) reported prevalence rates of PTSD symptoms of 37% in Algeria, 28% in Cambodia, 18% in Gaza, and 16% in Ethiopia.

Fewer studies have examined the relationship between anger and measures of psychopathology. Angry feelings or problems associated with anger are a feature of some *DSM-IV* categories, such as personality disorders, anxiety disorders, and depression. However, there is only one disorder, intermittent explosive disorder, where anger is a primary feature of the syndrome.

Anger is understood as an emotion and is defined by its characteristic cognitive, physiological, motivational, and behavioral components (Berkowitz, 1999; Izard, 1991). In particular, the cognitive component involves the perception that important personal goals are blocked by improper action of an external agent, and the motivational component frequently involves hostile and aggressive impulses. On the other hand, hostility is understood as an attitudinal construct and is defined as a predisposition to dislike and mistrust others and to interpret their behavior as egoistic and hurtful (Miller, Smith, Turner, Guijarro, & Hallet, 1996). As a consequence, hostility causes an increased frequency of anger and aggression. Thus, anger and hostility may reciprocally activate each other and motivate the individual to aggressive behavior against others.

State-Trait Anger Theory (Spielberger, 1996), as validated by Deffenbacher and colleagues (Deffenbacher, 1992; Deffenbacher et al., 1996), distinguishes between two components of anger: anger experience and anger expression. Spielberger defines *anger experience* as a construct consisting of two components: anger as an emotional state, or State Anger, and anger as a more stable personality trait, or Trait Anger. State Anger describes the angry feelings experienced by an individual at any given time and can vary in intensity from “mild annoyance or irritation to intense fury and rage” (Spielberger, 1996). Deffenbacher (1993, 1994, 1995, and 1999) and others (DiGiuseppe, Tafrate, & Eckhardt, 1994) have suggested that there is a population of individuals who suffer from frequent and intense angry feelings that negatively influence their health, social, and occupational functioning. Deffenbacher (1999) suggested that anger was an “experiential state that was comprised of cognitive, emotional, and physiological components that co-occur, rapidly interacting with and influencing each other in such a way that they tend to be experienced as a singular phenomenon” (p.296). Anger is accompanied by physical reactions indicating autonomic nervous system arousal, including muscle tension, increased heart rate, respiration, and blood pressure. The STAXI scale is S-Anger. Trait Anger is the overall tendency for an individual to experience angry feelings. Spielberger (1996) stated that individuals who are high in Trait Anger tend to perceive a wider range of situations as irritating and, therefore, they experience State Anger more often. Deffenbacher and colleagues (1996) demonstrated that individuals who scored high in Trait Anger on the STAXI tended to experience more frequent negative consequences as a result of their anger than did individuals scoring lower on this scale. However, legal difficulties were eliminated from their analyses because they occurred so infrequently. The STAXI includes an overall scale for Trait Anger (T-Anger) and two subscales. Angry Temperament (T-Anger/T) measures the general tendency to

experience anger without reference to a specific provocation, and Angry Reaction (T-Anger/R) measures the tendency to react angrily to perceived criticism or unfair treatment. However, these two subscales have not been extensively studied. Anger can be expressed in two basic ways, either directing it outwardly toward individuals or objects in the environment, or directing it inwardly by trying to suppress or hold in angry feelings. Outward expression of anger is associated with violent behavior, whereas anger suppression has been related to anxiety (Spielberger & Sydeman, 1994)

Also, Spielberger (1996) describes two types of anger: state and trait. In general, the former is a temporary emotional state that consists of feelings of annoyance, rage, or both, with concomitant activation of the autonomic nervous system (Spielberger, 1996). The primary external causes of state anger are obstructions to goal directed behavior and acts perceived to be unjust. People also experience anger when they are harassed, assaulted, or attacked (Spielberger & Sydeman, 1994; Törestad, 1990). Trait anger, on the other hand, refers to a disposition over time that influences whether situations are perceived as anger provoking, as well as how often state anger is experienced. Individuals high in trait anger “are likely to perceive a wide range of situations as anger-provoking and to respond to such situations with elevations in state anger” (Spielberger, 1996, p. 7).

Men and women experience state anger differently, with men typically experiencing higher levels of state anger in the same situations (Forgays, Forgays, & Spielberger, 1997; van der Ploeg, 1988). Forgays et al. (1997) found that expressing anger is a more distinctive and significant decision for females than for males. In other words, females are likely to express anger less readily than males. Moreover, the gender differences within normative college student samples were substantial. Female college

students have a much lower state anger score ( $M= 12.30$ ) than their male counterparts ( $M= 15.89$ ) (Spielberger, 1996).

The aim of the study was to investigate the impact of siege of the Gaza Strip on Palestinians feelings of anger and anger state in relation psychological symptoms in relation to other socioeconomic variables.

### *Methods*

#### *Subjects*

The sample of the study consisted of 400 adults ' age range (18-64 years) who were selected randomly from a community base sample process representing the five geographical area of the Gaza Strip with similar socioeconomic and cultural characteristics.

#### *Procedure*

The study sample was selected randomly according to the population census of the Gaza Strip. Before starting the data collection, a training meeting was conducted for 4 hours for 15 mental health professionals working in the area had previous experience in data collection (5 social workers, 4 psychologist, 2 nurses, and 3 physicians). The aim the study was explained and sample size for each of them was given in prepared list of number of adults (males and females) included in the study to be interviewed. In selecting the sample the area was divided each geographical area into blocks and from each block, one street was chosen, from each street, every other 15 house was approached for the data collection. The data collectors interviewed the subjects in individual base setting inside their homes. A cover letter was given to each subject explaining the aim of the study and a written permission from them to participate in

the study was issued. The data collection was carried out from March 2008 to April 2008. Each interview took 2 hours.

### *Instruments*

#### *Sociodemographic variables:*

The sociodemographic variables were collected using scale include age, sex, marital status, education, and occupation.

#### *Gaza Siege Checklist (GCMHP, 2008)*

This checklist consisted of 21 items covering a wide range of daily life situation affected by Gaza Siege including the family, health, education, social life, and economic issues. This scale was developed after conducting a focus group for 20 professionals working in different sectors of health, education, social services, economic, and the Chronbach's alpha was .75. Splitting Half was 0.69

#### *Symptom Checklist (BSI-53) (BSI; Derogatis, 1993).*

The Brief Symptom Inventory (BSI) is a self-report instrument designed to measure psychological symptoms and psychological distress in clinical and non clinical populations (Derogatis, 1993; Derogatis & Spencer, 1982). The BSI consists of 53 statements of problems and complaints, and a respondent endorses one of five responses that represents the extent to which each item has caused discomfort in the near past. The response format is ordinal, with the five response statements being 0 \_ *Not at all*, 1 \_ *A little bit*, 2 \_ *Moderately*, 3 \_ *Quite a bit*, and 4 \_ *Extremely*. The BSI was designed to measure nine symptom constructs, and 49 of the items are used as indicators for these subscales. The constructs and their abbreviations are Somatization

(SOM), Obsessive–Compulsive (O-C), Interpersonal Sensitivity (I-S), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), and Psychoticism (PSY). Thorough definitions of each construct can be found in Derogatis (1993), Derogatis and Melisaratos (1983), and Derogatis and Spencer (1982). The reliability of the test was done using Chronbachs' alpha was 0.94 and splitting half was 0.89.

*State–Trait Anger Expression Inventory (STAXI; Spielberger, 1996).Arabic version (Elqourashi, 1997)*

The STAXI is a 44-item questionnaire designed to evaluate different types of experience and expression of anger. The STAXI has five scales. State Anger consists of 10 items that measure the intensity of anger feeling at the time of the investigation. Trait Anger consists of 10 items that measure individual differences in the disposition to experience anger. Responses are given on a scale from 1 (*almost never*) to 4 (*almost always*), with higher scores indicating higher trait anger. In this study we used the Arabic version of the scale which was validating in similar culture (Elqourashi, 1997). Internal consistency reliability estimated using Chronbach's alpha was 0.86 and split half was .81 for anger state scale and Chronbachs alpha was 0.79, split half was 0.71 for anger trait.

### **Statistical analysis**

In this study we used SPSS ver. 14 for data entry and analysis. The chi-squared likelihood ratio was calculated for comparison of categorical variables, and the T- independent test, ANOVA tests for between-group comparison of continuous variables. Spearman's correlation coefficient tested the association between numbers of siege scores, anger state and trait, and psychological symptoms

scores, as these were not normally distributed. Linear regression investigated the association between dependent (siege) and anger and psychological symptoms as independent variables.

## Results

### Sociodemographic characteristic of the study

The sample responded to the interview were 386 subject with response rate of 95.4%, it consisted of 201 male (52.07%) and 185 females (47.93%). The age ranged from 18 to 64 years with mean age was 41.53 years (SD =7.84). According to place of residence 16.58% were from North Gaza, 36.79% were from Gaza area, 13.99% from Middle area, 20.73% from Khan Younis area, and 11.92% were from Rafah area (south of Gaza). According to type of residence 57.25% live in city, 10.10% live in village, and 32.64 live in camp. According to citizenship 73.58% were refugee and 26.42% were citizens. According to marital status, 94.30% were married, 3.89% were widowed, and 1.81% of them were divorced. According to level of education 1.30% were not educated, 8.81% finished preparatory school, 19.69% finished primary school, 34.46% finished secondary school, 31.61% had university degree, 3.63% had Master degree, and 0.52% had PhD degree.

**Table 1**  
**Sociodemographic Characteristics of study population (N = 386)**

	No	%
<i>1. Sex</i>		
Male	201	52.07
Female	185	47.93
<i>2. Age</i>		
<i>Mean = 41.53 (SD = 7.48)</i>		
<i>3. Place of residence</i>		
North Gaza	64	16.58
Gaza	142	36.79
Middle area	54	13.99

Khan Younis	80	20.73
Rafah area	46	11.92
<i>4. Type of residence</i>		
City	221	57.25
Village	39	10.10
Camp	126	32.64
<i>5. Citizenship</i>		
Refugee	284	73.58
Citizen	102	26.42
<i>6. Marital status</i>		
Married	364	94.30
Widowed	15	3.89
Divorced	7	1.81
<i>7. Education of the household</i>		
Uneducated	5	1.30
Preparatory	34	8.81
Primary	76	19.69
Secondary	133	34.46
University	122	31.61
Master degree	14	3.63
PhD	2	0.52
<i>8. Job</i>		
Housewives	147	38.7
Unemployed	70	18.4
Employee	122	32.1
Farmer	8	2.1
Skilled worker	8	2.1
Merchant	5	1.3
Simple worker	8	2.1
Others	12	3.2

### **Frequency of impact of siege of Gaza**

The results showed that the most common impact of siege of Gaza items were: prices are sharply increased (97.67%), I feel I am in a big prison (92.23%), I can not find things I need in the market (91.70%), I quitted some purchased daily needs (88.30%), and social visits are less than before (85.23%). While least common reported items

were: I started doing the papers for immigration (16.10%) and one of the family member died due to prevention of traveling for treatment (13.80%). The siege items ranged from 0- 21 with mean siege was 12.

**Table 2**  
**Frequency of Impact of siege of Gaza items**

	Yes		No	
	N	%	N	%
1. Prices are sharply increased	377	97.67	9	2.33
2. I feel I am in a big prison	356	92.23	28	7.29
3. I can not find things I need in the market	353	91.70	32	8.29
4. I quitted some purchased daily needs	339	88.30	45	11.66
5. Social visits are less than before	329	85.23	57	14.77
6. I can not find some of the necessary things for my children (Milk, baby napkins, etc.)	308	80.20	76	19.80
7. I can not finish some construction and repair work in my house due to shortage of cement and building materials	298	77.60	86	22.40
8. My work affected so much due to cut-off of electricity	294	76.36	90	23.38
9. My monthly income decreased	276	72.50	105	27.20
10. My work affected so much due to shortage of fuel, papers, medicine, row materials	262	67.88	124	32.12
11. I was not able to reach a place I planned to go to	230	59.90	154	40.10
12. I sold some of my furniture and wife gold.	211	54.66	175	45.34
13. I thought of immigration	174	45.31	210	54.69
14. I was not able to get specific medicine for me or for one of the family member	169	43.78	217	56.22
15. I need to travel outside the Gaza Strip and can not	166	43.01	220	56.99
16. I stopped completely working	158	41.60	222	58.60
17. I had suffering of not able to receive proper medical care	158	41.00	227	58.96
18. I was prevented from visiting one of the family members in Israelis jails	131	34.03	254	65.97
19. I went to Zaka organizations and other organizations to get the food	125	32.47	260	67.53

20. I started doing the papers for immigration	62	16.10	323	83.90
21. One of the family member died due to prevention of traveling for treatment	53	13.80	331	86.20

### General psychopathology using Symptoms Checklist

Mental distress was evaluated by the short form of self-report fifty three item Symptom Checklist (BSI-53), which is a general standardized measure of psychopathology showed that 75.91 % feel worthlessness, 56.5% blaming themselves for things, 55.7% feel that every thing in life is difficult, 54.4% had nervousness, 41.8% feel tense or keyed up, and 41.1% feel easily annoyed or irritated. While the least common psychological symptoms were thoughts of ending your life (10.4%), feeling inferior to others (14.8%), beliefs that someone is controlling your thoughts (23.3%).

**Table 3**  
**Percentage of symptom Check List (BSI-53) symptoms**

Items	Usually/ always	Sometime	Never/r arely
Feeling worthlessness	75.91	7.25	16.84
Blaming yourself for things	56.5	19.3	24.2
I feel that every thing in life is difficult	55.7	22.8	21.5
Nervousness	54.4	12.2	33.4
Feeling tense or keyed up	41.8	24.3	33.9
Feeling easily annoyed or irritated	41.1	26.33	32.6
Feeling sadness and unhappy	40.8	28.9	30.2
Feeling weak in parts of your body	34.8	26.7	38.4
Difficulty in continuous sleep	34.2	36.2	29.5
Feelings that your feelings could hurt easily	33.6	31.6	40.7
Feeling dizzy, tired, loss of conscious due to exhaustion	29.7	35.7	34.6
Feeling fearful	28.4	41.9	29.7
Trouble concentrating	27.4	31.1	41.5

Entering in discussion and arguments	27	36.1	36.9
Thoughts of death or dying	27	50.5	22.5
Difficulty in remembering things	26.9	33.64	39.4
Unable to finish your work	26	40.81	33.2
Feeling that most people cannot be trusted	25.9	40.68	33.4
Numbness or tingling in parts of your body	25.2	43.1	31.7
Unable to do things like others	24.7	43.6	31.7
Feeling lonely even when you are with people	24.4	49.5	26
Others not giving you proper credit for your achievements	23.44	44.01	32.55
Temper outbursts that you cannot control	23.4	46.08	30.5
Something bad will happen	22.54	43.52	33.94
Feeling lonely	21.5	51.5	27
Feeling guilty for trivial things	21.24	54.66	24.09
Blaming others for all you troubles	20.5	53.66	25.9
Having to avoid certain things, places, or activities because they frighten you	20.1	52.3	27.6
Panic and fears suddenly without reason	20.1	57.19	22.7
Difficulty making decisions	19.5	36.7	43.9
feeling coldness and hotness	18.8	55.8	25.3
Feeling no interest in things	16.6	53.4	30.1
Feeling that something bad is going to happen to you	16.4	55.89	27.8
Pains in your heart or chest	16.2	59.78	24
Spells of terror or panic	16.2	61.9	21.9
feeling angry when you are alone	15.1	61.2	23.8
Feeling that people are misusing you	14.81	58.7	26.49
Lack of appetite	14.6	43.08	42.3
Having thoughts that are not your own	13.99	55.96	30.05
Feeling afraid in open spaces or on the streets	13.5	63.22	23.3
Afraid of riding the bus of public transport	13.3	69.6	17.1
Trouble getting your breath	12.9	57.8	29.3
Nausea and stomachaches	12.8	49.1	38.1
Feelings of guilt	12.8	51.5	35.7
Feeling uneasy when people are watching or talking about you	9.9	67.8	22.2

Feeling that your are empty of thoughts	9.8	62.2	28
Having urges to break or smash things	9.3	75.6	15.1
Feeling shame and embarrassed in front of others	9	64.8	26.2
I had the urge feelings to hurt, injury, or hit somebody	8.5	74.6	16.9
Feeling of unfriendly of others and they dislike you	8.3	67.7	24.1
Beliefs that someone is controlling your thoughts	8	68.61	23.3
Feeling inferior to others	7.2	78.2	14.8
Thoughts of ending your life	5.9	83.59	10.4

#### **Means and Standard deviations of psychological symptoms (BSI and subscales)**

The results showed that the subjects of the sample psychological symptoms ranged from 4 to 186 symptoms (mean = 81.19, SD = 31.91), somatization ranged from 0-26 (mean = 10.88, SD = 5.47), obsessive compulsive symptoms ranged from 2-23 (mean = 11.30, SD = 3.85), interpersonal sensitivity ranged from 0-15 (mean = 4.89, SD = 2.91), depression ranged from 0-24 (mean = 8.62, SD = 4.39), anxiety ranged from 0-23 (mean = 10.00, SD = 4.69), hostility ranged from 0-19 (mean = 7.31, SD = 3.73), phobic anxiety ranged from 0-19 (mean = 7.53 , SD = 3.89 ), paranoid ranged from 0-19 (mean = 7.16 , SD = 3.80), and psychosis ranged from 0-19 (mean = 6.90, SD = 3.82).

**Table 4**  
**Means and Standard deviations of psychological symptoms (BSI and subscales)**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>SD</b>
Symptom Checklist (BSI-53)	353	4	186	81.19	31.91
Somatization	374	0	26	10.88	5.47
Obsessive compulsive disorder	382	2	23	11.30	3.85
Interpersonal sensitivity	386	0	15	4.89	2.95
Depression	382	0	24	8.62	4.39

Anxiety	378	0	23	10.00	4.69
Hostility	379	0	19	7.31	3.73
Phobic anxiety	384	0	19	7.53	3.89
Paranoid	381	0	19	7.16	3.80
Psychosis	381	0	19	6.90	3.82

### **Differences in psychological symptoms and sociodemographic variables**

In order to find differences in gender and psychological symptoms, t independent test was conducted in which total mental health problems and subscales were entered separately as the dependent variable and sex as independent variable. The results showed that females reported more somatization ( $t = -2.18, p = 0.03$ ), obsessive compulsive disorder ( $t = -2.67, p = 0.01$ ), and phobic anxiety ( $t = -2.15, p = 0.03$ ). The results showed no statistically significant between refugee and citizens and marital status of the study subjects.

However, the results showed that Palestinians live in camps reported more in general psychological problems than those in cities and village ( $\chi^2 = 16.70, df = 2, p < 0.001$ ), somatization ( $\chi^2 = 9.79, df = 2, p < 0.007$ ), obsessive compulsive problems ( $\chi^2 = 6.55, df = 2, p < 0.03$ ), interpersonal sensitivity ( $\chi^2 = 9.15, df = 2, p < 0.01$ ), depression symptoms ( $\chi^2 = 10.141, df = 2, p < 0.006$ ), anxiety ( $\chi^2 = 5.98, df = 2, p = 0.05$ ), hostility ( $\chi^2 = 12.7, df = 2, p < 0.002$ ), phobic anxiety ( $\chi^2 = 5.81, df = 2, p < 0.05$ ), paranoid ideation ( $\chi^2 = 6.59, df = 2, p < 0.03$ ). However, psychosis symptoms were more common in people live in villages than in camps cities and ( $\chi^2 = 6.55, df = 2, p < 0.03$ ).

## Relationship between siege scores and psychological symptoms

In order to investigate the relationship between the siege total scores and BSI and subscales, Pearson coefficient correlation test was done. The results showed that there were statistically significant positive correlation between total siege scores and BSI in which people who scored more in siege items had more psychopathology ( $r = 0.27$ ,  $p < 0.001$ ), somatization ( $r = 0.38$ ,  $p < 0.001$ ), obsessive compulsive ( $r = 0.40$ ,  $p < 0.001$ ), interpersonal sensitivity ( $r = 0.28$ ,  $p < 0.001$ ), depression ( $r = 0.38$ ,  $p < 0.001$ ), anxiety ( $r = 0.37$ ,  $p < 0.001$ ), hostility ( $r = 0.34$ ,  $p < 0.001$ ), panic (phobic anxiety) ( $r = 0.33$ ,  $p < 0.001$ ) paranoid ideation ( $r = 0.29$ ,  $p < 0.001$ ), and psychosis ( $r = 0.31$ ,  $p < 0.001$ ).

**Table 5**

### Pearson correlations coefficient test between siege and psychological symptoms

	1	2	3	4	5	6	7	8	9	10
1. Siege total										
2. Symptom Checklist	.40 **									
3. Somatization	.38 **	.80**								
4. Obsessive compulsive	.27**	.79 **	.56**							
5. Interpersonal sensitivity	.28**	.77**	.54 **							
6. Depression	.38**	.84**	.57 **	.66 **	.63 **					
7. Anxiety	.37**	.88**	.68 **	.67**	.65**	.69**				
8. Hostility	.34**	.73**	.54**	.47**	.49**	.55**	.61**			
9. Panic (phobic anxiety)	.33**	.79**	.60**	.57**	.59**	.59**	.71**	.47**		
10. Paranoid Ideation	.29**	.77**	.54**	.53**	.61**	.61**	.60**	.55**	.56**	
11. Psychosis	.31**	.84**	.58**	.60**	.62**	.73**	.69**	.60**	.61**	.60**

## Determinants of siege scores and psychological symptoms

In order to find out the predictive effect of siege on psychological symptoms, total psychological symptoms was entered as dependent variable in a multiple regression model, with siege items as the independent variables. The results showed that the total

BSI scores were positively associated with the following siege items: I had suffering of not able to receive proper medical care (B= .14, p< 0.001), I feel I am in a big prison (B=.19, p< 0.01), I sold some of my furniture and gold (B=.15, p< 0.003)., I was not able to get specific medicine for me or for one of the family member (B= .13, p< 0.01), I quitted some purchased daily needs (B= .11, p< 0.02).

**Table 6**  
**Linear Regression analysis of psychological symptoms and siege items**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	36.23	6.78		5.33	.000
13- I had suffering of not able to receive proper medical care	9.10	3.51	.14	2.58	.010
2- I feel I am in a big prison	24.67	6.25	.19	3.94	.000
18- I sold some of my furniture and gold .	10.00	3.29	.15	3.03	.003
3- I was not able to get specific medicine for me or for one of the family member	8.59	3.44	.13	2.49	.013
5- I quitted some purchased daily needs	11.07	4.92	.11	2.24	.025

F = 15.18, p <0.05, R<sup>2</sup>=0.18

## State of anger and trait of anger

### Anger state

In this study the most common state of anger items were: I feel upset (18.4%) and I barely burned from the inside (10.4%). While the least common states were: I had the desire to break things (2.6%), and I feel the desire to direct insults someone (4.1%).

**Table 7**

**Frequency of anger state items (N = 386)**

	<b>Not present</b>	<b>Little</b>	<b>Moderate</b>	<b>Severe</b>
I feel upset	25.2	33.2	23.1	18.4
I barely burned from the inside	49.2	24.1	16.3	10.4
I feel a desire for revenge	63.9	17.1	11.2	7.8
What I feel at this moment: I feel anger	54.4	22	16.1	7.5
I had the desire to shout on the face of someone	53.5	24.9	14	7.5
I feel a desire to strike someone	65.2	22.6	6.5	5.7
I barely mad of resentment	66.6	18.7	9.1	5.4
I had urge to hit the table forcibly	74.4	17.6	3.6	4.4
I feel the desire to direct insults someone	73.1	19.2	3.6	4.1
I feel the desire to break things	74.6	15.5	7.3	2.6

### Anger trait

In this study the most common trait of anger items were: I feel upset when my work is not appreciated (21.1%), I became angry when I did a good job and get the estimate is weak (19.9%), and I am angry when mistakes of others delayed my work (16.1%).

While the least common traits were: I loss control of my self (4.4%), I feel a desire to strike a person when touch of frustration (4.2%), I said bad words when I am provoked outrage (2.9%).

**Table 8**  
**Frequency of anger trait items (N = 386)**

	<b>Not present</b>	<b>Little</b>	<b>Moderate</b>	<b>Severe</b>
I feel upset when my work is not appreciated	8.9	35.9	34.1	21.1
I became angry when a I did a good job and get the estimate is weak	18.4	31.6	30.1	19.9
I am angry when mistakes of others delayed my work	11.1	47.7	25.1	16.1
I am deeply angered when the touch of criticism before others	26.9	45.1	18.9	9.1
My temper is easily provoked	29.5	49.5	13.7	7.3
I like impulsive and hurry	37.4	47.3	9.9	5.5
I had a quick-temper	36.8	47.4	10.4	5.4
I loss control of my self	40.4	43.3	11.9	4.4
I feel a desire to strike a person when touch of frustration	57.1	29.1	9.6	4.2
I said bad words when I am provoked outrage	53.8	32.7	10.6	2.9

**Anger state and trait and sociodemographic variables**

T independent test was conducted in which total anger state and trait was the dependent variable and sex as independent variable. The results showed no statistically significant sex differences in mean anger state (Male vs. Female) (7.08 vs. 6.12) ( $t = 1.56$ ,  $p = 0.12$ ) and anger trait (Male vs. Female ) (10.68 vs. 10.22).

The results showed no statistically significant differences in anger state and trait and citizenship, relation to place of residence, and marital status.

## Relationship between siege scores, psychological symptoms, anger state, and trait

In order to investigate the relationship between the siege total scores, psychological symptoms, anger state, and trait, Pearson coefficient correlation test was done. The results showed that there were statistically significant negative correlation between anger trait and total siege scores and ( $r = .33, p < 0.001$ ), , total psychological symptoms ( $r = 0.57, p < 0.001$ ), somatization ( $r = 0.39, p < 0.001$ ), obsessive compulsive symptoms ( $r = 0.39, p < 0.001$ ), interpersonal sensitivity ( $r = 0.44, p < 0.001$ ), depression ( $r = 0.53, p < 0.001$ ), anxiety ( $r = 0.48, p < 0.001$ ), hostility ( $r = 0.46, p < 0.001$ ), panic ( $r = 0.48, p < 0.001$ ), paranoid ideation ( $r = 0.49, p < 0.001$ ), and psychosis ( $r = 0.50, p < 0.001$ ). This also was the same for Anger trait.

**Table 9**

### Correlations between the Siege, State and Trait Anger Scales and the Brief Symptom Inventory (BSI)

	Anger state	Anger trait
Total siege	.33**	.22**
Symptom Checklist (BSI-53)	.57**	.56**
Somatization	.39**	.40**
Obsessive compulsive symptoms	.39**	.40**
Interpersonal sensitivity	.44**	.41**
Depression	.53**	.50**
Anxiety	.48**	.47**
Hostility	.46**	.51**
Panic (phobic anxiety)	.48**	.40**
Paranoid ideation	.49**	.50**
Psychosis	.50**	.53**

### Determinants of anger state and siege

In order to find out the predictive effect of siege on anger state, total anger state was entered as dependent variable in a multiple regression model, with siege items as the independent variables. The results showed that the total anger state scores were positively associated with the following siege items: I was not able to get specific medicine for me or for one of the family member: ( $B = .17, p < 0.001$ ), I thought of immigration ( $B = .13, p < 0.007$ ), one of the family member died due to prevention of

traveling for treatment (B=.12,  $p < 0.01$ ), my work affected so much due to shortage of fuel, papers, medicine, row materials (B= .10,  $p < 0.03$ ), I feel I am in a big prison (B= .10,  $p < 0.03$ ).

**Table 10**

**Linear Regression analysis anger state and siege items**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.534	1.178		1.302	.194
3- I was not able to get specific medicine for me or for one of the family member	2.133	.613	.174	3.479	.001
15- I thought of immigration	1.657	.609	.136	2.720	.007
12- One of the family member died due to prevention of traveling for treatment	2.155	.874	.124	2.465	.014
20- My work affected so much due to shortage of fuel, papers, medicine, row materials	1.408	.662	.107	2.126	.034
2- I feel I am in a big prison	2.423	1.166	.103	2.077	.038

F = 9.65,  $p < 0.05$ ,  $R^2 = 0.11$

**Determinants of anger trait and siege**

In order to find out the predictive effect of siege on anger trait, total anger trait was entered as dependent variable in a multiple regression model, with siege items as the independent variables. The results showed that the total anger trait scores were positively associated with the following siege items: I was not able to get specific medicine for me or for one of the family member: (B= .16,  $p < 0.001$ ), I feel I am in a big prison (B= .11,  $p < 0.02$ ), and my work affected so much due to cut of electricity, row materials (B= .10,  $p < 0.04$ ).

**Table 11****Linear Regression analysis anger trait and siege items**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.694	1.056		6.340	.000
3- I was not able to get specific medicine for me or for one of the family member	1.736	.527	.168	3.294	.001
2- I feel I am in a big prison	2.268	1.007	.115	2.252	.025
21- My work affected so much due to cut of electricity	1.243	.618	.102	2.012	.045

F = 9.65, p < 0.05, R<sup>2</sup> = 0.05

## Discussion

Our results showed that results showed that the most common impact of siege of Gaza items were: prices are sharply increased (97.67%), I feel I am in a big prison (92.23%), I can not find things I need in the market (91.70%), I quitted some purchased daily needs (88.30%), and social visits are less than before (85.23%). While least common reported items were: I started doing the papers for immigration (16.10%) and one of the family member died due to prevention of traveling for treatment (13.80%). The above mentioned results showed that such items highlight the socioeconomic and psychological impact on Palestinians daily life and families ability to cope with shortage of materials and money which may increase stat of frustration, despair, and anger toward the outside word knowing that no one tried to beak this siege. Interestingly, 16% said that they started doing papers for immigration to other countries due to hardship of the families and lack of job opportunities in the Gaza Strip.

While the least common psychological symptoms were thoughts of ending your life (10.4%), feeling inferior to others (14.8%), beliefs that someone is controlling your thoughts (23.3%).

In this study the most common psychological symptoms were related to depression and anxiety symptoms such as feeling of worthlessness, blaming themselves for things, feel that every thing in life is difficult, had nervousness, feel tense or keyed up, and feel easily annoyed or irritated.

The results of this study showed that the psychological symptoms were positively associated with total siege scores and with the following siege items: I had suffering of not able to receive proper medical care, I feel I am in a big prison, I sold some of

my furniture and gold, I was not able to get specific medicine for me or for one of the family member, I quitted some purchased daily needs. This showed that siege is one of the current daily cumulative stressor Palestinians are subjected to which increase the feelings of being unsecure and uncertain of the present and future. Siege increase the people demand for medical care which is part of process of developing more somatic symptoms due to psychological trauma and stress. Added to this is the effect on socioeconomic status of the Palestinian families which urged many families to sell the furniture and gold of the women to buy food. This is consistent with previous studies of people exposed to long period stress and other socioeconomic hardships in similar area of war and conflict in which depression and anxiety are increased. Summerfield & Toser (1991) comment that the impact of low-intensity warfare on ordinary civilians is intense, as terror and anxiety penetrate subjective mental life. This is exacerbated when accompanied by high levels of social deprivation. Dubois et al. (2004) assessed the impact of civil war some five years later on Cambodian respondents. About 59% of their study population showed psychiatric symptoms that fitted a clinical diagnosis, with 53% reporting symptoms of anxiety and 42% reporting symptoms of depression. Research carried out since the 1970s in Northern Ireland suggests that the 'Troubles' have had a negative impact on some citizens, as a variety of psychological disturbances have been recorded, e.g. sleep problems, dependency on benzodiazepines and alcohol misuse. Miller et al. (2003) found that respondents in the 1997 and 2001 Northern Ireland Health and Social Wellbeing surveys who thought that they themselves, their family or their neighbourhood had been affected by the conflict were significantly more likely to report high levels of stress. More than 75% of respondents in that survey worried about the political situation in Northern Ireland and this also were associated with significantly higher levels of stress. Respondents who said that they did not

experience very much violence in their neighbourhood had a lower GHQ-12 score, whereas respondents who said that they were affected by the conflict either 'a lot' or 'quite a bit' had higher GHQ-12 scores (Miller, 2003). In a large study by Lopes Cardozo et al (2000) in Kosovo, following the war, the prevalence of PTSD among Kosovar Albanian was found to be 17%. However, in other studies of refugees, from both other Yugoslav regions and from Kosovo, a higher prevalence of PTSD has been found. In a questionnaire study of Kosovars in the United States it was found that about 60% were likely to be diagnosed with PTSD. In another study of Kosovars in the UK, conducted with both questionnaires and validated with interviews, about half of the refugees exhibited signs of PTSD

Roberts et al (2008) in a study to measure rates of post-traumatic stress disorder (PTSD) and depression amongst 1210 adult internally displaced persons in Gulu and Amuru districts of northern Uganda, and investigate associated demographic and trauma exposure risk factors. The results showed that 54% of the respondents met symptom criteria for PTSD, and over two thirds 67% of respondents met symptom criteria for depression. Over half (58%) of respondents had experienced 8 or more of the 16 trauma events covered in the questionnaire. Factors strongly linked with PTSD and depression included gender, marital status, distance of displacement, experiencing ill health without medical care, experiencing rape or sexual abuse, experiencing lack of food or water, and experiencing higher rates of trauma exposure.

In this study the most common state of anger items were: I feel upset and I barely burned from the inside. While the most common trait of anger items were: I feel upset when my work is not appreciated, I became angry when I did a good job and get the estimate is weak, and I am angry when mistakes of others delayed my work.

The results showed no statistically significant sex differences in mean anger state, no differences in anger state and trait between refugees and citizens, marital status, and place of residence. The results showed that the total anger state scores were positively associated with the following siege items: I was not able to get specific medicine for me or for one of the family member, I thought of immigration, one of the family member died due to prevention of traveling for treatment, my work affected so much due to shortage of fuel, papers, medicine, raw materials, I feel I am in a big prison. While anger trait scores were positively associated with the following siege items: I was not able to get specific medicine for me or for one of the family member, I feel I am in a big prison, and my work affected so much due to cut of electricity, raw materials.

The results of the study showed that siege increase anger which lead to more psychological symptoms. This is consistent with study of Kopper and Epperson (1996) who found that composites of anger variables significantly predicted mental health variables. Specifically, variables such as depression, dependency, and guilt. This suggests that anger-prone individuals might well display a broader array of psychological symptomatology or psychopathology among the variables that correlated with anger composition. Spielberger (1979) noted that anger was a more elementary concept than either hostility or aggression, although these three were often used interchangeably. Anger has a biological basis expressed by somatic symptoms including arousal of the autonomic nervous system. Regression analyses and structural equation modeling has shown that anxiety and depression can be predicted by state anger but not by trait anger. The significant correlation between Trait Anger and anxiety and depression is spurious possibly because of a moderate correlation between State and Trait Angers. Trait Anger refers to an individual's readiness to perceive a wide range of situations as anger provoking and to respond to such

situations with elevation of State Anger. In contrast, State Anger refers to an individual's current emotional states consisting of subjective feelings of tension, annoyance, irritation, fury, and rage (Spielberger, 1979).

### **Clinical implication and recommendations**

In this study, impact of siege on the Palestinians feelings of anger and inability to ventilate their anger, beside other socioeconomic adversities due to closure of the borders and unemployment due to siege lead to more psychological problems. This highlight the need to break down the siege of Gaza by the help of the international organizations and this could be by lobbying with local and international human rights and civil society organizations to left the siege. Also, there are needs for establishment programs of anger management which may help in improving the mental health of the Palestinians in the Gaza Strip.

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