

## Depression and general anxiety in the prisoner of war's children: a cross sectional study

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### Abstract

**Background:** The main aim of this study was to assess the prevalence of depression and general anxiety of the prisoners of war (POW) children. The study was also designed to compare the prevalence of depression and general anxiety amongst the POW's children and normal adults, 20 years after the Iraq-Iran war.

**Method:** An analytic cross-sectional study carried out in June 2009 in Yazd (the centre of Yazd province in Iran). The target and sampled population were the children of the Iranian POW who lived in Yazd. One hundred and twenty six POW's children, who were born before 1990 (date of father's freedom) were assessed. The duration of father's captivity was between 29-119 months. Ninety-five subjects accepted to participate. General anxiety and major depression were assessed by Persian version of Hamilton Scale for anxiety and Beck depression Inventory. This study was a combination of the psychological interview and questionnaire. Ninety five of normal adult group were also paired matched and assessed.

**Result:** Among 126 POW's children who fulfilled the inclusion criteria, the responsive rate was 75.3 % (95 participants). The mean age of participants was 28.3 (SD: 5.34). The father's captivity duration were 29-119 months (mean: 79.2, SD: 21.6). The prevalence of depression and general anxiety amongst the POW's children were 48.4% and 79%. The prevalence of depression and general anxiety among the paired group were 21.1% and 63.2%. The differences between two groups were significant ( $p=0.000$ ).

**Conclusion:** In this study we have demonstrated the prevalence of major depression and general anxiety in POW's children and a normal adult sample. The differences of major depression and general anxiety among the two groups were significant.

**Keywords:** Prisoner of war, Depression, General anxiety, Iraq-Iran war.

### Introduction

War is a man made nightmare which affects people directly and indirectly. The war results in prolonged problems that are silent and invisible (1).

The 1980-1988 Iraq-Iran war left about 188,000 martyrs and 378,540 disabled vet-

erans and war prisoners, however after two decades the casualties have continued. The survivors of chemical warfare are not the only victims; the second generation of war soldiers with psychological disorders is also disastrous (2).

The Iranian homogenous studies showed; Post-traumatic stress disorder (PTSD), ma-

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major depression and anxiety are highly prevalent amongst the children of veterans and martyrs (3). According to the mental health status study, the duration of father's captivity has significant effects on the mental health of their children. The comparison of mental health between the children of martyrs, disabled veterans and prisoners of war demonstrated severe anxiety occurred in the POW's children (4-6).

International war studies have emphasised psychological effects of wars. A national mental health survey in Afghanistan showed high prevalence rates of anxiety (72%), depression (68%) and PTSD (42%) (7). However studies of the POW's children have been rarely done.

Major Depression, anxiety and psychotic episode are generated in the traumatic and stressful events (8) and war is a well-known extreme traumatic event. Family problems like parent's diseases, death, divorce or separation have been the trigger for major depression and anxiety (9,10). The POW's children had experienced all the aforementioned situations.

The POW's children were divided in two groups:

- a) The children who were born before the father's captivity.
- b) The children who were born after father's freedom. The first group experienced father disabilities, psychological problems and distance of father.

Of 42,175 prisoners of Iraq-Iran war who lived in Iran, 743 of them were in Yazd. Only 126 of their children were born before 1990 (date of father's freedom) (11). The main aim of this study was to assess the prevalence of depression and general anxiety among the POW's children. In addition the study was designed to compare the distribution of depression and general anxiety in the POW's children and normal adults.

## Methods

This was an analytic cross-sectional study. We did not follow the study samples prospectively or retrospectively. The study

was carried out in June 2009 in the city of Yazd in Iran. The target and sampled population were the children of the Iranian POW who lived in Yazd. All 126 children of POW, who were born before 1990 (date of father's freedom) were assessed psychologically. The duration of father's captivity was between 29-119 months. According to the Iranian martyrs and veterans' affairs foundation (IMVAF) classification, the severity of veteran's disability ranged from 45% to 60%. Subjects were identified from a list of POW's names at the IMVAF -Yazd branch. Subjects were invited to participate in the study. Seventeen subjects (13.4%) did not live in Yazd and one (0.7%) died and 13 subjects reused to participate. Ninety-five subjects' were agreed for the study. The participation rate was 75.3%.

The second study group consisted of adults who their fathers were not POWs or had not died. They were selected by individual paired matching according to age, sex, education, career, marital status, number of family members and socio-economic situation. They were selected by neighbor or best friend methods (12).

## Data collection procedure

The method of the study was a combination of psychological interview and questionnaires. It was a face to face psychological interview of at least 45 minutes duration. the interview evaluates: a) cognition; b) current state of consciousness, confusion, or contact; c) mood or affects; d) thought pattern, hallucinations, delusions or distortion of thought and ideas; e) personality; f) behaviour pattern; g) complaint. All interviews were done by 2 of the authors (NN-SKR) and conducted at the participants' home in private and confidential conditions. After the interview, each individual took a 15 minute break, and then filled out the questionnaires. We adjusted the questionnaire results with the psychological interview on the basis of the confirmation for final diagnoses. It should be highlighted that interviews were done by

general practitioners.

### *Instruments*

1. Persian version of the Beck Depression Inventory (BDI): it has high internal consistency (Cronbach  $\alpha=0.87$ ) and acceptable test-retest reliability ( $r=0.72$ ) (13, 14). The BDI contains 21 questions. Depression symptoms are classified as none (0-4), mild (5-7), moderate (8-15) and severe ( $>16$ ) by BDI. Moderate and severe scores were confirmed as clinical depression by interview. Where the psychological examinations and questionnaire scores were not adjusted, we relied on psychological examination.

2. Persian version of Hamilton Anxiety Scale (HAM-A): it is a well recognised valid and reliable questionnaire in Iran (15). HAM-A contains 14 questions. Anxiety symptoms are classified as mild ( $<17$ ), moderate (18-24) and severe ( $>25$ ). Moderate and severe scores were confirmed as general anxiety by a standard face to face psychological interview. Where the psychological examinations and questionnaire scores were not adjusted, we relied on the psychological examination (15).

3. The psychological examination checklist (16).

4. The demographic check list included

sex, age, education(the highest degree), career, marital status and the duration of living without their father (in months).

### *Statistical analysis*

Descriptive analyses were used for demographic variables. The paired t-test was used to compare the mean score of anxiety and depression in two groups. The bivariate correlation was used to check the association between anxiety and depression scores and demographic variables (age, sex, marital status, education level and career) in two groups. The Mc Nemar Chi-Square test was used to compare the anxiety and depression scores in two paired matched groups. The  $p < 0.05$  was significant. All the Statistical analyses were based on 95 individual paired match groups (190 subjects).

## **Results**

### *Description of sample*

Of 126 POW's children who met the inclusion criteria, 95 people accepted our invitation and participated in the study (75.3%). Their ages ranged from 18-40 years old (mean:  $28.3 \pm 5.34$ ). Their father's durations of captivity ranged from 29-119 months (mean:  $79.2 \pm 21.6$ ). Table 1 shows the demographic characteristics of the participants.

Table1. Description of the demographic characteristics of 95 paired match (N in group=95).

Characteristics	Prevalence in each groups
Sex	
Male	41(43.2%)
Female	54(56.8%)
Educational level	
$<12^{\text{th}}$ grade	39(41%)
$>12^{\text{th}}$ grade	56(59%)
Marital state	
Single	28(29.4%)
Married	62(65.4%)
Divorced	5(5.2%)
Career	
Student(college or university)	49(51.57%)
Employed	8(8.4%)
Unemployed	8(8.4%)
House keeper	20(21.05%)
Others	10(10.5%)

Table 2. The prevalence of depression disorder in two paired match groups (MC Nemar)

Depression disorder		Normal adult group		Total
		With depression disorder	Without depression disorder	
POW group	With depression disorder	15(31.3%)	33(68.8%)	48(50.5%)
	Without depression disorder	5(10.6%)	42(89.4%)	47(49.5%)
	total	20(21.1%)	75(78.9%)	95(100%)

Table 3. The prevalence of anxiety disorder in two paired match groups (MC Nemar)

Anxiety disorder		Normal adult group		Total
		With Anxiety disorder	Without Anxiety disorder	
POW group	With Anxiety disorder	53(68.8%)	24(31.2%)	77(81.1%)
	Without anxiety disorder	7(38.9%)	11(61.1%)	18(18.9%)
	total	60(63.1%)	35(36.9%)	95

### *Prevalence of depression and anxiety disorders*

According to Table 2, the prevalence of depression was different in two groups significantly ( $p=0.000$  MC Nemar). The mean of depression scores between two groups was different significantly ( $p$ -value: 0.000).

Based on Table 3, the prevalence of anxiety was significantly different in the two groups ( $p=0.003$  MC Nemar). The mean of anxiety scores between the two groups was also significantly different ( $p$ -value: 0.000).

In the POW's children group no association with the prevalence of depression and sex ( $p=0.006$ ), age ( $p=0.02$ ), education ( $p=0.876$ ), marital status ( $p=0.045$ ), father's duration of captivity ( $p=0.122$ ) or other demographic characteristics was present. Also there were no associations with the prevalence of anxiety and sex and sex ( $p=0.278$ ), age ( $p=0.021$ ), education (0.160), marital status ( $p=0.040$ ), father's duration of captivity ( $p=0.873$ ) or other demographic characteristics.

In the normal adult group, the prevalence of depression was higher in females ( $p=0.003$ ), married ( $p=0.004$ ) and students ( $p=0.000$ ). Also the prevalence of anxiety was higher in females ( $p=0.003$ ).

### **Discussion**

In this study we have determined the prevalence of major depression and general anxiety in the children of POWs of the

Iran-Iraq war and a control group of adults group whose fathers were alive and had not been POWs. There were significant differences of major depression and general anxiety among the two groups.

The high prevalence of general anxiety in the children of martyrs, disabled veterans and prisoners of war has been shown in the national studies. These studies estimated prevalence of general anxiety between 20%-43% and they also showed the prevalence of major depression has been less than for general anxiety (17, 18). Studies of the children of martyrs and disabled veterans in Esfahan, Shahrkord, Chalous and Tabriz showed severe psychological problems in veteran's children who illustrated the difficulties of losing a father or living with a disabled father (17, 19, 20). The lifetime prevalence of major depression in normal adults is 15-18%, depending on the many factors (17).

International war studies have emphasized the effects on the survivors of war or the children of members of the military, but the children of POWs seem to be ignored. A review of Persian Gulf

War-related trauma and psychological distress of children and their mothers showed that the death of a father during the war was significantly correlated with their children developing psychological problems (18, 20, 21).

In this study we compared the POW's

children with normal adults. The prevalence of depression in the normal adult group was 21.1% and there was a difference between the two groups significantly. The prevalence of general anxiety in normal adult group was 63.3% which is high and the difference between the two groups was significant.

In the other studies of veteran's children, the researchers focused on the missing or loss of the fathers (5). Although the duration of father's captivity is important, living with a former prisoner of the war was another reason for the high prevalence of psychological problems.

We have suggested further studies to compare the psychological problems amongst the POW's children who were born before father's freedom and after father's freedom. Since the POW's children who were born after father's freedom did not experience separation, the comparison of the two groups of POW's children was useful in determining of most effective reasons (father's captivity or living with a former prisoner of the war) for their psychological problems. We also suggest separation of studies on POW's wives which could compare the relationship between mothers' psychological disorder and POW's children with POW psychological disorder and POW's children.

In this study we can conclude that psychological problems are prevalent in the two comparing groups but higher in the POW's children's group.

This study has some limitations, 17 of the POW's children refused to participate in the study. If there was significant differences between these 17 and the 95 studied POW's children who accepted the participation in the study then this may causes a bias. We used individual paired matched controls which may limit the generalizability of the study. The interviews were done by two general practitioners which was also our limitation. This is a cross-sectional study and has limitations. The relation between psychological problems and demographic characteristics was not significant. The re-

lation between psychological problems and duration of father's captivity was also not significant; it could be due to the left skewed distribution (abnormal distribution) of durations of father's captivity (skewed:-.775). We had tried to control the effect of prisoners of war disability (classification of veterans) by limiting inclusion criteria.

## Conclusion

Psychological disorder is prevalent in POW's children. Psychological disorder was prevalent in the normal adult group which requires further studies to find reasons and solutions. There are other issues among POW's children which should be considered in future studies.

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