*Psychiatria Danubina, 2016; Vol. 28, No. 4, pp 363-371* *Original paper*


# ANGER IN ADULTHOOD IN PARTICIPANTS WHO LOST THEIR FATHER DURING THE WAR IN CROATIA WHEN THEY WERE IN THEIR FORMATIVE AGE

**Ivana Lončar & Mladen Lončar**

*University Hospital Centre Zagreb, Department of Psychiatry, National Centre for Psychotrauma, Zagreb, Croatia*

received: 15.3.2015; revised: 16.12.2015; accepted: 29.1.2016

## *SUMMARY*

***Background:*** *Loss of parents in early childhood can have serious long-term psychological consequences. Abandoned by a close figure of attachment, many persons have developed the emotion of anger, even though the separation was caused by death. The traumatic experience of the loss of a parent is particularly hard in war, because most often it does not occur as an individual trauma. Our aim is to research anger as a personality trait in persons whose father had died in war at a time when they were children, and to compare it with an appropriate civilian control group of subjects.*

***Subjects and methods:*** *The study comprised 155 persons of both sexes. The target group consisted of persons (N=98) whose father had died in the Homeland War and who had just been born at the time of their father's death, or were children or adolescents, and had since their father's death grown up in a single-parent family with their mother, while the control group of subjects (N=57) had not suffered any war losses in the family in the war time from 1991 to 1995. The examined variables were: sex, age, loss of father due to civilian or war causes, marital status, age when the subject lost their father, anger as a state and as a personality trait. STAXI is used in this study; it is frequently used in studies of experiencing, expressing and controlling anger in persons suffering from PTSD.*

***Results:*** *Statistically significant differences were demonstrated in some of the scales and subscales of anger as a state and anger as a personality trait between the abovementioned subject groups, with higher scores in persons who had suffered a civilian loss of father.*

***Conclusions:*** *The study supports the opinion that the social context in which the grieving person is before, during and after the loss of a close person has an important role in the process of grieving, and eventually defines the social and personal meaning of death.*

***Key words:*** *anger - developmental age - war trauma - single-parent family - father's death*

* * * * *

## INTRODUCTION

The loss of one or both parents in early childhood can have serious long-term psychological consequences (de Zulueta 2007). The relationship between the parent and the child, which plays an important protective role and stimulates the child's positive development, is severed (Gribble et al. 1993, Hasanović et al. 2006). Research shows that the most frequent consequences of such experiences in children are overdependence on others, bouts of fury and fear, and pathological grieving (Elizur & Kaffman 1982, Elizur & Kaffman 1983, Cassidy & Shaver 1999).

The traumatic experience of the loss of a parent is particularly hard in war, because most often it does not occur as an individual trauma (Kozarić–Kovačić et al. 2001). Namely, according to the data of the Ministry of Veterans' Affairs, in Croatia there are 4 011 widows of deceased veterans of the Homeland War, while 6 621 have children lost one or both parents (Croatian Ministry of Family, Veterans' Affairs and Intergenerational Solidarity 2008). According to the available data, in almost 30% of families the phenomenon of so called secondary traumatization is present, i.e. the primary trauma of the loss of a husband or father (Croatian Ministry of Family, Veterans' Affairs and Intergenerational Solidarity 2008, Vukušić et al. 2003).

War is an event that changes culture and the foundations of the family and community (Murray et al. 2002, Ghobarah et al. 2004, Robertson & Duckett 2007, Kučukalić & Bravo-Mehmedbašić 2004). Namely, according to the existing statistics on the incidence of reported violence and violent behavior by a partner in families in the Republic of Croatia, a significant increase can be observed in comparison with the pre-war period (Croatian Ministry of the Interior - Cabinet of the Minister - Department of Analytics and Development 2008). Violent behavior is also ubiquitous among young people who were born during the war, or who were born immediately before the beginning of the Homeland War, which is evidenced by increasingly frequent peer violence, homicides and suicides, and inhumane treatment and abuse of animals. The social context in which the grieving person is before, during and after the loss of a close person plays an important role in the process of grieving, and eventually determines the so called social meaning of death. Traumatic experiences can destroy the social system of care, protection and meaning that surrounds the individual, and can for that reason postpone or even block the process of grieving (Bar-On

et al. 1998). Furthermore, the society at large can play a role in enabling or disrupting that process, by emphasizing the necessity to confront the past or by emphasizing the value of being focused on the future (Kleber 1995, Bar-On et al. 1998, Milas & Jelovac 1999).

Recent literature suggests that the psychological health of a child who has experienced the death of a parent primarily depends on the support of the wider family and on the child's relationship with the remaining parent (Breier et al. 1988, Gudas 1993, Hadi & Llabre 1998, Shaw 2003). One should also take into consideration sex differences among children when it comes to the loss of a parent. For instance, girls are more vulnerable in the manifested symptoms, such as anxiety and depression, while boys can manifest more behavior disorders (Shaw 2003). With regard to aggression, it has been established that physical aggression was more frequent in men than in women in any culture and at any age, beginning from early childhood, with the highest value between the ages of 20 and 30. Anger did not exhibit differences between the sexes (Singer & Singer 1990, Archer 2004). The developmental age at which a person lost their father represents an important factor for the negative correlation between the lack of a father and the benefit for further psychosocial and emotional development (Bloch et al. 1956, Green et al. 1991). Unfortunately, studies dealing with the interaction between early stressors and adult aggressiveness and hostility are rare. However, it has been proven that early traumas, such as the loss of a parent, i.e. lack of a primary caregiver with whom the feeling of attachment is associated, increase reactivity to stimuli from the environment and cause hypersensitivity in interpersonal situations (Green et al. 1991, Bruce 1993, Garbarino & Kostelny 1996, Berman 2001, Smith et al. 2001, Shaw 2003).

Anger is a significant activator of aggressiveness, but is neither indispensable nor sufficient for its occurrence (Novaco & Chemtob 2002). In this paper we proceed from the basic constructs in the majority of theories, namely anger, hostility and violent behavior. Numerous studies have confirmed their negative impact on the physical and psychobiological condition (Biaggio et al. 1981, Spielberger 2003, Daneš & Horvat 2005; Zalihić et al. 2008).

## SUBJECTS AND METHODS

### Subjects

The study comprised 155 persons of both sexes. The target group consisted of persons (N=98) whose father had died in the Homeland War and who had just been born at the time of their father's death, or were children or adolescents, and had since their father's death grown up in a single-parent family with their mother (Table 1). The study also comprised a control group of subjects (N=57) who had not suffered any war losses in the family in the war time from 1991 to 1995 (Table 1). The control group included only those subjects who matched the studied group in certain characteristics, including: age, sex, education, social and economic status, civilian loss of father. The subjects were selected randomly from the health care system in order to comply with the above criteria. Only those subjects who did not present with any personal psychopathological disorders were included. The total sample contained 50% of women (77% civilian and 33% war loss of father) and 50% of men (23% civilian and 56% war loss of father) (Table 1). The majority of them, 63%, were not married at the time of the study (27.6% civilian and 72.4% war loss of father), 51% of subjects were employed (46.8% civilian and 53.2% war loss of father), while 43% were in schooling (25% civilian and 75% war loss of father), with 51% having a high school degree (24.1% civilian and 75.9% war loss of father), and 64.8% having a university degree (71.4% civilian and 28.6% war loss of father) (Table 1). The subjects' age ranged between 17 and 37, and the age at which they lost their father between 1 and 30 in the overall sample, with the age of those who lost their father due to non-war related causes ranging between 2 and 30, and the age of those who lost their father to war between 1 and 20 (Table 1).

### Methods

The study was conducted as part of the "Program for the improvement of the quality of life in the families of deceased Croatian defenders, Croatian war military invalids, and the Croatian defenders suffering from PTSD", sponsored by the Croatian Ministry of Family, Veterans' Affairs and Intergenerational Solidarity and implemented by health institutions that performed systematic examinations, as well as the School of Medicine of the University of Zagreb. The data for this study were collected over a period of six months in 2010. The program was implemented in compliance with ethical and professional principles, as well as with the principles of data confidentiality. The subjects were selected randomly from the pool of first arrivals to a systematic examination.

The examined variables were: sex, age, loss of father due to civilian or war causes, marital status, age at which the subject lost their father, anger as a state and anger as a personality trait. Only those subjects were included who did not present with personal psychopathological disorders, which was previously assessed by a psychiatrist. All of the participants signed the informed consent form for their participation in the study, which, among other things, guaranteed data anonymity.

### Data Collection

A psychologist administered the Structured Interview for Socio-Demographic Data and the State-Trait Anger Expression Inventory – 2 (STAXI-2), while the Mini International Neuropsychiatric Interview was administered by a psychiatrist in order to eliminate those subjects who presented with certain psychopathological disorders. STAXI is frequently used in studies of experiencing,

**Table 1.** Socio-demographic characteristics of the participants (N=155)

| Characteristic | Participants No. (%) War loss (N=98) | Civil loss (N=57) | Total |
|---|---|---|---|
| Gender | | | |
| Women | 34 (43.6) | 44 (56.4) | 78 (50.3) |
| Men | 64 (83.1) | 13 (16.9) | 77 (49.7) |
| Age | | | |
| Mean +/- standard deviation | 25.42±5.01 | 29.42±4.02 | 26.90+/-5.05 |
| Range (min.-max.) | 17-37 | 20-37 | 17-37 |
| Age when father died | | | |
| Mean +/- standard deviation | 8.31±4.98 | 19.69±6.99 | 12.48+/-7.0 |
| Range (min.-max.) | 1-20 | 2-30 | 1-30 |
| Education | | | |
| Primary school | 15 (93.7) | 1 (6.3) | 16 (10.3) |
| Secondary school | 60 (75.9) | 19 (24.1) | 79 (51.0) |
| College | 11 (73.3) | 4 (26.7) | 15 (9.7) |
| University education | 12 (26.7) | 33 (73.3) | 45 (29.0) |
| Marital status | | | |
| Married | 21 (52.5) | 19 (47.5) | 40 (25.8) |
| Unmarried | 71 (72.4) | 27 (27.6) | 98 (63.2) |
| Divorced | 2 (100) | 0 | 2 (1.3) |
| Unmarried but live together | 3 (21.4) | 11 (78.6) | 14 (9.0) |
| Widowed | 1 (100) | 0 | 1 (0.6) |
| Employment status | | | |
| Employed | 42 (53.2) | 37 (46.8) | 79 (51.0) |
| Unemployed | 5 (50) | 5 (50) | 10 (6.5) |
| Still in education | 51 (75) | 15 (25) | 66 (42.6) |

expressing and controlling anger in persons suffering from PTSD. It consists of 57 items, which form 6 scales and 5 subscales, and an Anger Expression Index. The scales with accompanying subscales are: State Anger scale (subscales: emotion of anger, readiness to express anger verbally, readiness to express anger physically), Trait Anger scale (subscales: anger-prone temperament, reaction of anger), Anger Expression-Out, Anger Expression-In, Anger Control-Out and Anger Control-in, and Anger Expression Index that provides a measure of total anger expression based on the score on Anger Expression and Anger Control-In/Out scales. Possible score on the Anger Expression Index ranges from 0 to 96. For 15 items pertaining to anger as a state, subjects assess the intensity of anger they are feeling *"right now"* on a four-point scale, where 1 means *"not at all"*, and 4 means *"very much"*. On 10 items pertaining to anger as a personality trait, subjects assess how they feel *"in general"* on a four-point frequency scale, where 1 means *"almost never"*, and 4 *"almost always"*. On 32 items pertaining to anger expression and control, subjects assess how often they react in general or behave in certain ways when they feel angry. Subjects answer on a four-point scale, where 1 means *"almost never"*, and 4 means *"almost always*". Instructions for the completion of the entire questionnaire are given before the items, and the subjects should be warned before they start completing the questionnaire to fill out the required demographic information (name or identification number, sex, date of examination, education, marital status, profession). STAXI-2 was standardized in Croatia on 871 students of vocational and grammar high schools aged 15 to 18. The questionnaire takes 12 to 15 minutes to complete on average. It is an ordinal measurement scale which, mostly based on quantitative features, determines what is more or less than, i.e. the scale is formed based on ordering operations without establishing how much bigger or smaller something is.

### Statistical analysis

Measures of descriptive and inferential statistics were used in data processing. Qualitative data were shown by absolute and relative frequencies (f, %), while quantitative data were shown by central tendency measures (arithmetic mean) and dispersion measures (standard deviation, range). The normality of distribution for the inventories used was verified by the Kolmogorov-Smirnov test. To test for differences between the two groups, the t-test was used. The correlation between quantitative variables was tested by the Pearson correlation coefficient. The level of statistical significance for this study was established at 5%. The data were processed using the SPSS 17.0 program package.

## RESULTS

With regard to the results obtained on the state anger scale, statistically significant differences were shown to exist between the groups (between the target group consisting of persons whose father had died in the Homeland War and the control group of subjects who had not suffered any war losses in the family in the war time, only civilian losses) ($t=3.549$; $p<0.05$), where it is visible that anger as a state is more pronounced in

persons whose father had died of non-war related causes (M=19.32, SD=5.25), in comparison with persons whose fathers were killed Croatian veterans (M=16.92, SD=3.16) (Table 2). On the emotion of anger subscale, statistically significant differences were also recorded (t=3.534; df=153, p<0.05), showing that in persons whose

**Table 2.** Testing for differences between persons with the experience of a civil loss of father (N=57) and persons with the experience of a war loss of father (N=98) on the scales and subscales of the STAXI inventory

| Scales/Subscales | Status | M | SD | t | df | p |
|---|---|---|---|---|---|---|
| Anger as a condition | C | 19.32 | 5.25 | 3.549 | 153 | p<0.05 |
| | W | 16.92 | 3.16 | | | |
| Emotion of anger | C | 7.37 | 2.49 | 3.534 | 153 | p<0.05 |
| | W | 6.15 | 1.76 | | | |
| Tendency to express anger verbally | C | 6.44 | 2.21 | 3.157 | 153 | p<0.05 |
| | W | 5.57 | 1.21 | | | |
| Tendency to express anger physically | C | 5.51 | 1.25 | 1.887 | 153 | p>0.05 |
| | W | 5.19 | 0.82 | | | |
| Anger as a personality trait | C | 19.40 | 5.01 | -0.236 | 153 | p>0.05 |
| | W | 19.59 | 4.63 | | | |
| Temperament prone to anger | C | 7.32 | 2.14 | -0.109 | 153 | p>0.05 |
| | W | 7.36 | 2.35 | | | |
| Angry reaction | C | 8.91 | 2.66 | 0.574 | 153 | p>0.05 |
| | W | 8.68 | 2.22 | | | |
| Outward expression of anger | C | 14.91 | 3.72 | -0.081 | 153 | p>0.05 |
| | W | 14.96 | 3.30 | | | |
| Inward expression of anger | C | 18.07 | 4.24 | 2.238 | 153 | p<0.05 |
| | W | 16.55 | 3.97 | | | |
| Control of outward anger | C | 21.81 | 4.64 | -0.499 | 153 | p>0.05 |
| | W | 22.17 | 4.26 | | | |
| Control of inward anger | C | 22.39 | 4.51 | 0.188 | 153 | p>0.05 |
| | W | 22.24 | 4.49 | | | |
| Anger expression index | C | 36.79 | 11.66 | 0.887 | 153 | p>0.05 |
| | W | 35.09 | 11.38 | | | |

C - Civil loss of father; W - War loss of father

**Table 3.** Testing for differences in the STAXI scales and subscales with regard to the subject's sex (Male N=13; Female N=44) (civil loss of father)

| Scales/Subscales | Sex | M | SD | t | df | p |
|---|---|---|---|---|---|---|
| Anger as a condition | M | 20.00 | 5.24 | 0.531 | 55 | p>0.05 |
| | F | 19.11 | 5.29 | | | |
| Emotion of anger | M | 7.38 | 2.25 | 0.026 | 55 | p>0.05 |
| | F | 7.36 | 2.58 | | | |
| Tendency to express anger verbally | M | 6.46 | 1.80 | 0.042 | 55 | p>0.05 |
| | F | 6.43 | 2.33 | | | |
| Tendency to express anger physically | M | 6.15 | 1.72 | 2.178 | 55 | p<0.05 |
| | F | 5.32 | 1.02 | | | |
| Anger as a personality trait | M | 21.85 | 5.71 | 2.055 | 55 | p<0.05 |
| | F | 18.68 | 4.61 | | | |
| Temperament prone to anger | M | 8.08 | 2.59 | 1.469 | 55 | p>0.05 |
| | F | 7.09 | 1.97 | | | |
| Angry reaction | M | 10.15 | 3.10 | 1.963 | 55 | p>0.05 |
| | F | 8.55 | 2.43 | | | |
| Outward expression of anger | M | 16.54 | 4.90 | 1.827 | 55 | p>0.05 |
| | F | 14.43 | 3.21 | | | |
| Inward expression of anger | M | 17.62 | 4.89 | -0.437 | 55 | p>0.05 |
| | F | 18.20 | 4.08 | | | |
| Control of outward anger | M | 21.31 | 5.79 | -0.438 | 55 | p>0.05 |
| | F | 21.95 | 4.31 | | | |
| Control of inward anger | M | 21.00 | 5.55 | -1.267 | 55 | p>0.05 |
| | F | 22.80 | 4.14 | | | |
| Anger expression index | M | 39.85 | 14.95 | 1.076 | 55 | p>0.05 |
| | F | 35.89 | 10.54 | | | |

M – male; F - female

**Table 4.** Testing for differences in STAXI scales and subscales with regard to the subject's sex (Male N=64; Female N=34) (war loss of father)

| Scales/Subscales | Sex | M | SD | t | df | p |
|---|---|---|---|---|---|---|
| Anger as a condition | M | 16.55 | 2.43 | -1.607 | 96 | p>0.05 |
| | F | 17.62 | 4.16 | | | |
| Emotion of anger | M | 6.06 | 1.61 | -0.694 | 96 | p>0.05 |
| | F | 6.32 | 2.04 | | | |
| Tendency to express anger verbally | M | 5.47 | 1.02 | -1.155 | 96 | p>0.05 |
| | F | 5.76 | 1.49 | | | |
| Tendency to express anger physically | M | 5.02 | 0.12 | -3.076 | 96 | p< .05 |
| | F | 5.53 | 1.33 | | | |
| Anger as a personality trait | M | 19.17 | 4.02 | -1.233 | 96 | p>0.05 |
| | F | 20.38 | 5.59 | | | |
| Temperament prone to anger | M | 7.13 | 1.98 | -1.344 | 96 | p>0.05 |
| | F | 7.79 | 2.91 | | | |
| Angry reaction | M | 8.73 | 2.14 | 0.308 | 96 | p>0.05 |
| | F | 8.59 | 2.40 | | | |
| Outward expression of anger | M | 14.72 | 3.17 | -0.988 | 96 | p>0.05 |
| | F | 15.41 | 3.55 | | | |
| Inward expression of anger | M | 16.67 | 3.95 | 0.411 | 96 | p>0.05 |
| | F | 16.32 | 4.06 | | | |
| Control of outward anger | M | 22.25 | 4.01 | 0.243 | 96 | p>0.05 |
| | F | 22.03 | 4.75 | | | |
| Control of inward anger | M | 22.77 | 4.09 | 1.587 | 96 | p>0.05 |
| | F | 21.26 | 5.07 | | | |
| Anger expression index | M | 34.38 | 10.62 | -0.854 | 96 | p>0.05 |
| | F | 36.44 | 12.76 | | | |

M – male; F – female

father had died of non-war related causes the emotion of anger is more pronounced (M=7.37, SD=2.49) than in persons whose father was a killed Croatian veteran (M=6.15, SD=1.76) (Table 2). Moreover, persons whose father had died as a civilian are more prone to express anger verbally (M=6.44, SD=2.21), in comparison with persons whose father was a killed Croatian veteran (M=5.57, SD=1.21), with this subscale also showing statistically significant differences (t=3.157; df=153, p<0.05) (Table 2). The subjects whose father had died of non-war related causes are more prone to inward expressions of anger (M=18.07, SD=4.24), than is the case with subjects whose father had died in war (M=16.55, SD=3.97), with the said differences also proven to be statistically significant (t=2.238; df=153, p<0.05) (Table 2). When it comes to the tendency to express anger physically, there was no statistically significant difference at the significance level of 5% (t=1.887, df=153, p>0.05) (Table 2). Statistically significant differences between these two groups of subjects were also not shown in anger as a personality trait (t=-0.236; df=153, p>0.05); temperament prone to anger (t=-0.109; df=153, p>0.05); angry reactions (t=0.574; p>0.05); outward expression of anger (t=-0.081; p>0.05); control of outward (t=-0.499; df=153, p>0.05) and inward anger (t=0.188; df=153, p>0.05) (Table 2). When looking at the results for both groups and in the total expression of anger, one can observe that there is no statistically significant difference (t=0.887; df=153, p>0.05) (Table 2).

Statistically significant sex differences were observed in the tendency to express anger physically in the group of subjects whose father had died of non-war related causes (t=2.178; df=55, p<0.05), as the results show that male subjects are more prone to express anger physically (M=6.15, SD=1.72), in comparison with female subjects (M=5.32, SD=1.02) (Table 3). Furthermore, the results also showed the existence of statistically significant differences on the trait anger scale (t=2.055; df=55, p<0.05) (Table 3). Anger as a personality trait is more pronounced in male subjects (M=21.85, SD=5.71), than in female subjects (M=18.68, SD=4.61) (Table 3). In other scales and subscales, as well as in the total score, no statistically significant differences were found for these two groups of subjects. Statistically significant sex differences were observed in the tendency to express anger physically in the group of subjects whose father had died in war (t=-3.076; df=96, p<0.05), where it was shown that female subjects are more prone to express anger physically (M=5.53, SD=1.33), in comparison with male subjects (M=5.02, SD=0.12) (Table 4).

In other scales and subscales, as well is in the overall score, the results were not shown to be statistically significant. The analysis of the correlation between the current age, the age at which the subject lost their father, and the results obtained on the STAXI inventory showed there was no statistically significant correlation between the measured variables in both subject groups (Tables 5 and 6).

Overall, the key results were that those who lost their father in non-war related events were more prone to indices of anger than those who lost their father in a war related event.

**Table 5.** Coefficient of correlation between the subject's current age, the age at which they lost their father, and the results on the STAXI scales and subscales (civil loss of father)

| Scales/Subscales | Age at the time of loss of father | Current age | p |
|---|---|---|---|
| Anger as a condition | -0.210 | 0.052 | p>0.05 |
| Emotion of anger | -0.241 | 0.013 | p>0.05 |
| Tendency to express anger verbally | -0.188 | 0.041 | p>0.05 |
| Tendency to express anger physically | -0.070 | 0.119 | p>0.05 |
| Anger as a personality trait | -0.142 | -0.022 | p>0.05 |
| Temperament prone to anger | -0.062 | -0.063 | p>0.05 |
| Angry reaction | -0.218 | -0.023 | p>0.05 |
| Outward expression of anger | -0.064 | -0.078 | p>0.05 |
| Inward expression of anger | -0.042 | -0.076 | p>0.05 |
| Control of outward anger | -0.015 | -0.095 | p>0.05 |
| Control of inward anger | -0.121 | -0.207 | p>0.05 |
| Anger expression index | 0.017 | 0.065 | p>0.05 |

**Table 6.** Coefficient of correlation between the subject's current age, the age at which they lost their father, and the results on the STAXI scales and subscales (war loss of father)

| Scales/Subscales | Age at the time of loss of father | Current age | p |
|---|---|---|---|
| Anger as a condition | -0.100 | -0.109 | p>0.05 |
| Emotion of anger | -0.085 | -0.095 | p>0.05 |
| Tendency to express anger verbally | -0.105 | -0.109 | p>0.05 |
| Tendency to express anger physically | -0.050 | -0.055 | p>0.05 |
| Anger as a personality trait | -0.092 | -0.093 | p>0.05 |
| Temperament prone to anger | -0.064 | -0.059 | p>0.05 |
| Angry reaction | -0.099 | -0.107 | p>0.05 |
| Outward expression of anger | -0.136 | -0.130 | p>0.05 |
| Inward expression of anger | 0.012 | 0.032 | p>0.05 |
| Control of outward anger | 0.037 | 0.047 | p>0.05 |
| Control of inward anger | 0.062 | 0.079 | p>0.05 |
| Anger expression index | -0.074 | -0.075 | p>0.05 |

## DISCUSSION

Starting from the position of war living conditions and the loss of father to a violent death in war, one would expect for persons who have had the experience of losing their father to war to demonstrate higher scores on some of the anger scales in comparison with the persons whose father had died of non-war related causes. However, in all the scales and subscales in which a difference was demonstrated between these two groups, the difference went along the lines of higher scores in persons who had suffered a civilian loss of father. Generally speaking, persons who had suffered a civilian loss of father express relatively strong feelings of anger ranging from agitation to rage, which is not as pronounced in persons who had lost their father to war, and they also experience a high degree of tendency to express their anger verbally (by screaming, yelling, shouting), directing their anger to someone specific or in general (Spielberger 2001). In combination with a high score on the trait anger scale, one can speak of a chronic state (Spielberger 2001). Furthermore, persons who have suffered a civilian loss of father frequently experience strong feelings of anger, but tend to suppress those feelings instead of expressing them physically or verbally (Spielberger 2001).

Socioeconomic reasons may be the cause for significantly more expressed anger in persons who have suffered a civilian loss of father. Another potential explanation for better adjustment could be the external and not entirely unexpected cause for war victim families, as well as their children's younger age. Their family and community support networks might have rallied around them subsequently. Namely, it seems the society provides for the surviving members of the deceased veteran’s family. On the other hand, however, this can also be a reason for the development of a new trauma that leads to aggression towards one's own position as a widow, and towards the late husband and father, which points to generally higher scores on anger scales in both groups.

Results of studies demonstrate the existence of a difference between neurobiological risks in a child and social risks in the family environment, with both of these factors contributing to an insecure parent-child relationship and facilitating the development of externalizing disorders (Greenberg et al. 1993). The effects of the family structure on the results of the child's development are brought about through the family environment and the children's relationship with their parents (Kalantari et al. 1993, Cassidy & Shaver 1999, Barber 2001, Jaffee et al. 2003).

When interpreting the obtained data with regard to distinguishing these two groups in anger, one should exercise caution and bear in mind that the average age at which the subjects lost their father to non-war related causes was about 19, while the average age for war-related loss of father was about 8. The data from literature show that the frequency of experiencing and expressing anger decreases, and control of anger increases with age in the healthy population aged 16 and older (Spielberger 2001). In our study, no correlation was demonstrated between the age at which the subject lost their father, current age, and anger (including all scales and subscales) in either of the groups, but possible negative data can be explained by the fact that the inventory may not be sensitive enough to discover age/developmental trends which may actually exist. Such data were also shown in the studies of other authors, which did not confirm the existence of age differences, because the studies comprised younger children and in a smaller age range than in the studies that found differences with regard to age (Stein et al. 1999, Magwaza et al.1993).

The results obtained on sex differences in persons who had suffered a civilian loss of father confirm findings from the literature. Namely, sex differences were shown to be significant in the tendency to express anger physically and in anger as a personality trait, with men having higher scores. The scores in general are quite high, even in relation to normative data, which suggests that the persons from the sample who had suffered a civilian loss of father are prone to a strong tendency to express anger physically (e.g. by hitting someone or breaking things), and if one takes into consideration the higher scores for outward and inward expression of anger, and in combination with low scores on the control of outward anger, these persons probably express anger physically with considerable damage to themselves, both economical and to their health and relationships (Spielberger 2001). However, when it comes to persons who have lost their father to war, findings from the literature suggesting that men were more violent than women were not confirmed. Namely, the tendency to express anger physically is more pronounced in female subjects. When interpreting this, one should take into account the unequal number of subjects per sex. Nevertheless, the obtained results can be explained in several ways. For instance, literature very often mentions a combination of biological and social factors when it comes to sex/gender differences. The meaning of correlation between behavioral and biological differences lies in understanding the difference in the development processes through which behavior is manifested. So far there have been two types of evidence for sex differences in aggressiveness among people. Firstly, there are data about sex differences in the healthy population, including cross-cultural data. Secondly, there are studies about the correlation between aggression and early androgen exposure among individuals known to have had atypical androgen exposures. Sex differences in anger as a personality trait were not shown to be significant in persons who had lost their father to war. Related to this may be the differences in the average age at which the subjects had lost their father between the two subject groups, i.e. persons who had lost their father to non-war related causes mostly experienced this loss while in adolescence, when the sex features are perhaps most differentiated in the social and psychological sense.

## CONCLUSIONS

One of the main limitations of this study and its implications for future research including families that have experienced loss due to a civilian death is the possible heterogeneity of the current sample. Also, when interpreting the results it would be helpful to consider the implications for the practice and provision of services, which also need to be investigated. Only longitudinal studies could provide a valid insight into what actually happens in such situations, however these studies have not been conducted to date, and would also be hard to conduct. Thus the existing results are mostly based on cross-sectional studies, i.e. studies with a lapse of time where one takes into consideration the current state. Namely, a large number of studies still provide evidence on the direct correlation between parental behavior, negative family environment, and behavioral problems that appear later on in life, which was also corroborated by our study.

***Acknowledgements:*** None.

***Conflict of interest:*** None to declare.

### *Contribution of individual authors:*

Ivana Lončar: design of the study, collecting data, interpretation of data, writing the paper; statistical analysis.
Mladen Lončar: design of the study, literature searches, interpretation of data, writing the paper.

## References

1. *Abrarns KY, Rifkin A & Hesse E: Examining the role of parental frightened/frightening subtypes in predicting disorganized attachment within a grief observational procedure. Dev Psychopathol 2006; 18:345-61.*
2. *Archer J: Sex differences in aggression in real-world settings: A meta-analytic review. Rev Gen Psychol 2004; 8:291-322.*
3. *Barber BK: Political violence, social integration and youth functioning. J Community Psychol 2001; 29:259-80.*
4. *Bar-On D, Eland J, Kleber RJ, Krell R, Moore Y, Sagi A et al.: Multigenerational Perspectives on Coping with the Holocaust Experience: An Attachment Perspective for Understanding the Developmental Sequelae of Trauma across Generations. Int J Behav Dev 1998; 22:315-38.*

5. *Belsky J & Fearon RMP: Early attachment security, subsequent maternal sensitivity, and later child development: Does continuity in development depend upon continuity of caregiving? Attach Hum Dev 2002; 3:361-87.*
6. *Belsky J & Jaffee S: The multiple determinants of parenting. In Cicchetti D & Cohen D (eds.): Developmental psychopathology, 2nd Ed., Vol. 3: Risk, disorder and adaptation, 38-85. NY: Wiley; 2006.*
7. *Berman H: Children and War: Current Understandings and Future Directions. Public Health Nurs 2001; 18:243-52.*
8. *Biaggio MK, Supplee K & Curtis N: Reliability and validity of four anger scales. J Pers Assess 1981; 45:639-48.*
9. *Bloch DA, Silber E & Perry SE: Some factors in the emotional reaction of children and disaster. Am J Psychiatry 1956; 113:416-22.*
10. *Breier A, Kelsoe JR, Kirwin PD, Beller SA, Wollkowitz OM & Pickar D: Early parental loss and development of adult psychopathology. Arch Gen Psychiatry 1988; 45:987-93.*
11. *Bruce DP: Neurodevelopment and the psychophysiology of trauma II: Clinical Work Along the Alarm-Fear-Terror Continuum. APSAC Advisor 1993; 6:1-20.*
12. *Carlson EA: A prospective longitudinal study of attachment disorganization/disorientation. Child Dev 1998; 69:1107-28.*
13. *Cassidy J & Shaver PR: Handbook of Attachment. Theory, Research and Clinical Applications. The Guilford Press, New York, 1999.*
14. *Cicchetti D, Rogosch FA & Toth SL: Fostering secure attachment in infants in maltreating families through preventive interventions. Dev Psychopathol 2006; 18:623-49.*
15. *Croatian Ministry of the Interior – Cabinet of the Minister – Department of Analytics and Development, 2008; www.mup.hr*
16. *Daneš V & Horvat V: Psychological Consequences of War Stress in the Developing Population in Bosnia and Herzegovina. Psychiatr Danub 2005; 17:225-229.*
17. *De Wolff MS & Van Ijzendoorn MH: Sensitivity and attachment. Child Dev 1997; 68:571-91.*
18. *de Zulueta CF: Mass violence and mental health: attachment and trauma. Int Rev Psychiatry 2007; 19:221-33.*
19. *Dillenburger K, Fargas M, Kelly G & Akhonzada R: Traumatic bereavement and coping: Implications for a contextual approach. In Woodthorpe K (ed.): Making sense of dying and death. Oxford, UK: Inter-Disciplinary Press, 2007.*
20. *Dybdahl R: Children and mothers in war: An outcome study of a psychosocial intervention program. Child Dev 2001; 72:1214–30.*
21. *Elbedour S, Bensel RT & Bastien D: Ecological integrated model of children of war: Individual and social psychology. Child Abuse Negl 1993; 17:805-19.*
22. *Elizur E & Kaffman M: Children's bereavement reactions following death of the father. J Am Acad Child Adolesc Psychiatry 1982; 21:474-80.*
23. *Elizur E & Kaffman M: Factors influencing the severity of childhood bereavement reactions. Am J Othopsychiatry 1983; 53: 668-76.*
24. *Garbarino J & Kostelny K: What do we need to know to understand children in war and community violence. In Apfel R & Simon B (eds.): Minefields in their hearts, the mental health of children in war and community violence, 33-51. London: University Press, 1996.*
25. *Ghobarah H, Huth P & Russett B: The post-war effects of civil conflict. Soci Sci Med 2004; 59:869-84.*
26. *Goldberg S, Benoit D, Blokland K & Madigan S: Atypical maternal behavior, maternal representations, and infant disorganized attachment. Dev Psychopathol 2003; 15:239-57.*
27. *Green B, Korol M, Grace M, Vary M, Leonard A, Gleser G et al.: Children and disaster: Age, gender and parental effects on PTSD symptoms. J Am Acad Child Adolesc Psychiatry 1991; 30:945-51.*
28. *Greenberg MT, Spletz M & DeKlyen M: The role of attachment in the early development of disruptive behavior problems. Dev Psychopathol 1993; 5:191-214.*
29. *Gribble PA, Cowen EL, Wyman PA, Work WC, Wannon M & Raoof A: Parent and child views of parent-child relationship qualities and resilient outcomes among urban children. J Child Psychol Psychiatry 1993; 34:507-19.*
30. *Gudas LJ: Concepts of death and loss in childhood and adolescence: A developmental perspective. In Saylor SF (ed.): Children and disasters, 67-84. New York: Plenum Press, 1993.*
31. *Hadi FA & Llabre MM: The Gulf Crisis Experience of Kuwaiti Children: Psychological and Cognitive Factors. J Trauma Stress 1998; 11:45-56.*
32. *Hasanović M, Sinanović O, Selimbašić Z, Pajević I & Avdibegović E: Psychological Disturbances of War-traumatized Children from Different Foster and Family Settings in Bosnia and Herzegovina. Croat Med J 2006; 47:85-94.*
33. *Jaffee SR, Moffitt TE, Caspi A & Taylor A: Life With (or Without) Father: The Benefits of Living with Two Biological Parents Depend on the Father's Antisocial Behavior. Child Dev 2003; 74:109-26.*
34. *Kessler RC, Sonnega A, Bromet E, Hughes M & Nelson CB: Posttraumatic stress disorder in the National Comorbidity Survey. Arch Gen Psychiatry 1995; 52:1048-60.*
35. *Klass D, Silverman PR & Nickman SL: Continuing bonds: New understandings of grief. Washington, DC: Taylor and Francis, 1996.*
36. *Kleber RJ: Epilogue: towards a broader perspective of traumatic stress. In Kleber RJ, Figley CR & Gersons BPR (eds.): Beyond trauma: Cultural and societal dimensions. New York: Plenum, 1995.*
37. *Kozarić-Kovačić D, Kocijan Hercigonja D & Grubišić-Ilić M: Posttraumatic Stress Disorder and Depression in Soldiers with Combat Experience. Croat Med J 2001; 42: 165-70.*
38. *Kučukalić A & Bravo-Mehmedbašić A: Impact of War Traumatic Events on the Socio-Demographic Characteristics of the Civilian Population in Bosnia and Herzegovina. Psychiatr Danub 2004; 16:49-54.*
39. *Madigan S, Moran G & Peclerson DR: Unresolved states of mind, disorganized attachment relationships, and disrupted interactions of adolescent mothers and their infants. Dev Psychol 2006; 42:293-304.*
40. *Magwaza AS, Killian BJ, Petersen I & Pillay Y: The effects of chronic violence on preschool children living in South African townships. Special section. Children and war. Child Abuse Negl 1993; 17:795-803.*
41. *Milas M & Jelovac N: Croatian Soldiers with PTSD, And Their Relationship With Alcohol And Psychiatric Commorbidity. Psychiatr Danub 1999; 11:69-80.*
42. *Murray C, King G, Lopez A, Tomijina N & Krug E: Armed conflict as a public health problem. Brit Med J 2002; 324:346-9.*
43. *Novaco RW & Chemtob CM: Anger and Combat-Related Posttraumatic Stress Disorder. J Trauma Stress 2002; 15:123-32.*

44. *Program for the improvement of the quality of life in the families of deceased Croatian defenders, Croatian war military invalids, and Croatian defenders suffering from PTSD. Croatian Ministry of Family, Veteran's Affairs and Intergenerational Solidarity, 2008; www.mobms.hr*
45. *Punamäki RL, Quota S & El Sarraj E: Resiliency factors predicting psychological adjustment after political violence among Palestinian children. Int J Behav Dev 2001; 25:256-67.*
46. *Robertson Cl & Duckett L: Mothering during War and Postwar in Bosnia. J Fam Nurs 2007; 13:461-83.*
47. *Schwarzwald J, Weisenberg M, Waysman M, Solomon Z & Klingman A: Stress reaction of school-age children to the bombardment by SCUD missiles. J Abnorm Psychol 1994; 102:404-10.*
48. *Shaw JA: Children exposed to war/Terrorism. Clin Child Fam Psychol Rev 2003; 6:237-46.*
49. *Singer DG & Singer JL: The House of Make-Believe: Children's Play and the Developing Imagination. Harvard University Press, Cambridge, MA, 1990.*
50. *Single-Rushton W & McLanahan S: Father Absence and Child Well-being: A Critical Review. Center for Research on Child Wellbeing, Princeton, 2002.*
51. *Smith P, Perrin A, Yule W & Rabe-Hesketh S: War exposure and maternal reactions in the psychological adjustment of children from Bosnia-Herzegovina. J Child Psychol Psychiatry 2001; 42:395-404.*
52. *Spielberger ChD: Priručnik za Upitnik ljutnje kao stanja i osobine ličnosti – 2 (STAXI-2). Naklada Slap, Zagreb, 2001.*
53. *Stein BD, Comer W & Kelleher GK: Prospective study of displaced children's symptoms in wartime Bosnia. Soc Psychiatry Psychiatr Epidemiol 1999; 34:464-69.*
54. *Van Ijzendoorn MH: Associations between adult attachment representations and parent-child attachment, parental responsiveness and clinical status: A meta-analysis on the predictive validity of the Adult Attachment Interview. Psychol Bull 1995; 117:387-403.*
55. *Vukušić H, Wilson JP, Gregurek R, Komar Z, Pavić L & Gogić B: Secondary Victimization of War Veterans with Post-Traumatic Stress Disorder: the Croatian Experience. Psychiatr Danub 2003; 15:13-23.*
56. *Weiss RS: Loneliness: The experience of social and emotional isolation. MM Press, Cambridge, 1973.*
57. *Young RM & Balaban E: Aggression, Biology and Context. Dejá vù All Over Again? In Mattson M (ed.): Neurobiology of Aggression: Understanding and Preventing Violence. New Jersey: Humana Press Inc, 2003.*
58. *Zalihić A, Škobić H & Pejanović-Škobić N: Case-Control Study: Posttraumatic Stress Disorder and Habits of War Veterans. Psychiatr Danub 2008; 20:75-79.*

*Correspondence:*
*Mladen Lončar, MD, PhD*
*University Hospital Centre Zagreb, Department of Psychiatry,*
*National Centre for Psychotrauma*
*Kišpatićeva 12, 10000 Zagreb, Croatia*
*E-mail: mladen.loncar1@zg.t-com.hr*