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The Gaziantep Model: Integrated Mother-Child Health Services for Healthy Communities After Disasters

Gaziantep Modeli: Afetler Sonrası Sağlıklı Toplumlar İçin Bütünleşik Anne-Çocuk Sağlığı Hizmetleri

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Öz

Bu makalede, afetler sonrasında entegre anne-çocuk sağlığı hizmetlerine odaklanan Gaziantep Modeli, özellikle 2023 Türkiye depremi üzerinden ele alınmaktadır. Model, afet sonrası sağlıklı toplumlar oluşturmada anne ve çocuk sağlığının önemini vurguluyor ve fiziksel ve zihinsel sağlığa yönelik kapsamlı bir yaklaşım sunuyor. Gaziantep modeli, hem bireysel hem de toplumsal düzeyde bakım sağlamak için mobil ve sabit sağlık hizmetlerinin hibrit yapısını kullanıyor. Aynı zamanda sağlık personelinin refahının öneminin de farkındadır. Makalede, özellikle Suriyeli mülteci nüfusunun yoğun olduğu bölgelerde, depremlerin sağlık tesislerine verilen hasar ve sağlık personeli üzerindeki baskı da dahil olmak üzere önemli etkileri vurgulanıyor. Üstelik depremden bağımsız. Gaziantep, mevcut anne ve bebek ölüm sorunları nedeniyle bu modelin uygulanması için uygun bir il olarak hizmet vermektedir. Makale, hamilelik sırasında artan riskler, zihinsel sağlık sorunları ve çocuklar için gelişimsel zorluklar da dahil olmak üzere, felaketlerin anne ve çocuk sağlığı üzerindeki uzun vadeli sonuçlarını vurgulamaktadır. Gaziantep modeli, çeşitli kurum ve kuruluşlar arasında işbirliğini teşvik etmeyi, hedefe yönelik müdahaleler geliştirmeyi, anne ve çocuk sağlığını iyileştirmek, sağlık personeli arasındaki tükenmişliği azaltmak ve toplumların genel refahını artırmak için veri toplamayı amaçlamaktadır. Gaziantep Üniversitesi, ZERU Derneği, Gaziantep İl Sağlık Müdürlüğü ve Gaziantep Belediyesi'nin ortaklığını içeriyor. Genel olarak, Gaziantep Modeli, işbirliği ve uzun vadeli toplum sağlığına odaklanarak, afetler sonrasında annelerin, çocukların ve ailelerin benzersiz sağlık ihtiyaçlarını karşılamaya yönelik kapsamlı bir yaklaşım sunmaktadır.

Anahtar kelimeler: Afet, ruh sağlığı, erken çocukluk, Türkiye, deprem

Abstract

This article discusses the Gaziantep Model, which focuses on integrated mother-child health services in the aftermath of disasters, with a particular focus on the 2023 earthquakes in Turkey. The model emphasizes the importance of maternal and child health in building healthy communities post-disaster and offers a comprehensive approach to address physical and mental health. The Gaziantep model uses a hybrid structure of mobile and fixed healthcare services to provide care at both individual and societal levels. It also recognizes the importance of healthcare staff's well-being. The article highlights the significant impact of the earthquakes, including damage to healthcare facilities and the strain on healthcare personnel, especially in regions with a high population of Syrian refugees. Moreover, independently of the earthquake. Gaziantep, with its existing maternal and infant mortality challenges, serves as a suitable province for implementing this model. The article emphasizes the long-term consequences of disasters on maternal and child health, including increased risks during pregnancy, mental health issues, and developmental challenges for children. The Gaziantep model aims to foster collaboration among various agencies and organizations, develop targeted interventions, and collect data to improve maternal and child health, reduce burnout among medical personnel, and enhance the overall well-being of communities. It involves the partnership of Gaziantep University, the ZERU Association, Gaziantep Provincial Health Directorate, and Gaziantep Municipality. Overall, the Gaziantep Model offers a comprehensive approach to address the unique healthcare needs of mothers, children, and families in the aftermath of disasters, with a focus on collaboration and long-term community health.

Keywords: Disaster, mental health, early childhood, Türkiye, earthquake

On February 6, 2023, two destructive earthquakes measuring 7.7 and 7.6 in magnitude, covering 11 provinces in the southern part of Turkey and Western Syria, were followed by a 6.4 magnitude earthquake on February 20 and thousands of aftershocks. According to data from the first three months, 50,783 people lost their lives in Turkey, while 8,476 people lost their lives in Syria. In the aftermath of the earthquakes, an estimated 1.5 million people became homeless. These earthquakes affected approximately 14 million individuals in Turkey. As of March 6, 2023, damage assessment work was conducted on 1,712,182 buildings in the 11 affected provinces, with over 500,000 buildings being destroyed [1].

The earthquakes also caused significant damage to existing healthcare facilities. In the region, 42 hospital buildings suffered severe or significant damage, while 94 hospital buildings sustained minor damage. Unaffected healthcare establishments found themselves facing a high number of patients beyond their capacities with a limited number of healthcare personnel. In addition, healthcare workers themselves or their family members became earthquake victims trapped under debris or the buildings they lived in sustained damage. Only a few personnel with their physical and psychological well-being intact remained capable of working in the field. The region affected by this devastating earthquake in Turkey is also the one that had already received a substantial amount of migration prior to the earthquake. Approximately 50% of the total Syrian population in Turkey [around 3.5 million] resides in the 11 provinces impacted by the earthquakes, and the number of Syrians under temporary protection in the region is 1,738,035 [1]. Therefore, this major disaster unfolded alongside the migrant population, significantly affecting them as well.

Gaziantep is one of the provinces that was most affected by the earthquake. In the earthquake, including the largest hospital in Gaziantep, three hospitals suffered damage, rendering them unable to provide services in their own buildings. 4 Primary Healthcare Centers [PHCs] suffered severe damage, and 1 PHC sustained moderate damage, leading them to provide services in containers instead of their original buildings. Hospitals in the Nurdağı and Oğuzeli districts began operating as "Field Hospitals." During the initial phases of the earthquake, primary healthcare services, initially provided in a mobile manner, started being offered in containers, especially in districts like Nurdağı and Islahiye, where the most significant damage and loss occurred. Disruptions occurred in providing medical care for babies, children, mothers and women aged 15-49, particularly in the Nurdağı and Islahiye towns. Additionally, according to official data, there are 436,757 Syrian refugees in Gaziantep, who have also been affected by the earthquake [2]. This figure constitutes approximately a quarter of the Gaziantep population, which, according to 2023 data, is around 2,185,000 people [3].

As we know, disasters create significant public health problems and disrupt the physical, mental, and social well-being of society. Injuries, deaths, financial losses, and forced relocations deeply affect this negative process and give rise to several layers of trauma. To

prevent and reduce these effects, a comprehensive approach, based on scientifically grounded public health principles, is necessary. Among the groups most affected by disasters are mothers and children. Since healthy mothers and children constitute the core of a healthy society, to create and strengthen healthy communities, investing in the preservation of maternal and child health during disasters is also essential. A systematic approach to intervene in such vulnerable groups after a disaster can prevent the emergence of chaotic situations and ensure the efficient use of resources that are already lacking in disaster situations. After disasters, some health intervention teams have been established in certain countries. These groups, known as Disaster Medical Assistance Teams, deliver professional health assistance to disaster-stricken areas as quickly as possible (4). Nevertheless, there is still a need for models prepared with a comprehensive perspective.

The Gaziantep model, outlined here, presents a comprehensive approach that prioritizes the well-being of vulnerable people and their families to positively impact public health. With the help of a hybrid structure (combining mobile and fixed healthcare services) it addresses both physical and mental health from an individual and societal standpoint. The model also recognizes the importance of healthcare staff and their overall wellness. Therefore, determining their needs and planning for the provision of necessary physical and training support are prioritized. Finally, the Gaziantep model proposes solutions and implementations based on short and long-term collaboration among relevant institutions working in the field.

An influencing factor in selecting Gaziantep for the model, which aims to enhance the resilience of vulnerable groups such as mothers and children after an earthquake, is the persistently high maternal and child mortality rates that have been ongoing since before the earthquake. In Gaziantep, Turkey, even before the 2023 earthquakes, data shows that maternal and infant mortality rates were significantly higher compared to other regions in the country. This is one of the main reasons why the Gaziantep model initially focuses on this province. Figure 1 depicts the provinces in Turkey with the highest infant mortality rates [5].

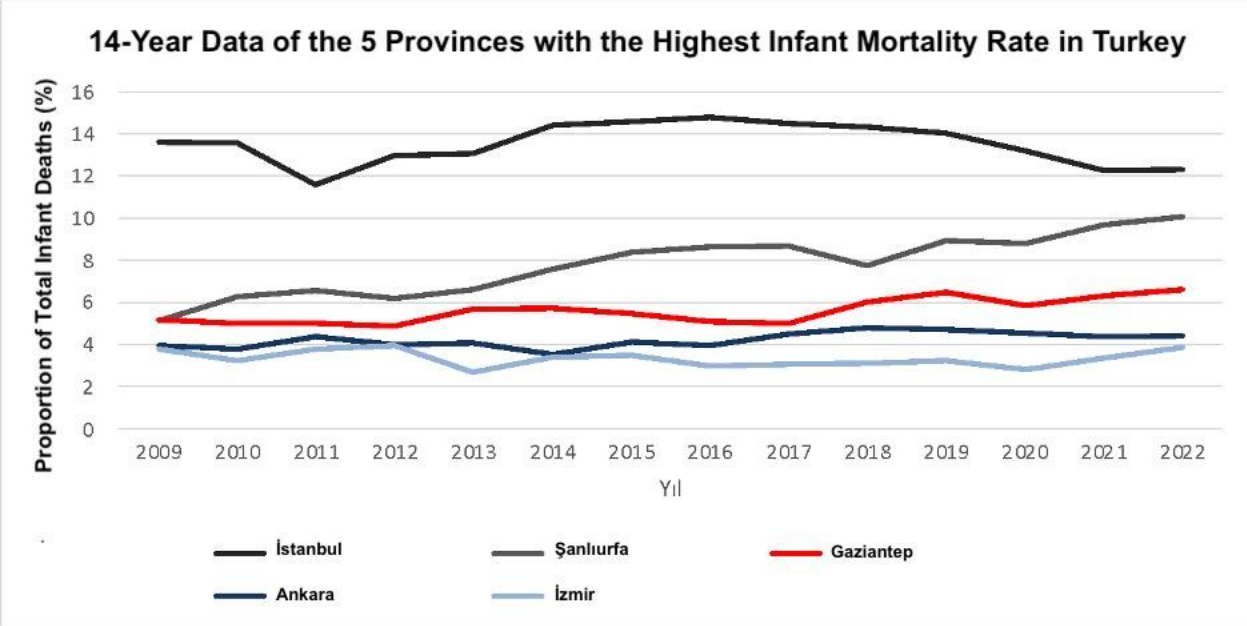

Figure 1: 14-Year Data of 5 Cities with the Highest Infant Mortality Rates in Türkiye

Maternal mortality rates (MMR) in Turkey (per 100,000 live births): 28.5 (2005); 16.7 (2010); 14.6 (2015); and 13.1 (2019). However, in the earthquake-affected region, the maternal mortality rate fluctuates between 15.8 and 17.8 per one hundred thousand live births during the period of 2015-2019. During the same period, Gaziantep's rate stands at 14.8 [6]. At that time, the average rate in the European Union is 8 maternal deaths per 100,000 live births [7]. It is assumed that after the earthquake, with the disruption of healthcare services, these rates have increased even further. According to the 2021 Turkish Statistical Institute data, the crude birth rate in Gaziantep is 19.3, and the total fertility rate is 2.47, which is considerably

higher compared to the entire Turkey. In Gaziantep, there are 35,402 babies, 24,648 pregnant women, and 1,066,288 women (of which 578,443 are in the 15-49 age range) [8].

The data above demonstrates clearly why Gaziantep is a suitable province for the application of the proposed model. Additionally, the examination of the literature, summarized below, reveals the detrimental impact of disasters on children, mothers, and families and emphasizes the urgency to address their healthcare needs with a comprehensive and collaborative approach. Disasters, including earthquakes, have several adverse effects on maternal and child health. The literature on perinatal health shows the serious risks associated with disasters including preeclampsia, child loss, and premature labor, which pose a threat to the health of mothers and their babies [9]. Exposure to increased stress in utero, epigenetic changes, and various health risks at every stage can have long-term detrimental effects [10]. There are also several physical consequences for children including trauma, death, limb loss, communicable disease.

The mental health of adults, particularly mothers and fathers, is also greatly affected by disasters. During disasters, the rates of post-traumatic stress disorder, anxiety, depression, anger, inner conflicts, substance and alcohol use, work and financial problems, and psychosocial dysfunction increase significantly [11]. Maternal mental health issues not only impact the mother but also have consequences for the entire family, potentially leading to public health problems. The relationship between mother and infant is crucial for the mental health and development of the child, and parental mental health problems can influence this bond as well as family disruption and increased stress on the family [12].

Early experiences in human life are very important in establishing a foundation for lifelong physical and mental health. Neuroplasticity [the capacity of the human brain to change with experience] is highest in the first years of life. The disruption of early relationships and the family environment can cause psychological trauma and significantly impact neurodevelopment. Even very young infants can experience trauma in complex ways. Families require a supportive environment to cope with the challenges posed by disasters and prepare for future ones. Effective support for parents and nurturing parent-child relationships can act as a buffer against long-term negative effects and further trauma [13,14].

Children of all ages are particularly vulnerable during disasters, experiencing fear, separation anxiety, and depression. The earthquake may negatively affect their social and emotional development. To protect and support the mental health of children after an earthquake, interventions involving the family, school, and the entire community are necessary. These interventions may include psychosocial support, encouraging emotional expression in children, enhancing the sense of safety, establishing predictable routines, and providing professional assistance. Early intervention and support can help children cope with the stress caused by the earthquake and prevent long-term consequences.

Considering the aforementioned concerns and facts, the Gaziantep model aims to approach public health from a holistic physical and mental health perspective. While the initial goal is post-disaster relief, the long-term objectives include contributing to overall public health of communities. The mother-child dyad and the family are seen as a generative unit or a seed for society. Instead of implementing costly and unrelated interventions, this model proposes a detailed study of the ecology and designs targeted interventions to support maternal, child, family health and the overall health of society. The Gaziantep model also recognizes the parallel process and the impact of provider burnout on patient care [15]. Finally, the model acknowledges that to support the health of mothers and children, and families in a comprehensive and holistic way, communitywide, national, and international collaboration between agencies is key.

The integrative model aspires to achieve the following objectives:

1. Foster collaboration among various agencies and nonprofit organizations within the community.
2. Support a comprehensive healthcare system that includes both mobile and fixed units, as well as well-trained staff.
3. Collect data on maternal and child mortality rates and identify the needs in areas of maternal, infant, child health.
4. Assess relevant healthcare staff burnout.
5. Develop targeted interventions and training programs that focus on improving maternal and child health, address social determinants of health, and reduce burnout among medical personnel.
6. Carry out these initiatives in partnership with local institutions, national and international agencies, and nonprofit organizations.

In line with this goal, the Gaziantep model encompasses the scientific leadership of Gaziantep

University; partnership and scientific support of the ZERU Association, which is dedicated to women's health, education, and empowerment at national and international levels; and the collaboration of Gaziantep Provincial Health Directorate and Gaziantep Municipality, which play an active and pioneering role in the field during earthquake periods. By implementing the Gaziantep model, we aim to contribute to the creation of a collaborative and effective healthcare system that prioritizes the well-being of children, families, and healthcare professionals.

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