

Behavior of citizens during alerts in war in Croatia (1991-1992), with the special reference to the role of civil defense

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Preface

In spite of the permanent activities of civil defense due to the war activities and poor financial situation in the Republic of Croatia, at the beginning of the war a group of professionals received the financial resources for the scientific research of the civil defence efficiency during war operations.

As it is well known, police forces in United States invest increasing financial resources in establishing good relations with the citizens, while at the same time investments in technical equipment decrease. Similar trends could be expected for the civil defense system as well.

1. Introduction

Knowledge of the behavior of citizens during alerts is of great importance for the professionals in many institutions. However, this knowledge is of utmost importance for the civil defense professionals, being responsible for the protection of the citizens. For that reason, data about the behavior and experiences of 419 citizens of Zagreb were collected in the period from 7. 11. to 7. 12. 1991, a period following some 40 announced alerts in Zagreb. That was the period of the most severe military attacks. Basic findings of this research are published in one study (Bosnar et al., 1992a), and several scientific papers (Bosnar et al, 1992b,c; 1993a,b; Marušić et al., 1994; Mejovšek et al., 1994; Prot et al., 1993; Zarevski et al., 1992).

The analysis of scientific and practical value of this research revealed the need for the similar research carried out in cities that were more exposed to the severe war destruction. Namely, we can expect that the behavior of citizens and civil defense professionals in these areas could differ in some aspects from the one observed in Zagreb area. As a target city for this research we finally selected Sisak, a town with some 45 000 inhabitants that had been exposed to the heavy artillery fire for several months. However, there are many cities that would be more appropriate target for research regarding severity of destruction, but the safety of field investigators was a dominant reason for choosing Sisak, which had a cease fire during the period of data collection. The results of this investigation are presented in extenso in the study of Bosnar et al. (1992c).

2. Method

2.1. Instrument

The extensive questionnaire used in these studies included:

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- the amount of information citizens have about the procedures required during alerts
- procedures prior to taking shelter
- reasons for taking shelter
- attitudes towards sheltering
- procedures related to taking shelter
- characteristics of shelters
- behavior during alerts
- experiences during alerts

2.2. Sample

We formed a quota sample as the most practical strategy for selecting the sample, since we did not have all the relevant data for the selection of a representative sample at the time of investigation.

Bearing in mind the hypothesis that residential status can affect the behavior of citizens during alerts, we took into the account the type of buildings dominating certain residential areas. Therefore we tried to assure the equal participation of subjects residing in older types of buildings and the ones residing in newer buildings (the ones whose construction included measures against earthquakes etc.). The collection of data in Zagreb was therefore carried in two residential areas with predominantly newer types of buildings and in two residential areas with predominantly older types of buildings. The residential areas were chosen with respect to the location of military barracks as well. One old and one new residential area were therefore treated as the zones in danger, having military barracks with JNA troops in their vicinity. The rest of the city areas were treated as less dangerous zones.

The data collection in Sisak was carried out in two residential areas in the old part of town, and in two residential areas in the new part of town. The following criterion for the formation of the samples was the equal representation of men and women. As for the criterion of age, the following principle was used for the formation of three age groups:

- a/ young subjects (from 16 to 25 years) - 25%
- b/ middle aged subjects (from 26 to 50 years) - 50%
- c/ old subjects (over 51 years) - 25%.

The reason for the overrepresentation of middle aged subjects is our intention to get the best insight in the characteristics of those persons who have to care for others - children and perhaps older subjects as well.

The sample in Zagreb finally included 419 subjects, while the one in Sisak included 207 subjects.

2.3 Data collection

Data collection in both cities was carried out in similar fashion, but in different periods. Subjects in Zagreb were tested in the period from 7. 11. to 7. 12. 1991., while the ones in Sisak were tested in the period from 16. 5. to 21. 5. 1992. Field researchers had to collect data from all the residents over 16 at a certain, randomly chosen address within the chosen residential area. We tried to assure the equal representation of all the subgroups from a certain residential area in the sample.

It is important to point out that the vast majority of citizens agreed to participate in the study, even when they were informed about the length of the testing. An exceptionally high percentage of subjects willing to participate in this sort of investigation reveals that citizens were highly motivated to cooperate with professionals on the development of more efficient organization of life in war circumstances.

3. Results

3.1. The comparison of citizens of Zagreb and Sisak during alerts

For the purposes of comparison of behavior of the citizens in two cities, the most appropriate strategy was to include in Zagreb sample only the data collected in two less dangerous zones. The data analysis was therefore carried on 211 citizens of Zagreb and 207 citizens of Sisak. We have to mention that these two samples were highly comparable regarding all the relevant characteristics except the educational level, being higher in Zagreb sample. This was to be expected, since Zagreb is a large urban area and a university center as well. A short overview of the most important findings of this study will be presented in the next sections.

1/ The level of information about the procedures in alert situations

Results clearly show that citizens of Sisak possess much more information about the procedures in the situation of alerts. Higher percents of the citizens of Sisak read the civil defense leaflet (58% compared to 44%), and they are more familiar with the alert signals (75% compared to 55%). Compared to the citizens of Zagreb, higher percentage of the subjects in Sisak used following sources of information: posters and information boards (78% compared to 57%), brochures (45% compared to 29%), and information by word of mouth (58% compared to 47%). Without further investigation it is not possible to determine whether higher level of information of the citizens in Sisak should be attributed to the longevity and severity of destruction, "forcing" citizens to collect more information, to better flow of the information in smaller communities or the interaction of the two. Citizens of Sisak more often used radio and TV as the sources of information about the announcement of alerts (92% compared to 84%).

2/ Procedures before sheltering

Statistically significant difference in the procedures preceding sheltering was found for 7 out of the 13 procedures listed. When compared with the Zagreb sample, much higher percent of the citizens of Sisak at least occasionally closes the water valve (63% compared to 48%), but lower percent of them disconnects the electricity (52% compared to 58%). Much more citizens of Zagreb take the medicine in shelters (83% compared to 66%). Citizens of Sisak are much better equipped with the personal safety set – two thirds of the citizens of Sisak possess them, compared to only one third in Zagreb. However, only one third of the citizens in both cities takes this set in shelter. Citizens in Sisak more regularly take the radio in shelter (85% compared to 72%). Conversation with them revealed that they mostly listened to their local radio station, Radio Sisak. Experiences of the civil defense staff in Sisak area point to the important role of local radio stations in alerting and informing the citizens. This fact should be taken into account in planning the tasks of local radio stations in the civil defense system.

3/ Reasons for taking shelter

Citizens of Sisak and Zagreb significantly differ in the frequency of choosing three out of seven listed reasons for taking shelter. Citizens of Sisak less frequently choose the recommendation of official institutions as their reason for taking shelter (35% compared to 49%), more frequently rely on their own assessment of danger (86% compared to 72%), and more frequently take shelter because of fear (56% compared to 43%). Since Sisak was exposed to daily attacks over the longer period of time, it was reasonable to expect that civilians in Sisak took shelter mainly out of fear and according to their own assessment of danger. Contrary to Sisak, chosen parts of Zagreb were not exposed to destruction, so their citizens took shelter mainly out of precaution and more frequently followed the recommendations of official institutions.

4/ Attitudes toward sheltering

Citizens of Sisak and Zagreb significantly differ according to the level of acceptance of four out of eight listed statements. Sisak citizens more frequently endorse the statement that shelter is about equally unsafe as any other place they can go. Taking into account really severe destruction they had been exposed to over the long period of time, citizens of Sisak had the opportunity to estimate the safety of their shelters in the situations of real danger. Considering the true danger they experienced and the fact that lower percentages of the citizens of Sisak had the opportunity to use appropriately built shelter (16% compared to 27%), it doesn't surprise that they judge their shelter as relatively unsafe more frequently than citizens of Zagreb. Moreover, Sisak citizens less frequently than ones in Zagreb endorse the statements that there was little chance in a large city that something would happen to them, and that they are not in the vicinity of military objects, so the fear is unfounded. Again, these data were to be expected, as they reflect the accurate perception of reality due to the exposure to real destruction in Sisak, and the town is much smaller than Zagreb. Real danger and experience with the sudden enemy attacks are reflected in fact that Sisak citizens much more frequently hold that it was smart to take shelter even when the alert was not announced.

5/ Taking shelter during alerts

Data on taking shelter during alerts clearly reflect true differences in the level of exposure to the war threats. Although almost the same percentage of citizens in Sisak and Zagreb equally frequently took shelter at the beginning of the alerts period and later, the expected differences emerge in groups of those who didn't take shelter equally frequently during alerts period. Among the citizens of Zagreb there are many more of those who took shelters more frequently at the beginning of alerts period, while in Sisak there is a larger number of those who took shelter more frequently after the alerts became rather frequent. This difference could be attributed to the different war circumstances in both cities. In Zagreb area most of the alerts were not accompanied by real destruction, so with the increasing frequency of alerts a number of those who decided to take shelter due to perceived danger decreased. On the other hand, intensive destruction in Sisak encouraged to take shelter even the ones who initially underestimated the real danger.

Citizens of Sisak and Zagreb also differ with respect to the type of shelter. Citizens of Zagreb more frequently take shelter in adequate shelters (54% sometimes or regularly, compared to 44%), while citizens of Sisak more often take shelter in building basements (84% sometimes or regularly, compared to 60%). Furthermore, citizens of Sisak more frequently took shelter in their own shelters when the alert was announced while they were on the streets (30% compared to 17%). This finding supports the hypothesis that they tried to stay close to their homes during the period of frequent attacks. The additional reason for this finding is the size of the city – Sisak is relatively small town, so the distances from people's home to the place of work or school are much smaller.

6/ Behavior in shelters during alarms

Citizens of two cities significantly differ in only 4 out of 17 proposed behaviors in shelter. Citizens of Sisak more frequently listen to the radio (radio regularly listens 55% of subjects in Sisak, compared to the 41% citizens of Zagreb), which again emphasizes already discussed importance of this mass medium for timely informing the citizens, particularly those in areas directly exposed to destruction. Citizens of Sisak more often spend time in shelters playing cards (48% at least sometimes, compared to 35%) and social games (45% at least sometimes, compared to 37%), which is probably due to the fact that they spent more time in shelters, so they used social games to structure their time and reduce tension. Furthermore, larger number of the citizens of Sisak try to drive away misfortune (37% compared to 19%). Again, this can be attributed to the greater danger they were exposed to.

Despite very strong enemy attacks their town suffered, citizens of Sisak more often leave their shelter, so 83% of them at least sometimes left shelter during the alerts (compared to 72% of the subjects in Zagreb). At the same time, much less percentage of the citizens of Sisak stated that they

didn't want to leave shelter. There are several reasons that made citizens of Sisak leave the shelter more frequently. More often than subjects in Zagreb they go to their apartments to get things they need (66% compared to 46%), to check their homes (52% compared to 24%), to make a phone call (17% compared to 6%), or to use the toilet (62% compared to 27%).

7/ Experiences during the alarms

With respect to the possible sources of distress while being in shelter, statistically significant differences are found for 3 out of 23 listed sources of distress. Greater threat (real and perceived) of the activities of the fifth column caused more distrust toward strangers in citizens of Sisak, so more of them stated that they feel uncomfortable in the presence of strangers. Citizens of two cities also differ in the level of distress they experience due to the irregular nutrition. Middle or high level of distress thus reports 50% of the citizens of Sisak compared to 33% of the citizens of Zagreb. This fact is due to the difference in frequency and longevity of the stay in shelters. More citizens of Sisak also estimate that they are mildly or severely distressed by the weak illumination in shelters (42% compared to 34%).

Data reveal good social climate in shelters in both cities. As high as 95% of the citizens of Zagreb and 90% of the citizens of Sisak judge the relations in shelters as very cordial or mostly good. However, higher percentage of the citizens of Sisak estimate these relations as not good or even distressful (10% compared to 5%), which can be again attributed to the fact that they spent much more time in shelters. It is to be expected that more time spent in shelters leads to the more frequent disputes and misunderstandings. With respect to the proposed emotional states, citizens of two cities differ only in their experience of fear. Considering their experiences, citizens of Sisak more frequently report being frightened – 66% of them are at least a little frightened, compared to 54% citizens of Zagreb.

8/ Conclusion

On the basis of reported data, we can conclude that obtained differences in the level of information, experiences and behavior of the citizens of Zagreb and Sisak are mostly in accordance with our expectations, and clearly reflect true differences between two cities in the exposure to the war destruction. With the respect to the severity and longevity of the war destruction of Sisak compared to Zagreb, the fact that even larger differences could be expected reveals that citizens of both cities had relative similar reactions, relatively independent of real threat.

3.2. SURVEY OF THE REMAINING RESULTS

Our research also paid attention to some specific psychological problems of taking shelter. Researchers thus analyzed the sources of distress in shelter on Zagreb data (Zarevski et al., 1992). Namely, if a person experiences his/her stay in shelter as distress, there is a greater possibility that he/she would not take shelter, thus taking unnecessary risks, or that he/she would display unadaptive reactions, thus making the stay in shelter even more unpleasant to him/herself and to others. It is therefore important to investigate possible sources of dissatisfaction with the stay in shelter, so that we can remove or at least alleviate them.

Previous research shows that stay in restricted environment causes a number of changes in physiological reactions as well as in subjective experiencing (Zuckerman, 1979; Suedfeld, 1980). The aim of our study was to establish the conditions in shelter that are sources of distress for persons of various age and sex. We obtained statistically significant differences between subjects of various age and/or sex on 12 out of 23 listed sources of distress.

First of them relates to overcrowded shelters, which is mostly distressful for younger subjects, followed by older ones, while middle aged subjects are the least bothered by overcrowding. Obviously, young subjects have the strongest need for isolation and privacy for engaging in their own

activities. Unlike middle aged subjects, they don't have to take care about other people. Subjects of various ages have different perception of the panicking of others. Young subjects are the most disturbed by the panicking of others, probably because subjects of this age are the least prone to this type of reaction. Oldest subjects are the least distressed by panic reactions of others, which probably reflects the fact that they are mostly prone to this type of reacting.

In line with expectations, little children's cry is the most distressful for the oldest subjects, and the least distressful for the middle aged group, which includes parents of those children. The inability to undertake any useful action bothers oldest subjects less than other groups, but it is mostly a source of distress for middle aged subjects, probably because they take care for others and have a need to actively act to protect themselves and their families.

Sex differences show that bad air, the possibility of infection and inability to maintain personal hygiene are much more a source of distress for women. Women are more affected by difficulties to regularly use the toilet and bad smells. Moreover, they are more distressed by the lack of understanding of the seriousness of the situation and by the lack of cultural manners in others.

Subjects of various age and sex were differently affected by noise. Women are more disturbed by noise than men. As we can expect, noise affects oldest subjects the most, and the least middle aged subjects, which can again be attributed to their care about others and the ability to realistically perceive situation in shelters.

List of 23 variables was further factor analyzed, and three dimensions were obtained. First of them can be defined as general indicator of distress caused by physical features and conditions in shelters, second dimension describes distress caused by insufficient and untimely informing, while third dimension is defined as distress caused by social environment. Results revealed that subjects of various age and sex differ according to these dimensions. Women experience more distress due to the inadequate physical environment. Inadequate informing is the most intensive source of distress in shelters, and it affects middle aged subjects the most, probably due to the fact that middle aged subjects have more responsibility and care for others and want to actively protect them, so timely informing plays more important role for this age group than for others. Older subjects are the least affected by inadequate informing, probably due to the fact that they have less possibility and interest for action because of their age. Third dimension, distress caused by social environment, represents equally intense source of distress for both sexes and all age groups.

This analysis was done only on data of Zagreb sample, but we can hypothesize that basic findings could be generalized to the citizens of other larger cities in Croatia as well.

We also investigated some cognitive aspects of taking shelter (Prot et al., 1993). 44 alarms were announced in Zagreb prior to our investigation, and each one of them was a separate event with the unknown probability of the negative outcome. According to the frequency of taking shelter in various periods of alarms in Zagreb, we can divide our sample in five groups:

- - those who took shelter equally frequently during the period of alarms;
- - those who did not take shelter at all;
- - those who took shelter occasionally during that period;
- - those who took shelter more frequently at the beginning of the alarms period;
- - those who took shelter more frequently after the alarms became more regular.

First three groups didn't change their behavior during the observed period, while the other two did. Behavior of those two groups can be attributed to the errors in subjective judgement of the probability of destruction, since they perceived alarms as a line of mutually dependent events. We can hypothesize that citizens who took shelter more frequently at the beginning of the period of alarms changed their behavior due to the fact that Zagreb was not affected by severe destruction at that period, so their estimation of potential risks was corrected towards lower values.

We can also hypothesize that subjects who more frequently took shelter after the alarms became more regular estimated that probability of destruction increases with time, which is an example of “gambler’s misconception”. To explain the differences in behavior of those five groups, we examined differences between five groups of subjects according to the following characteristics:

- - demographic variables – age, sex, marital status and number of children;
- - cognitive variables – education and specific knowledge in the area of civil defense;
- - personality traits;
- - ecological variables – experience of physical, social and information environment in shelter.

Results show that five groups differ in their tolerance of physical environment, family status and age. At the beginning of the alarms period younger subjects, who are more distressed by sheltering, took shelter more frequently. They are most similar to the group of those who took shelter equally infrequently during the alarms period. Later, after the alarms became more frequent, older subjects who are more distressed by sheltering took shelter more often than at the beginning of the alarms period. They are similar to the subjects who didn’t take shelter at all. Dominant group of subjects, those who took shelter equally frequently during the period of alerts, are those who are more tolerant of the physical conditions in shelters and, unlike other groups, have the family responsibility.

Interest of the researchers was also focused on alerts as the sources of intensive stress (Marušić at al., 1994). However, it is to be expected that all subjects would not react with equally intensive stress reactions, where motherhood should play an important role. Mothers probably react with different type and intensity of stress reactions, with respect to their need to protect and care about the children. Therefore it is important to know these reactions in more detail, in order to predict and eventually prevent harmful consequences war has on psychological development of children. Furthermore, we can hypothesize that period of rather frequent alarms elicits sensibilization on stressors, i.e. stress reactions will be elicited by those environmental stimuli that are not perceived as stressful under normal conditions.

In this research, we used model of psychological stress by R.S. Lazarus (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984;1987) as a theoretical framework. On the basis of this model, we can expect that mothers would perceive alerts as more dangerous situations than women without children would. The situations of alerts are a threat to the safety of their children, which is exceptionally important in their hierarchy of values. It can therefore be expected that group of mothers would display more intensive stress reactions than women who don't have children. A goal was therefore to examine whether hypothesized differences in reactions of the two groups of women truly exist. Moreover, it is important to establish whether stressful reactions generalize, i.e. whether possible differences in stressful reactions between the two groups remain on signals that remind on alert signals.

Results showed that mothers and women who don't have children significantly differ in their reactions in the alert situations. As it was expected, group of mothers shows more intensive stress reactions than group of women without children. The need for protection of their children is obviously very important for mothers, so they probably perceive the alerts as more threatening. Anxious and somatic symptoms are the most frequent type of reactions, because they don't interfere with the active protection of the child and are less evident in behavior. Dominantly aggressive reactions or reactions of cognitive dissociation would interfere with the assessment of the situation and the choice and application of the most appropriate coping strategy. Moreover, mothers controlled their reactions of panic, dissociation or aggression, knowing that they would serve as models to their children, who would then probably display similar reactions.

Analysis of the reactions to the sound similar to alarms also reveals significant differences between two groups. In this situation mothers also reacted with more intensive stress than subjects having no children, mostly with anxious-conversive type, but the difference between two groups is smaller than the one in the situation of real alerts. These results confirm that mothers were more sensibilised to stressors in the period of frequent alerts.

Conclusion

One of the most important conclusions of our study is that citizens in crisis situations only partly follow the instructions of civil defense. The more threatening the situation is, citizens are more ready to cooperate with civil defense. Furthermore, small radio stations are especially valuable source of information to the citizens in danger.

Since it is not possible to incorporate in civil defense plans all the specific needs in various crisis situations, the organization of civil defense must be very flexible. The example of restructuring of the civil defense in Croatia proves it is possible, because civil defense system in Croatia being the part of ex-Yugoslavia was not adequately organized. Mostly due to the cooperation of citizens, literally under cannonfire, during war in Croatia a successful protection of citizens was organized. However, in peace time activities of the civil defense aimed at keeping the good cooperation with citizens are less intense. It is necessary, therefore, to develop permanent activities of civil defense in order to preserve the relations established between professional civil defense units and citizens.

At the end, results of this research emphasize the importance of scientific research in structuring the activities of civil defense. Scientific research should be used as a basis for planning, preparation and evaluation of the activities aimed at protection of citizens in crisis situations.