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Stress of Siege of Gaza and Locus of Control in Palestinian Children in the Gaza Strip

Abdelaziz Mousa Thabet, MBChB, DPM, DCAC, PhD[1*]; Sanaa S. Thabet, BA, MPH[2]; Panos Vostanis, MB, MD, FRCPsych[3]

[1]Emeritus Professor, Child and Adolescent Psychiatry, School of Public Health-Child, Institute-Gaza-Al Quds University, P.O.Box 5314, Palestine
[2]Director of Child and Family Training and Counseling Center-NGO, Palestine
[3]Professor of Child and Adolescent Mental Health, University of Leicester, Department of Neuroscience, Psychology and Behaviour, Centre for Medicine, University Road, Leicester LE1 7RH, UK

Corresponding author
Abdelaziz Mousa Thabet, MBChB, DPM, DCAC, PhD
Emeritus Professor, Child and Adolescent Psychiatry, School of Public Health-Child, Institute-Gaza-Al Quds, University, P.O.Box 5314, Palestine
E-mail: abdelazizt@hotmail.com

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ABSTRACT

Aim
The aim of the study was to investigate the effect of the siege on Palestinian children and adolescents locus of control.

Method
The sample consisted of 184 Palestinian children and adolescents. They were 92 boys (50%) and 92 girls (50%). The sample was followed from previously randomly selected sample from the entire Gaza Strip as a part of the previous cohort II study. The age of children ranged from 8-18 years with mean age 14.69 years.

Instruments
Child and adolescents were interviewed by the following: Socio-demographic scale, Gaza Siege checklist-children-form, and locus of control scale.

Results
The results showed that the most common items of siege of Gaza items were: learning problems due to shortage of electricity and teachers unable to come to schools (82.6%), I feel I am in a big prison (79.9%), I stopped buying daily needs because prices are very high (79.3%), I was not able to go to school due to shortage of fuel and absence of transportation (75%), I cannot find some of the necessary things for studies such as books and stationary (68.5%). The children reported from 1-20 siege items with mean=9.07. The result showed higher locus of control which means children endorse an external locus of control. Mean total scores of locus of control of boys was 17.56 and mean was 17.58 for girls. Stressors due to the siege of Gaza were positively correlated with locus of control score.

Clinical implications
This study is one of few studies performed to evaluate the impact of siege on Palestinian children locus of control. The findings that children endorse an external locus of control and stressors of siege, highlight the need for more support of children to increase their coping and using their internal locus of control. Such activities could be by introducing extracurricular activities include music, theatre, sport, peer discussion, and reading.

Keywords
Siege; Stressors; Children; Locus of control; Gaza Strip.

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INTRODUCTION

Escalation of the crisis in the Gaza Strip was obvious after the capture of an Israeli soldier by Palestinian militant groups in the early morning hours of 28 June 2006. As a response to this action, the Israeli government started the incursion of the Gaza Strip in a military operation called "Summer Rains Campaign", and during this military campaign strict closure by sealing off the entire Gaza Strip was imposed. This included closing the all the crossings for a prolonged period of time, and resulted in suffering for the whole Palestinian population. In this operation, more than 400 people were killed and thousands were injured. Gaza also suffered from the resumption of sonic booms, the shortage of food, fuel and medical supplies, and the destruction of electricity generating station[1] 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.[1]

Previous studies in the Gaza Strip in the last 11 years showed that the most common stressors due to siege were: feeling being in big prison, unable to finish the construction of the houses, unable to travel, finding jobs, and treatment outside the Gaza Strip.[2-6]

Locus of Control

Locus of control has been defined as one of the important ways in which people perceive whether they have influence over the outcome of a situation.[7] People who believe they have control over their successes and failures are described as possessing an internal locus of control, whereas people who believe that their lives are controlled by forces outside themselves are described as possessing an external locus of control.[7] Briefly, internal *versus* external control refers to the degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics *versus* the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable. Such expectancies may generalize along a gradient based on the degree of semantic similarity of the situational cues.[7] Locus of control has sustained itself as a concept for psychological study for a half century. Others had suggested that early experiences of adverse and uncontrollable events, including persistent exposure to socio-economic disadvantage, may foster external locus of control orientation characterized by diminished the sense of perceived control over one's life and environment.[8] Children and adolescents who develop an external locus of control and experience uncertainty about the extent of control they have over life, events have also been hypothesized to be at increased risk of developing depression.[9,10] A previous study found that there was a high, positive correlation between children's locus of control and state anxiety scores in a stressful situation (preacademic examination period). Results indicated that children with a more externally focused locus of control have higher-levels of anxiety when exposed to a stressful situation. This concept has important implications for school health educators. Since locus of control is a relatively stable personality disposition, understanding the locus of control (internal *versus* external) of children in advance is essential to designing appropriate interventions to reduce their stress and anticipatory anxiety. For instance, heightened feelings of personal control for children is an example of adaptive outcomes that school educator scan help.[11] Others found that there was evidence that greater early socio-economic adversity was associated with an increased risk of depression at 18 years. There was also evidence that more external locus of control at 16 years was associated with increased risk of diagnosed depression at 18 years.[12]

The aim of the study was to investigate the effect of siege on locus of control of Palestinian children.

METHOD

Participants

The sample consisted of 184 Palestinian children and adolescents selected randomly from the Gaza Strip in November to December 2008. The sample was randomly selected from the entire Gaza Strip as a part of the previous cohort II study from a list of names of the Palestinian families in the Gaza Strip listed in the previous study.[2] The children were interviewed by self-reported questionnaire in their homes. The sample consisted of 92 boys (50%) and 92 were girls (50%). The age of children ranged from 8-18 years with mean age 14.69 years (*SD*=2.41).

Instruments

The data was collected the children by using the following questionnaires:

Demographic Questionnaire

Demographic information about the participants was obtained using a survey developed by the authors. This questionnaire includes sex, age, and citizenship.

Gaza Siege Checklist-children form[1,5]

This checklist consisted of 20 items covering a wide range of daily life situation affected by Gaza Siege including the family, education, social life, and economic issues. In this study, the split-half reliability of the scale was moderate (r=0.58). The internal consistency of the scale was calculated using Cronbach's alpha and was also moderate (α=0.54). Some items were changed to fulfill the needs of new changes in the siege of Gaza Strip. The internal consistency of the scale was calculated using Cronbach's alpha and was also moderate (α=0.54).

The Child Nowicki-Strickland Internal-External Scale (CNS-IE)[13]

The child nowicki-strickland internal-external scale (CNS-IE) was developed in 1969 which measures the generalized expectancies for internal *versus* external control of reinforcement among children.[13] The CNS-IE scale is a 40-item paper-pencil test using a "Yes/No"

response format. Scores range from 0 (internal) to 40 (external) with the higher score indicating greater external orientation. The tool measures children's efficacy in schoolwork to winning games, feeling healthy, and being able to influence parents and friends. The tool also consists of two subsets to enable assessment of children below grade 6 (19 items) and for older children (21 items).

Scoring of the CNS-IE

Each item contributes to the total score. For the following items a 'yes' contribute 1 to the total score: 1, 3, 5, 7, 8, 10, 11, 12, 14, 16, 17, 18, 19, 21, 23, 24, 27, 29, 31, 33, 35, 36, 37, 38, 39. For the remaining items a 'no' contributes 1 to the total score: 2, 4, 6, 13, 15, 20, 22, 25, 26, 28, 30, 32, 34, 40. Sum the total scores to calculate the total score.

The CNS-IE has established reliability and validity for a generalized expectancy for control in a sample of over thousand elementary and high school students.[14] Estimates of internal consistency *via* the split-half method corrected by the Spearman-Brown Prophesy Formula were: r=0.63 (grade 3 to 5); r=0.68 (grade 6 to 8); r=0.74 (grade 9 to 11); and r=0.81 (grade 12). The internal consistency of the scale was calculated using Cronbach's alpha and was also moderate (α=0.62).

Translation Process

The instrument was translated and back-translated following the technique described by Bracken and Barona (1991). The 40 items of the Nowicki-Strick and Locus of Control Scale for Children were first translated from English to Arabic by the researcher. Another translator was asked to blindly complete the back translation. The retranslated English version and the original English version were compared to see if the meaning of each item was maintained. Discrepancies were discussed and agreed upon by both the researcher and the back-translator. An expert committee the nevaluated the translated scale and assessed the content validity. The expert committee included five Professors from the 4 universities in the Gaza Strip, one clinical psychologist. All of them are bilingual and have translation experience, which ensured linguistic and cultural equivalence. The Arabic version of the Nowicki-Strickland Locus of Control Scale for Children was referred to in this study as adult nowicki-strickland internal-external scale (ANS-IE). While the Gaza Siege Checklist-children form was developed in Arabic

Procedure

We selected the sample of the children and adolescents according to the second stage of cohort study list of names of the families. We held a meeting and conducted training for 4 hours to 4 professionals working in the children mental health and had previous experience in data collection (2 social workers, 2 psychologists). We explained to them the aim of the study and gave them a prepared list of number of children to be interviewed. A cover letter was given to each parent to obtain written permission from them to interview their children in the study. Socio-demographic information for the study population was collected from parents inside their homes. Each interview took 15 minutes to be completed. Children were interviewed by self-report questionnaires in their homes. Children were informed by data collectors that there were no right or wrong answers and that they were free to withdraw from the study at any time. Children were also informed that if they had questions when completing the scales.

Statistical Analysis

Data entry and analysis were carried out using a statistical software SPSS version 23.0 (SPSS Inc., Chicago Ill, USA). Frequency and percent were used to express quantitative data of types of siege stressors and locus of control. For continuous variables means and standard deviations were reported. For differences between means of two groups parametric tests were used such as an independent t-test was conducted to compare gender of children and mean of siege stressors and locus of control. One Way ANOVA test was used for measuring differences between more than two groups of continuous variables total siege stressors, locus of control and other socio-demographic variables. Pearson's correlation coefficient was used to test the association between numbers of siege stressors and locus of control. Linear regression analysis was conducted in which mean locus of control was the dependent variable and each siege stressor as independent variables. The alpha level was set at 0.05.

RESULTS

Socio-demographic Characteristic of the Study

The sample responded to the interview were 184 participants with response rate of 99%, it consisted of 92 males (50%) and 92 girls (50%). The age ranged from 6-18 years with mean age was 12.4 years (SD=7.84). According to place of residence 26.1% of children were from North Gaza, 37.5% were from Gaza, 14.7% were from Middle area, 3.8% were from Khan Younis, and 17.9% were from Rafah (south of Gaza). According to type of residence, 43.5% of children live in cities, 12.5% live in villages, and 44% live in camps. According to number of siblings, 13.6% of families had less than 4 children, 61.4% had 5-7 children, and 25% had 8 and more siblings. Looking at the family monthly income, 60.9% of the families' monthly income was less than $350 US per month, 30.4% earned $351-700 US, and only 8.7% earned more than $701 US (Table 1).

Frequency of Impact of Siege of Gaza

The results showed that the most common items of siege of Gaza items were: learning problems due to the shortage of electricity and teachers unable to come to schools (82.6%), I feel I am in a big prison (79.9%), I quitted purchased daily needs because prices are very high (79.3%), I was not able to go to school due to the shortage of fuel and absence of transportation (75%), cannot find some of the necessary things for the study such as books and stationary (68.5%). While the least common siege items reported by children were: I started doing the papers for immigration (18.5%), begging in streets and go to organizations for help (17.9%), stealing from neighbors and shops (10.3%) (Table 2).

Table 1. *Socio-demographic Characteristic of the Study Sample*

	N	%
Sex		
Boys	92	50
Girls	92	50
Address		
North Gaza	48	26.1
Gaza	69	37.5
Middle area	27	14.7
Khan Younis	7	3.8
Rafah area	33	17.9
Place of residence		
City	80	43.5
Village	23	12.5
Camp	81	44.0
Number of siblings		
Less than 4	25	13.6
5-7 children	113	61.4
8 and above	46	25.0
Monthly family income		
Less than $350 US	112	60.9
$351-700 US	56	30.4
More than $701 US	16	8.7
Paternal education		
Uneducated	11	6.0
Preparatory	25	13.6
Primary	40	21.7
Secondary	53	28.8
University	20	10.9
Master degree	27	14.7
PhD	8	4.3
Father work		
Unemployed	90	48.9
Skilled worker	18	9.8
Employee	59	32.1
Others	17	9.2
Maternal education		
Uneducated	9	4.9
Preparatory	19	10.3
Primary	63	34.2
Secondary	74	40.2
Diploma	13	7.1
University	6	3.3
Mother work		
Housewives	177	96.2
Employee	7	3.8

The children reported from 1-20 siege items with mean=9.07 (SD=2.8).

Differences in Siege Stressors and Socio-economic Variables

Independent *t*-test was done, mean siege stressors in males was 9.40 (*SD*=2.71), mean for females was 8.75 (*SD=2.86*) *t*(182)=1.85, $p<0.11$. One-way ANOVA was performed to find differences in siege stressors and other socio-economic variables. Post hoc test using Tukey showed that no significant differences in siege stressors and number of siblings. However, children from families with monthly income less $300 had more siege stressors than those with higher income F(2, 181)=5.94, $p=0.003$, partial $\eta_p^2=0.06$

Table 2. *Frequency of Items of Siege of Gaza (N=184)*

No.	Items	No.	%
1	Learning problems due to the shortage of electricity and my teachers were unable to come to schools	152	82.6
2	I feel I am in a big prison	147	79.9
3	I quitted purchased daily needs because prices are very high	146	79.3
4	I was not able to go to school due to the shortage of fuel and absence of transportation method.	138	75
5	I cannot find some of the necessary things for study such as books and stationary in the market due to siege	126	68.5
6	Social visits are less than before	118	64.1
7	I was not able to get my pocket money due to my parents stopping work due to siege	107	58.2
8	I cannot live in my house due to shortage of cement and building materials and non-finishing of our home	106	57.6
9	I was not able to get specific medicine for me or for one of the family member due to the shortage of medicine and equipment transportation	104	56.5
10	I was not able to get toys and necessary things to play	84	45.7
11	I thought of immigration	73	39.7
12	I am thinking of leaving the school and got to work in streets to help the family	57	31
13	I goto street to sell biscuits, gums, and other things to help family	54	29.3
14	I cannot travel outside the Gaza Strip for treatment and other things	48	26.1
15	I use non-prescribed medicine to overcome the problems of siege	46	25
16	One of my family members cannot travel outside the Gaza Strip for treatment and other things	45	24.5
17	I escape from school and go to work in garages and workshops	40	21.7
18	My parents started doing the papers for immigration for me	34	18.5
19	I am begging in streets and go to organizations in the society for help	33	17.9
20	I steal from neighbors and shops	19	10.3

Children with father education level of university and more had fewer siege stressors than those children from fathers with less education F(2, 181)=3.02, p=0.007, partial η_p^2=0.094. Also, children with mother's education higher than university degree had less siege stressors F(2, 181)=5.94, p=0.003, partial η_p^2=0.06.

Means and Standard Deviations of the Arabic Version of the Nowicki-Strickland Locus of Control Scale for Children

As shown in Table 3, the subjects of this study were found significantly more externally oriented when their mean I-E scores were compared against the normative data supplied by Nowicki and Strickland (1973).

Relationship between Stressors due to the Siege of Gaza and Locus of Control

To assess the relationship between locus of control and stressors due to the siege of Gaza scores, Pearson correlation was computed. Stressors due to the siege of Gaza was positively correlated with locus of control scores (r=.20, p<0.001) (Table 4).

Prediction of Locus of Control by Types of Siege Stressors

In a univariate linear regression analysis, each siege stressor was entered as an independent variable in a multiple regression model, with total locus of control scores as the dependent variable, three traumatic events were significantly associated with posttraumatic stress disorder (PTSD): I was not able to fulfill my needs due to my parents stopped working because of siege (β=0.24, t(180)=3.40, p<0.01), lost the main source of income (β=0.19, t(180)=2.67, p<0.01), and forced to leave home and stayed in the superdome/convention centre (β=0.17, t(180)=3.43, p<0.01) F(1, 225)=19.23 p<0.001, R^2=0.17) (Table 5).

DISCUSSION

This is the first study to evaluate the relationship between of stressors of siege and locus of control of Palestinian children in the

Table 3. *Mean and Standard Deviations of I-E scores on ANSLCS*

	This study			Nowicki-Strickland (1973)			t	p
Sex of children	N	Mean	SD	N	Mean	SD		
Male	92	17.56	4.82	37	12.48	4.81	0.03	0.97
Female	92	17.58	4.44	53	12.01	5.15		

Table 4. *Relationship between Stressors due to the Siege of Gaza and Locus of Control*

	Locus of control
Total siege stressors	0.29**

*p=0.05, *p= 0.01, *p=0.001

Table 5. *Univariate Linear Regression Analysis of Locus of Control by Types of Siege Stressors*

	Unstandardized Coefficients	Standardized Coefficients		t	p	95.0% Confidence Interval for B	
		Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	15.480	0.56		27.56	0.001	14.37	16.59
I was not able to get my pocket money due to my parents stopped working because of siege	2.243	0.66	0.24	3.41	0.001	0.94	3.54
Thinking of leaving the school and went to work in streets to help the family	1.900	0.71	0.19	2.68	0.01	0.50	3.30
Stealing from neighbors and shops	2.675	1.10	0.17	2.43	0.02	0.50	4.85

F=19.23 $p<0.001$, $R^2=0.17$

Gaza Strip. In the last 6 decades, Palestinian children are victims of continuous trauma and war. Such experiences may lead to an increase of mental health problems and deteriorate the children's and adolescents' physical and mental well-being. Previous studies in the area showed that the adults are suffering from psychological problems due to the siege which continued for the last years.[1,2,5] In this study children reported having learning problems due to the shortage of electricity and teachers were unable to come to schools due to the shortage of fuel. They noted that they felt as if they were in a big prison (79.9%), children quitted purchasing things to meet daily needs because prices are very high (79.3%), they were not able to go to school due to shortage of fuel and transportation (75%), and they cannot find some of the necessary things for continuing study such as books and stationary (68.5%). Such shortages have an adverse impact on the entire life of Palestinian families and increase risk factors for children and adolescents that lead to physical and mental health problems. Such problems may increase state of anger and frustration and may increase children's tendency toward community and family violent acts against other people in the community and siblings. Studies of similar situations are very few and the recent history showed no similar type of collective punishment of one and half million persons in very tiny area. Similarly, in a study comprised of 399 randomly selected university students from the four main universities in Gaza Strip, the most frequently reported stressors due to the siege were: sharply increased prices due to closure (92% of students), studies being affected so much due to the cut-off of electricity (83.5%), and shortage of gas.[4] Results showed that mean stressors in boys were 12.38 and 10.33 in girls.The subjects of the present study were found significantly more externally oriented compared to the normative sample.[13] These results may be explained in terms of the political situation in the Gaza Strip and cultural values of the Palestinian children; they remained subjugated by political suppression and powerlessness for a long time. Although, Palestinian children are encouraged by parents and teachers to be self-reliant, they are expected to learn and firmly hold deep-rooted cultural and traditional values of the society in which they live. Similarly, others have suggested that early experiences of poverty may foster external locus of control orientation in children through exposure to parental depression and negative parenting.[8,9] It has been suggested that the link between early life adversity and negative mental health outcomes in adulthood, including depression, could be explained by low self-esteem, interpersonal difficulties and maladaptive coping strategies.[14] Similarly, in a study from the Project on Human Development in Chicago Neighborhoods, a multi-cohort accelerated longitudinal research study of youth living in 80 Chicago neighborhoods during 1994 that focused on 1,767 youths aged 9 to 19. The results indicated that violence is significantly lower among adolescents with an internal locus of control. Youth who believe they have control over outcomes associated with their behavior are less likely to engage in violent behaviors than youth who have an external locus of control, and think that behavioral outcomes are the result of fate or luck.[15] Our finding was in line with previous studies examining locus of control as a pathway between childhood adversity and mental health problems.[16]

Our study showed no gender differences in locus of control. However, there is also some longitudinal evidence to suggest that girls move toward more external locus of control disposition during middle adolescence, while boys become more internal.[17-19]

CONCLUSIONS

This study is one of few studies done to evaluate the impact of siege on Palestinian children locus of control. The findings of the present study have important implications for stress-related mental health prevention programs. The findings that children depend on parent relations and home life, psychological well-being, and school environment to overcome the adversities effect of siege. This highlight the need to involve parents in education programs to increase their awareness of children psychological needs in time of war and siege which may increase children internal locus of control and increase their self-esteem.

Also, involving the teachers in well-organized courses in the field of child mental health, psychological well-being, coping with stress and siege. Also improving the school environment atmosphere and relationship between students in schools may improve psychological and physical well-being of children. Additional studies which test complex meditational models are warranted to provide further insights into multiple pathways among early socioeconomic adversity, locus of control and mental health problems including PTSD, depression, and anxiety. Evidence indicates that programs focusing on restructuring cognitive coping strategies and control-related beliefs result in shifts in locus of control from less external to more internal orientation.[20]

CONSENT

All authors declare that 'written informed consent was obtained

from the patient (or other approved parties) for publication of this report.

ETHICAL APPROVAL

All authors hereby declare that all the research proposal and scales had been examined and approved by the appropriate Palestinian ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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