



Children facing natural, economic and public health crisis in Europe: The risks of a predictable unpredictability

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Abstract

This opening article for the volume dedicated to the diversity of paediatric healthcare systems in Europe, discusses the topic of children facing natural, economic, and public health crises in Europe. The natural and economic adversities and public health crises, which have repeatedly stormed the globe during the past twenty years, have often unveiled a low degree of self-sufficiency and a high degree of unpreparedness by European countries. It is always the case that the most vulnerable take the brunt, and these adverse events have shown their effects and a negative direct impact particularly on the population aged 0–18 years, with important implications for families and communities. The article discusses a rational approach to properly confront future public health emergencies and crises in general. The authors stress the concept that such approaches should be built on past negative experiences, in order to explore, identify, and make clear which are the priorities governing the disaster management activities at all levels in this population group. The authors conclude that safeguarding the health of children could be effectively accomplished by developing adequate, shared emergency management strategies. Improving pediatric preparedness approaches with the use of emergency measures and ongoing collaboration will facilitate a better and more efficient response, able to effectively care for the needs of children in actual crises.

Keywords: Children, crisis, disasters, emergency, preparedness

Introduction

The United Nations 2019 demographic report shows that the population living within the geographic and political borders of Europe, including Turkey, is about 975,000,000 people, or 12.5% of the world population (1). Children under the age of 18 years make up nearly 23%, or 225 million individuals (1). Given the significant number of children living in Europe, their unique needs should be taken into consideration by governments and legislators and more thoroughly integrated into healthcare planning at local and national levels, and systematically included in the recommendations elaborated by European political or-

ganisms, primarily the Council of Europe (2). However, the requirements of this important part of the European population seem not to have been taken into sufficient account by European authorities and local governments during the past 50 years (3, 4).

The natural and economic adversities and public health crises, which have repeatedly stormed the globe during the past twenty years, have often unveiled a low degree of self-sufficiency and a high degree of unpreparedness by European countries (5–7). It is always the case that the most vulnerable take the brunt, and these adverse

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events have shown their effects and a negative direct impact particularly on the population aged 0–18 years, with important implications for families and communities. A rational approach to properly confronting future public health emergencies and crises in general, should be to build on past negative experiences, in order to explore, identify, and make clear which are the priorities governing the disaster management activities at all levels in this population group.

Natural, economic disasters and public health emergencies

Natural, economic disasters and public health emergencies are interconnected phenomena (8). The effects of natural disasters and public health crises on economic instability has been the subject of decades-long research, engaging experts since the beginning of the last century. However, the interest, studies, and analysis of these phenomena seem to be confined to experts and professionals in the area of public health, economics, and disaster management because natural, economic, and public health emergencies appear to be views by governments and legislators as predictably unpredictable events.

Trauma is a global issue (9). Disasters and distressing natural events occur periodically around the world and need to be met with rescue and recovery interventions including adequate health approaches (9). The nature and effects of these disasters are progressively more complex because they are influenced by several factors including climate change, population movement, economic interdependence, and the general phenomenon of globalization (10). During the past 20 years (1998–2018), climate-related and geophysical disasters killed 1.3 million people, 320,000 of whom were children, and left a further 4.4 billion injured, homeless, displaced or in need of emergency assistance (10). The majority of fatalities were due to geophysical events; over 90% of all disasters were caused by floods, storms, droughts, heat waves, and other extreme weather events. Floods impacted the largest number of people, with more than two billion, and drought affected an additional 1.5 billion individuals (10). During the same period, earthquakes killed nearly 750,000 people, and storms, including tropical cyclones and hurricanes, killed 233,000 people. Single events can be devastating, as in the case of the earthquake in China in 2008 that killed almost 70,000 people and injured close to 375,000, with around 18,000 recorded as missing (11). The number of children affected by natural disasters attributed to climate change is estimated to be over 170 million per year, and the number of children seriously injured or dying each year from such disasters is high, as

yet undetermined (12). Direct economic losses due to the sum of natural disasters are valued at US\$ 2908 billion. Climate-related disasters, which caused US\$ 2245 billion or 77% of the total economic loss, is responsible for economic distress and poverty worldwide, and at least 85% of the population who develop disease due to climate change are children (10, 13).

The impact of economic crises on child health is a consolidated notion (8). The recent 2008 economic crisis was severe, involving national economies at a global level. It equally affected public health services of nations presenting either a weak or a strong domestic growth, and raised strong concerns about the sustainability of public health-care systems of European Nations, and ultimately about the health of European citizens (8). The worsening nutrition habits observed in disadvantaged families worldwide were caused by difficulties in food access and availability, mainly due to the escalating prices of foods (8, 14, 15). In 2009, alarming data were reported from Africa, where in sub-Saharan African countries was described a surplus of 30,000–50,000 infant deaths. In Europe, the unfortunate and improvident penalizing economic measures imposed by the European Union (EU) to some member countries, instead of providing relief, caused heavy damages to their national socio-economic systems and generated long-term negative effects on health systems throughout the Union (6, 8, 16). In Greece, perinatal, neonatal, and infant mortality all increased by 20% to over 30% from 2008 to 2010 (17). In particular, stillbirth rates increased from 3.31/1000 in 2008 to 4.28/1000 in 2009 and 4.36/1000 in 2010, showing a 32% increase over 2 years (18). Further data show that other areas of public health were also negatively impacted, as the prevalence of psychosocial problems have risen by 40%, conduct disorders by 28%, school leaves by 25%, bullying by 22%, suicide attempts 20%, illegal and additive substances have risen by 19%, and family conflicts by 51% (19, 20).

The recent pandemic caused by COVID-19, as in the two preceding instances of the emergence of coronavirus disease (SARS in 2002 and 2003, and Middle East respiratory syndrome in 2012 and 2020), has posed critical challenges for the public health, research, and medical communities (7, 21). During epidemic events, children can be disproportionately affected compared with older age groups, as in the case of pandemic influenza 1-H1N1 (22). Furthermore, although clinical manifestations in children could be less severe than in adult patients, as in the case of COVID-19, reports from areas involved by the pandemic show that children and adolescents are significantly hit by the psychological consequences related to the epidemic (23).

Table 1. Children's distinctive conditions and needs in emergencies

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- Academic failure, post-traumatic stress disorder, depression, anxiety, bereavement, behavioural disorders, including delinquency and substance abuse (long-lasting effects)
 - Higher susceptibility of children to chemical, biologic, radiologic, and nuclear accidents (need of special medications, doses, and delivery systems).
 - Major vulnerability of younger children during adverse situations (inability to avoid or escape dangers, identify themselves, preserve self-estimate and make critical decisions)
 - Need of secure attachment to adult figures as their base of security (care, shelter, transportation, and protection from predators).
 - Children's need to continue relying on their schools, care providers, or other child congregate care environments, which must be prepared to ensure children's safety.
 - Importance for children to be rapidly reunited with their legal guardians if separated from them during a disaster.
 - Easy access to disaster shelters equipped with age-appropriate supplies such as diapers, cribs, baby formula, and food.
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All these events have further warned governments worldwide about the importance of preparedness for adequate crisis management, regardless of its nature. This is particularly important for Europe, due to the difficulty of coordinating the efforts of 53 different countries, which have often shown irreconcilable cultural, political, and economic visions. The several threats posed to global health during recent years have particularly emphasized the importance for countries to accelerate the development of guidelines for short, medium, and long-term preparedness, to be applicable to different situations, and to enhance the ability to develop adequate strategies and target resources. Effective strategies should also guide states and their local authorities to better identify impediments, which at any level may delay timely distribution of funds, identify best practices and make recommendations to overcome these complications. Most importantly, effective strategies should include a competent communication system that is able to reach both local administrators and populations, in order to keep them informed as to program requirements and opportunities for assistance.

The importance of developing reliable and effective coordinated strategies

A nation's ability to prepare for, respond to, and recover from disaster, especially in regard to children, should not depend on a single level or agency of government, and cannot be tackled with fragmented approaches (24). An effective system for disaster management should depend on well-planned, coordinated, interactive strategies and reliable methodologies, based on a shared responsibility, centred on each team member doing what it does best and leveraging the expertise and strengths of others, and most importantly, it must be checked for its applicability. Capabilities, policies, and programs are currently fragmented and need clearly stated desired outcomes, priorities, and resources for children, across and among all levels of governments.

Children have distinctive needs in emergencies

The deficiency of clear priorities and sufficient resources for children and families, which is generally observed in Europe in times of emergencies, seems to be mainly related to the absence of comprehensive national strategies, inclusive of children's needs. Strategies designed for emergency events should provide platforms for developing adequate and short- and long-term objectives and capabilities, applicable at national and local levels, and able to more cohesively address gaps in disaster preparedness, response, and recovery for children. Children have unique vulnerabilities that must be addressed by specific emergency management activities and policies because they are not small adults (Table 1) (25).

Turning learning into action

Typically, children present unique needs in all types of emergencies and disasters, which can be anticipated. Therefore, in developing disaster management strategies, governments should place a specific and sustained focus on children in their daily and disaster response activities. The important first step to take should be the inclusion of children as a distinct group within population categories labeled 'at-risk,' 'vulnerable' or 'special needs,' rather than as part of larger categories. A further key step should be the creation of centralized and permanent authorities at a national level that are able to identify and fix gaps in disaster policies and programs for children and families. Their purpose would be to ensure appropriate support for the safety and security of children, including children with disabilities, before, during and after natural and health-related emergencies, including epidemics, earthquakes, tornadoes, fires, floods, hurricanes, and acts of terrorism. Authorities for children should provide effective recommendations for national-level guidance to families, schools, and childcare providers concerning personal precautions, possible access to medical treatments, and school closures. This would facilitate the develop-

Table 2. Factors influencing children's emotional reactions in emergencies

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- Experiencing a direct impact or indirect involvement with an adverse event
 - Have suffered a previous episode of emergency
 - Fear for the loss of a loved one
 - Fear for the loss of a family member, close friend, or pet
 - Fear for the unknown
 - Uncertainty of their own health
 - Have suffered physical injury
 - Sense of uncertainty transmitted by parents and/or caregivers
 - Separation from parents, families and/or caregivers
 - Availability of family resources
 - Change of routine and life conditions
 - Change of lifestyles
 - Cultural background
 - Level of education
 - Interfamily relations
 - Level of communication among family members
 - Recurring exposure to media coverage of traumatic events and aftermath
 - Community reaction, resilience ability to respond and recover to adversities
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ment and implementation of distinct disaster planning for the population aged 0–18 years and the activation of dedicated tasks, as in the case of the children's health teams created in the United States of America, Middle East, and Europe in response to the 2009 I-H1N1 pandemic, which disproportionately affected children (26).

Caring for children after emergency is over

The amount of damage caused by a disaster can be overwhelming and affect children physically and mentally. Separation from school, family, and friends can create a great amount of stress and anxiety for children (Table 2). Once the initial disaster event is over, it can take a very long time for families and communities to return to a normal level of functionality. Helping in the return to pre-emergency conditions and standard lifestyle is the primary goal in children. However, communities are often at high risk for further adverse events or a prolonged condition of instability. Therefore, it will be important to assess whether the goal should be to achieve a new normality, with better infrastructure and acceptable stability, rather than to re-establish a pre-event normal status. The recovery of an impacted population, takes much longer than just rebuilding structures for living, working, studying or relaxing. Several studies have shown different long-term effects of adverse events on children, as in the case of mental health disorders including depression, that were found in a large pediatric community over more than 4 years after the 2008 earthquake in China, which killed almost 70,000 people and injured nearly 370,000 (11, 27).

Children's reactions are often influenced by the adults' behavior around them. The best support for children is provided when parents and caregivers reactions to adverse events are stable and they deal with emergencies with confidence. However, the impact of trauma associated with both the disaster itself, and prolonged or difficult recoveries, can last a very long time in children. Therefore, resilience, the personal attribute that help children to manage everything, from little disappointments to large life traumas, should be nurtured and implemented by public health programs in children and teenagers living in communities hit by adverse events (28). Resilient adults may initially protect themselves through the period of trauma and recovery, and transmit a sense of resilience to their children. However, if recovery takes a long time and stressful conditions are prolonged, it will be difficult for adults to remain the sole resilient defense and support for children. Fostering resilience must then be an integrated part of any strategic plan of recovery for children hit by natural, economic or health disasters (28).

Appropriate communication strategies are also key in the management of adversities in order to disseminate correct information coherent with the strategic plans adopted (29). Finally, people and children in particular can become increasingly distressed if they see repeated images of a disaster in the media, therefore limiting the amount of exposure to media coverage should be a good practice to be recommended and implemented.

Conclusions

Children are often overly impacted by natural disasters, global and national economic distress events, and health-related emergencies. Public health systems have been shown to often be unprepared in properly responding to these periodic adverse events, causing children to carry a significant health burden, because they are the most vulnerable members of the population. However, they remain generally underrepresented in preparedness planning and activities. In particular, Europe, seems to show a high degree of unpreparedness due to the characteristic diversity between the health systems of its 53 nations (30, 31). Supporting and improving synergies, and establishing effective collaborations between public health systems and pediatric communities are key factors in the effort of safeguarding the health of children, which can be accomplished by developing adequate, shared emergency management strategies. Improving pediatric preparedness approaches with the use of emergency measures and ongoing collaboration will facilitate a better and efficient response able to effectively care for the needs of children in actual crises.

The lack of cross-sector interactions and collaborative investment in public health systems and services is an impediment to developing a satisfactory pediatric emergency preparedness. Several local and community-based programs addressing preparedness are in effect in each European nation (3, 32). However, the scale of problems is too large to be handled solely on a local basis. High-functioning community-based models of children's preparedness are necessary, but are not replacements for government planning, initiatives, and large-scale funding. Although hoping for the best, the political gridlocks and economic constraints that frequently distress European countries, suggest that, currently in the area of programming children's preparedness for emergencies, we should be at least prepared to avoid the worst. Providing comprehensive recommendations to national authorities and actively advocating for children's health and their needs in adverse circumstances should become a priority for national pediatric societies and associations. Making children a priority will have important implications at all levels of government for training, equipment, supplies, and exercises, because priorities drive investment and resource allocation decisions.

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