

Examining the Effects of Natural Disasters on Children and Adolescents: From Action to Research and Interventions

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Zusammenfassung

Psychologische Effekte von Naturkatastrophen für Kinder und Jugendliche: Von der Aktion zu Forschung und Intervention

Polen erlebte 1997 eine Flutkatastrophe, die viele Todesopfer forderte, Orte zerstörte und eindrücklich das Fehlen von koordinierten Hilfestrukturen bei Großschadensereignissen verdeutlichte. Als erfolgreichstes Angebot für die Betroffenen zeigten sich damals gemeindeorientierte psychosoziale Versorgungskonzepte. Die Gemeindepsychologie hat seit dem eine enorme Entwicklung in Praxis und Forschung erlebt. Im vorliegenden Artikel stellt Anna Bokszczanin zwei Forschungsprojekte vor, welche die psychischen und sozialen Folgen von Naturkatastrophen für Kinder und Jugendliche untersuchen. Aus einer psychologischen Perspektive sind mögliche dramatische Folgen eines Unglücks – ob Naturkatastrophe oder Krieg – das Erleben von Stress, Trauma und Schock, sowohl auf individueller als auch sozialer Ebene. Zu den Betroffenen gehören auch Kinder und Jugendliche. Die Untersuchung von Stressreaktionen, die Identifizierung von Risikogruppen und von Ressourcen kann bei der Entwicklung und Organisation von Unterstützungsangeboten helfen. Ziel einer organisierten psychosozialen Versorgung im Katastrophenfall z.B. in Schulen ist die Vermeidung der von psychischen Störungen. Die sogenannte Jahrhundertflut zeigte die schlechte und unvorbereitete Organisation von Hilfen für die Opfer im Falle eines Großschadensereignisses und führte in der Folge zum verstärkten Aufbau von Versorgungsstrukturen auf Gemeindeebene. Damit einher ging ein großes Interesse an der Forschung zu psychischen Reaktionen und Bewältigungsstrategien von Flutopfern. Die Autorin beschäftigt sich in ihren Forschungsarbeiten insbesondere mit den Folgen für Kinder und Jugendliche. Theoretisch folgt sie dabei dem Vorhersagemodell von Posttraumatischen Belastungssymptomen bei Kindern von Vernberg et al (1996). Im Artikel wird zunächst ein Langzeit Projekt vorgestellt, welches soziale und psychische Belastungen der Flut für Kinder und Jugendliche untersucht hat. In der Studie wurden 811 Schüler zwischen 11 und 21 Jahren u.a. nach Symptomen von PTSD, Depression, Einsamkeit, nach Zufriedenheit, Coping Strategien, sozialer Unterstützung und ihrer familiären Situation befragt. Anna Bokszczanin resümiert, dass der Einfluss von erlernten Problemlösestrategien sowie die soziale Unterstützung relevant sind bei der Bewältigung traumatischer Erlebnisse. In einem qualitativen Forschungsprojekt wurden Schüler gebeten ihre Erlebnisse nach der Flutkatastrophe zu beschreiben. Ihre anonymen Essays wurden mittels Narrationanalyse ausgewertet. Die Ergebnisse beider Forschungsprojekte sollen helfen, Versorgungsstrukturen im Falle von Großschadensereignissen zu entwickeln. Hilfen für Kinder und Jugendliche sind von besonderer Bedeutung, da diese noch keine ausreichenden Bewältigungsmechanismen besitzen und in besonderem Maße auf familiäre und soziale Unterstützung angewiesen sind. Gemeindepsychologische Konzepte, wie Salutogenese, Resilienz und Ressourcenorientierung sind dabei handlungsleitend.

Schlüsselwörter: Grossschadensereignisse, Gemeindepsychologie in Polen, psychische und soziale Reaktionen von Kindern und Jugendlichen auf Naturkatastrophen

Summary

This paper is a short presentation of empirical findings and their practical implications concerning children and adolescents who were victims of natural disasters. This research program has begun with the Millennium Flood of 1997, which vividly exposed the urgency to organize formal structures responsible for bringing help to the victims of mass disasters in Poland. The paper describes a completed long-term project that examined both negative social and psychological consequences of the flood for children and adolescents. Main theoretical assumptions, chief empirical results and recommendations for psychological intervention are presented. Featured as well is a new research project currently being conducted. This project focuses on the issues of post-traumatic growth in adolescents and their involvement in the exchange of post-disaster social support.

Key words: Community Psychology in Poland, natural disasters, psychological and social reactions of young people to natural disaster

The nature of disasters: the need for action and research

Natural disasters, such as floods, earthquakes, droughts, and human-made disasters like wars, terrorist attacks or chemical contamination are part of our everyday life, even though they do not occur every day. We hear about them in the media and from people who experienced them. Devastation and destruction, the consequences of every disaster, affect the entire ecology of human life in its economic, natural, social and health domains. Professionals from various fields, such as medicine, welfare, sociology, politics and psychology, are interested in the consequences of events in which great numbers of people have suffered. The diverse consequences of disaster are not unrelated; on the contrary, they interact, alternate and overlap, shaping the image of the disaster: An event of a complex and multilevel nature (Baum, 1987). About 200 million people have suffered from natural disasters in the recent decade, damage being estimated at 63 million dollars per year¹. These statistics, however, are believed to be understated, because they only show the number of people who have suffered physical injuries, whereas the numbers of victims who sustained material and psychological losses, i.e. homelessness and/or various psychological problems, are not always revealed, and statistics about victims forced to live for years in a devastated environment are typically not given. According to the authors of the report quoted above, the reason for the misfortune and losses brought about by "nature's forces" is not a lack of methods to prevent them, but the carelessness of governments and local administration manifested in their lack of preventive action.

From a psychological perspective, the most significant negative consequences of disaster are the experiences of stress, trauma and shock, both at the individual and the group levels. A considerable part of disaster victims are children and adolescents who experience fear and horror, and suffer because of their losses, just like adults. To examine the reactions of young people who were victims or witnesses of traumatic events such as a natural catastrophe creates an opportunity to verify different theoretical hypotheses on stress reaction, dealing with difficulties or the development of disorders. Researching predictors of stress reaction may allow for the identification of those people at the highest risk as well as those who can cope best with heavy distress symptoms. Such knowledge is also vital for organizing and providing psychological help for future victims.

The primary aim of organized intervention at the community level (e.g. schools) is a decrease in the prevalence of numerous disorders. There is empirical evidence that a reduction of post-disaster symptoms or risk factors will also reduce the prevalence of disorders (Huppert, 2004).

The Millennium Flood: The inception of research on disaster victims in Poland

The flood of July 1997, also known as the Millennium Flood, was the key event that caused the scientific community to be interested in research on the effects of disaster in Poland and exposed the necessity to work on the organization of formal structures providing help for victims of mass trauma. The disastrous flood came as a huge surprise for everyone, terrifying because of its unprecedented dimension and consequences. The entire country could watch ever larger regions of southwestern Poland being flooded – towns, villages, fields, homes and schools. The circumstances were quite similar to a war threat as many thousands of people experienced fights, fear, anticipation and terror and became separated from their families, deprived of their homes, and very often lost all their possessions. The flood brought about an enormous amount of damage to the entire country. The Public Opinion Research Centre (CBOS) states in 1997 that 46,000 houses were flooded and 160,000 people were evacuated.

A week after the city of Opole had been flooded, in an atmosphere dominated by fear, chaos, and braving the elements, a volunteer group of psychologists and education professionals from the flooded areas was formed. They decided to offer their help to the flood victims. It was obvious to everyone that the people who had been affected by the flood needed a lot of help, not only on the psychological level. What started as a spontaneous effort became more formalized with the organization of help centres for flood victims managed by the administration of the Polish Psychological Society. Until the end of March 1998, several groups of therapists, education professionals, physicians, lawyers and building experts went to talk directly to the victims, offering counselling and family therapy. Therapy for students and teachers was provided in a few schools in Opolskie province. This kind of help was haphazard, temporary and quite insufficient considering the actual extent of needs.

The experience of the flood of 1997 led to the introduction of many changes in the organization of our local environment. These changes concerned both our way of thinking and the way we provide help to the victims of crises. There was a clear *shift from "office based" psychology to community psychology*. Action "in the field", with professionals meeting the victims instead of waiting for them to come and ask for help, turned out to be an effective method, which was verified by further work with the flood victims. We learned that when there are large groups of victims, the helpers' role cannot be limited to the traditional consultation office, assuming that those in need will seek help on their own. People who intend to help disaster victims, including psychologists, have to leave their offices and meet those in need halfway. The presence of helpers is important both in administrative institutions where the victims come to deal with formalities and ask for material help, and in the local communities. People who lost their homes and possessions do not have the time, strength, or energy to visit therapists.

It can be assumed that the Millennium Flood and the direct involvement of many practitioners and academic psychologists in providing help for its victims led to the acknowledgement of the need for the development of community psychology in Poland (Bokszczanin, Kaniasty, Szarzynska, 2007).

Simultaneously, the need to carry out scholarly research became obvious. Research projects were taken up at the Institute of Psychology at the Opole University originally with the aim of cataloguing the records of psychological reactions of people from the flooded areas, but were later turned into research programs lasting several years. Thus, the disastrous flood of 1997 became a scholarly challenge, requiring the researchers to confront new demands and theoretical issues. Some of these difficulties were solved with the establishment of academic relationships with American community psychologists. These co-operations resulted in several important research projects, among others a longitudinal research project concerning post-disaster social support processes (Kaniasty, 2003). Other Polish scholars also studied the reactions of flood victims and the

occurrence of psychological help being offered to all kinds of trauma victims (e.g. Strelau, 2005, Strelau & Zawadzki, 2005).

As a resident of the area affected by the flood and as a researcher and teacher at the Institute of Psychology at Opole University, I was involved in the activities connected with the organization of help for flood victims. Because I am specialized in child and adolescent social and developmental psychology, my disaster-related research on children and adolescents also resulted from my own didactic and scholarly interests.

The negative social and psychological consequences of the flood of 1997 for children and adolescents: The research program's assumptions and its main results

The following research questions were formulated:

1. What were the rates of PTSD symptoms, depression, loneliness, and satisfaction with one's life in the examined group of youths?
2. Is the presence of symptoms related to trauma exposure, gender, age, coping strategies, social support and family atmosphere?

The study's questions focused on identifying a range of negative reactions as well as the psychological mechanisms responsible for the long-term negative consequences of disaster experience.

Because of complexity of post-disaster phenomena, it seemed impossible to address these questions without a theoretical background. The theoretical model upon which our predictions have been organized is the model proposed by Vernberg and colleagues (1996). The model includes four groups of factors, which have an independent influence in explaining variance in PTSD in child disaster victims. General stress theories emphasizing the mediating role of coping strategies as a main source of variability in the model based on psychological outcomes are the model's foundation. It was expected that exposure to trauma during the flood would be associated with greater levels of psychological distress. Using avoidant strategies in the process of coping with disaster would result in higher symptom levels than using problem solving and active coping strategies. We anticipated that adolescents with lower availability of social support would exhibit more symptoms of distress than respondents with greater levels of social support. Negative family atmosphere would increase the range of negative outcomes. It was also expected that the research results would allow for the formulation of recommendations for psychological interventions with young victims of disasters.

Study design

The pilot study was conducted 10 months after the flood. The first wave of actual data collection was undertaken 20 months after and the second wave was conducted 28 months after the event. All together, 811 students aged 11 to 21 took part. The students completed questionnaires which included scales measuring symptoms of PTSD, depression, loneliness, satisfaction with one's life, coping strategies, social support, parental over-protectiveness, family conflict, and threat and losses experienced during the disaster. Most of the scales used in the study were adapted for the Polish language based on instruments frequently used in disaster-related studies published in the US and Western Europe. The scales were found to have good psychometric properties in the studied sample.

Participants and methodology

In the first wave of the study, 451 students living in the area devastated by the flood in 1997 participated. Their ages ranged between 11 and 20 years. In the second wave, 28 months after the flood, 533 school students took part. 72 % of them ($n = 324$) had participated in wave 1 before. 73 % were girls, and 68% of the respondents resided in rural areas.

Procedure

The research was conducted in primary schools, grammar and secondary schools that had been greatly affected by the flood. The study took place in the schools at times arranged with the headmasters, with teachers present. Two weeks prior to the beginning of the study, letters were sent to the parents of prospective participants at elementary and grammar schools explaining the purpose of the study and asking permission for their children's participation. Data were collected in groups of 10-15 participants by pairs of trained interviewers (university students). After introducing themselves, the interviewers explained the purpose of the study, how to complete the questionnaires, and answered any questions. The interviewers also informed that participants were free to refuse to participate or withdraw from the study at any time without explanation. Participants were also assured that their answers were entirely confidential and that only research personnel would have access to the data. Each session lasted about 45 minutes. All the participants were given sweets and small gifts.

Measures

In the order to assess PTSD symptoms, a Revised Mississippi PTSD Scale (RCMS) was used (Norris & Perilla, 1996). Depression was measured with the use of the Weissman, Orvaschel and Padian version CES - DC Scale (Seligman, 1996). Feeling lonely among other people was studied using the Asher, Hymel and Renshaw scale (Children's Loneliness Scale, 1984). Satisfaction with one's life was examined using the 9 items scale (Czapiński, 1994). Coping strategies were assessed using two scales: Active and avoidant coping adapted from the shortened version of the Kidcope scale (Spirito, Stark & Williams, 1988). Social support measure consisted of 16 items (Czapinski, 1998) and examined the availability of social support from parents, teachers, friends and a close friend. Thirteen items relating to overprotective parents were adopted from "A Parental Bonding Instrument" (Parker, Tupling & Brown, 1979). A family conflict scale was adopted from the Family Environment Scale (Moos, 1974). In order to study the experiences of children and adolescents related to the flood, the HURTE scale was used (Vernberg et al., 1996). It was extended by some additional questions. Four questions were related to experiences directly connected with life threatening, near-death-experience, e.g. 'Were you drowning or was your life endangered in any other way during the flood?' The remaining three questions concerned other facets of traumatic experiences. The respondents were supposed to answer 'yes' (1) or 'no' (0) to all trauma questions.

Results and their interpretation

The study results confirm the overall usefulness of the theoretical model that combined acquiring knowledge about child and adolescent victims of disasters and research concerning the effectiveness of various ways to provide help in crises (Bokszczanin, 2007; Bokszczanin, 2008).

All the variables included in the Vernberg et al. model were important predictors of the symptomatology. The study revealed many important relations. 28 months after the flood, there were still about 18 % of youths who could be diagnosed as displaying all the criteria of PTSD. Distress (symptoms of PTSD, depression, life dissatisfaction, loneliness) was associated with flood exposure 10, 20 and 28 months after the event. A

mediating role of coping strategies has been observed. It was also found that the adolescents took advantage of all possible ways of dealing with the event. Problem solving strategies, as well as those directed at improving their frame of mind, or strategies of avoiding the problem and associated feelings, were frequently used. The results clearly showed a detrimental influence of coping strategies based on avoidance. The positive impact of problem solving strategies was present but less prominent. The influence of perceived social support was beneficial to all children and social support generally acted independently of other variables. Hence, a lack of social support constitutes a negative (risk) factor. The data also showed how important the family environment after the disaster was for the youths. Similarly as with social support (or the lack thereof), the intensity of family conflicts influenced the level of PTSD symptoms. Lack of family warmth, low parental support, and a conflicted home atmosphere were detrimental factors for the young victims' wellbeing when coping with disaster trauma. Parental over-protectiveness, defined as excessive parental control and infantilisation, was associated with the highest levels of negative symptoms in the examined group of adolescent disaster victims.

A few ideas on how to help children

It can be assumed that the extent of suffering in the study sample was so great that not all children were able to cope with their problems on their own. Our results clearly suggest that at least some of the children who are victims of natural disasters will require psychological assistance in the period of time beyond 20 months after the event. The findings imply the need for:

- Augmenting problem solving skills.
- Discouraging avoidant coping.
- Continuing routine activities (school, sport, arts).
- Maintaining a sense of social support by creating opportunities to socialize with peers.
- If possible, engaging adolescents in the later post-disaster recovery process – helping others promotes a sense of mastery.
- Reassuring parents that children are generally resilient and should not be treated as overly vulnerable.

New research project: Post-traumatic growth in adolescents and social support

Another serious natural disaster that affected Poland in recent years was the flood of 2006 in the township of Piechowice, which is located in a mountainous area in the southern part of Poland. The flood destroyed dozens of kilometres of roads, the water supply system, the town's drinking water intake, 5 bridges and 3 footbridges, and damaged communal buildings, including preschools, schools, and many other buildings and homes. Although the Kamienna River, which was responsible for this devastation, had already flooded the area numerous times before, the damage it caused in 2006 was considered to be both extremely extensive and expensive².

Six months after the flood, students from one class of a technical school located in the flooded area were asked to prepare a short anonymous essay during their period; its title was *"My recollections of last year's flood"*. The method used, called storytelling, a popular tool in qualitative research, focuses on narrative analyses created by community members (Hale, 2004). The analysis of the texts written by 19 young people aged 16-18 showed that they all remembered the event very well. The students were able to describe precisely where they had been and what they had been doing during the few days in August when Piechowice was flooded. Below there are a few verbatim examples from the students' essays.

A girl, aged 17: *My recollections of the flood: During my summer vacation I worked at my father's*

construction site, where I was cleaning up. After a couple of days of heavy rain we could not get to work, as all roads were closed. Even buses did not run, the flood did horrible damage. The roads were destroyed everywhere.

A boy, aged 17: *during the summer holidays, after heavy rainfalls, the flood affected our district. On the third day of the disaster, at night I went with my mother to see what the situation was like at the river embankments. The water was overflowing. When I saw this, I was frightened. The following morning I woke up at 4 a.m. because the water was just beneath my apartment building. After 9 o'clock I went to see what was going on at my friend's place; there was half a meter of water in her house. I helped her to clean up after the flood.*

Six months after the flood the young people still remembered their feelings at the time of the flood. They all pointed that it was a great tragedy and they felt very sorry for the people, often their friends, who sustained losses because of the flood.

A boy, aged 18: *I think that the flood in our district was a great tragedy. Many people lost all their possessions. Because I live up on a hill, the flood did not affect me, but I observed the development of the disaster and I was very distressed by it.*

The young people's opinions revealed also that their psychological health was at risk because of their experiences of heavy stress. Many students could cope with their depressed mood and dismay only by helping others. During rescue operations they frequently showed courage and dedication.

A boy, aged 17: *There was ubiquitous panic in the town. Together with my friends I was filling up sandbags. When I saw dead fish washed ashore by the raging river, I had suicidal thoughts.*

A boy, aged 16: *A great tragedy occurred during the summer vacation. The Kamienna River flooded the area. Piechowice was flooded the most; the river was overflowing into the streets there. I helped to carry sandbags; it did not prevent the first wave of the flood, but the water did not reach us with the second wave. At my cousin's place the water was right at the door level. It was a tragedy for all the residents of Piechowice.*

The analyses of the statements made by the students from Piechowice as well as a review of current literature resulted in a new research project focused on the phenomenon of post-traumatic growth and young people's involvement in their social support network's rescue and recovery efforts.

In the recent decade positive psychology has played an important role in the explanation of the psychological and social aspects of human behaviour, including child and adolescent behaviour. Positive psychology deals with positive emotions and human character features and looks for their indicators, contrary to the approach concentrating on pathology, its causes and treatment, which was dominant from the 1950s to the 1990s. It does not imply downgrading or replacing the value of knowledge of suffering, disorders or weaknesses, but the objective of positive psychology is to supplement and extend our comprehension of the conditions for the development of positive emotions and personality characteristics (Seligman & Csikszentmihaly, 2000).

Moreover, Huppert (2004) for instance, proposed to employ a population approach to positive psychology and to use *population interventions* to promote wellbeing and prevent disorder. She proposed, "By adopting theoretical concepts developed in the field of epidemiology, combined with theoretical and empirical developments in positive psychology, psychologists can both promote positive well-being in the general population, and as a direct consequence, reduce the prevalence of many common physical and mental disorders" (2004, p. 2).

The experience of stressful events generates not only negative consequences like sadness and rumination, but also positive (salutogenetic) ones, such as spiritual growth, better understanding of oneself and others, clearer

priorities in life, improved relations with other people. In light of empirical research, the negative and positive changes appear to be separate phenomena of the same psychological process (Tedeschi & Calhoun, 2004; Solomon & Dekel, 2007). The appearance of both positive and negative phenomena can be observed a long time after stressful events.

The concept of post-traumatic growth, relatively new in psychological literature, is an interesting challenge for researchers and theorists. Tedeschi and Calhoun (2004) believe that post-traumatic growth is a positive long-lasting health effect of being able to cope with trauma. According to Taylor (1983), it is a kind of ability to cope with stress consisting in the formation of "positive illusions" of improved welfare after a trauma. These illusions allow for the improvement of one's wellbeing. However, Solomon and Dekel (2007) believe that post-traumatic growth, i.e. finding advantages from traumatic experiences, is a result of a defensive compensation which protects the victim from the realization of sustained losses, and which can consequently lead to chronic health problems. Although the very process of post-traumatic growth formation and its long-term effects are not quite clear, the experience of stress and trauma are considered to be growth catalysts.

A review of growth-related literature and the analysis of the statements made by the young people after the flood in Piechowice have led to the following research questions:

1. What is the relation between the pathogenetic and the salutogenetic effects of experiencing heavy stress in adolescents?
2. What is the relation between the effects of heavy stress in young people and their participation in post-disaster exchange of social support?

Post-crisis communities function at a high level of mutual support and solidarity. During disasters and catastrophes and after such events, young people receive help and offer help to others. They participate in rescue operations, help others to rescue their possessions, and help with cleaning up after the disaster. Receiving and offering support reduces the negative effects of disasters and increases the positive ones (Kaniasty & Norris, 1999; Kaniasty, 2003).

In order to answer the above questions, a longitudinal study was carried out in which almost 400 young people - secondary school students from Piechowice - participated. They were tested twice: In March 2007 (8 months after the flood), and 21 months after the flood. Data collection was anonymous and conducted with the students' and school authorities' consent. Psychology students from Opole University took an active role in the research as part of their community psychology course³. All participants were given little souvenirs as tokens of appreciation for their time spent on the survey. The results are now being analyzed.

The theoretical expectations from the research include more insights into the mechanisms and dependencies between the beneficial influence of social support and psychological growth, and health and wellbeing. It is expected that this *positively oriented approach* will contribute to the improvement of psychological interventions aiming at young people who affected by various disasters. Because of the small amount of empirical reports on the relation between post-traumatic growth and social support in adolescent victims of disasters, the research project examining the flood in Piechowice should be considered as a preliminary exploration of the problems of post-traumatic growth and the psychological effects connected with receiving and offering social support by adolescent disaster victims.

Conclusions and future directions

This chapter presented basic assumptions and main results of the author's research programs carried out with young people affected by the negative consequences of natural disasters. The research also has a practical aim for the development and organization of intervention activities. Methodologically, the research takes a

population approach, as it is oriented toward the identification of individuals who have a disorder (or are at a high risk for a disorder) and toward a universal intervention, which aims at shifting the whole population in a desirable direction (Huppert, 2004; Loyd & Turner, 2003).

In the light of available literature and presented research results, it is indisputable that help offered to children and adolescents in the situation of a collective crisis is a priority because their ability to cope with the problems that occur during and after a disaster is lower than that of adults (Norris et al. 2002). Empirical research results presented in this article also allow for the assumption that the key to effective intervention is preliminary planning of all activities to be carried out during, and after disaster (Flynn and Nelson, 1998; Pynoos et al., 1998). In both cases quick intervention adjusted to the character and intensity of the stressors is necessary. Although initially the attention should focus on the victims' physical needs, early psychological intervention should not be disregarded. Victims should be made aware of potential (further) psychological consequences of the disaster, and shown available sources of support and aid (Pfefferbaum, 1997).

Work with children and their families is a task for trained psychologists, education professionals and social workers, and their main activities should be directed at the school and family environments. The main aims of intervention activities in school should be to restore the sense of security and emotional stability, an uninterrupted education, and creating the opportunity for unimpeded development. Therapeutic programs in school should encourage students to return to their routine of everyday activities and "normal life". The experience of a disaster is stressful not only for adolescents but for all family members (e.g. Flynn & Nelson, 1998). A family affected by a crisis is often too strained and burdened to offer the child adequate help, or to understand her/his problems and deal with them competently. Professionals dealing with family assistance can provide parents with many useful hints for successful coping with stress. It is important for parents to learn how to identify the symptoms of disaster-related distress and to encourage children to ask questions and articulate their problems. The main tasks of family assistants are restoration of family rituals, looking for creative ways of coping with stress, supplying information about the possibilities of receiving help from other sources.

The presented research results indicate that intervention effectively enhancing mental health should be connected with evidence-based strategies (Huppert, 2004). Further research concerning the negative and positive factors influencing post-disaster well-being of children and adolescents has to be carried out. In subsequent research projects, factors improving the psychological health of young victims of natural disasters should be taken into consideration more than before. More research should explore the persistence of psychological symptoms as well as the signs of resilience after natural disasters (Huppert, 2004).

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Notes

1. Coraz mniej ofiar katastrof naturalnych; <http://wiadomosci.ngo.pl/wiadomosci/36724.html> (access at 22nd of January, 2009)
2. Powódź w Piechowicach - pomoc Lionów.
http://lions.org.pl/index.php?option=com_content&task=view&id=541&Itemid=161 (access at 22nd of January, 2009) [www.http://www.psychologia.uni.opole.pl/index.php?id=wydarzenia](http://www.psychologia.uni.opole.pl/index.php?id=wydarzenia)

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