

Health Impacts on Pregnant Females during Disasters in Pakistan

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Abstract:

Introduction: Pakistan is vulnerable to many hazards due to its geography and climate condition, like floods, earthquakes, droughts and landslides. Some manmade hazards also provoking us like, road traffic accidents, fire, structural collapse, radiological and chemical spills etc. Pakistan have faced many of these which affects us badly at every perspective of life for example health, communication, water and sanitation and infrastructure.

This study focused on health problems experienced by pregnant females during any type of disasters. Females faced so many problems because of very sensitive issues like unavailability of health facilities, lack of food, and unavailability of clean water, accommodation and transportation.

Methodology: This is the descriptive cross-sectional study. The objective of the study was to identify health problems faced by the pregnant females during disasters. Annual disaster report of National Disaster Management Authority Pakistan and Pakistan Red Crescent Society is employed to identify these problems.

Discussion: Unexpected environmental events cause natural disasters which affect entire communities and are likely to endanger life and property. In addition to causing casualties and economic losses, exposure to natural disasters can precipitate transient and more enduring somatic and psychological symptoms that relate to posttraumatic stress disorder and depression.

Conclusion: Pakistan is exposed to different hazards due to its geography and climate situation. Catastrophic incidents, both natural and manmade, bring about heavy loss of human lives and livelihoods, damage to property and infrastructure. Such episodes can also aggravate natural processes, such like sudden tectonic movements, which promote earthquakes and tsunamis, resulting in frequent cyclones, continuous dry conditions cause prolonged droughts, severe storms, unexpected heavy rains, excessive snowfalls, floods, landslides, and avalanches, etc. The country is also vulnerable to manmade disasters, for example industrial hazards, bomb blasts, building fires, armed conflicts and nuclear and radiological events.

Key Words: Disaster, Hazards, Vulnerability, Female Population, Diseases

Introduction:

Any extraordinary situation or event that requires intense, rapid response and that can be addressed with existing community resources is said to be emergency. Disaster refers to an situation or event that have the

magnitude greater than an emergency; disrupts essential services such as sanitation, housing, communication, transportation, health care and water; which required the response of people outside the affected community (1).

Infants and pregnant women have unique health concerns after the natural disaster such as Hurricane Katrina. It is estimated that approximately 56,000 pregnant women and 75,000 infants were directly affected by the hurricane (2). One of the previous research suggested that a negative impact on the duration of pregnancy by maternal exposure to acute stress, and this effect may vary by the time of exposure and duration of exposure (3). There are many negative impacts faced by pregnant females after any disaster for example stress leading to many complications, miscarriages, trauma, excessive blood loss due to open injuries, intrauterine growth retardation, fetal displacement/rotation and psychological problems. These problems can cause the death of mother or foetus or both.

It was suspected that high levels of prenatal stress exposure in early pregnancy may have negative effect on brain development of foetus, reflected in the lower general intellectual and language abilities in the toddlers (4). Dermatoglyphic asymmetry of fingertip ridge have more frequent in schizophrenia patients than normal controls and may reflect disruptions in fetal development when fingerprints develop during 14 to 22 weeks of gestation. During the period of fingerprint development, prenatal maternal stress results in greater dermatoglyphic asymmetry in their children especially in the face of greater maternal distress (5).

Maternal exposure to stress results in significant decline in birth weight and an increase in the proportion of low birth weight foetus, exploiting a major earthquake as a source of acute stress. This effect is may be

focused on the first trimester of gestation; it is mediated by reduced gestational age rather than by factors affecting the intrauterine growth of term infants (6)

Problem Statement:

Pakistan faced many disasters in the past for example flood frequently occurs every year by the last two decades, sometime earthquakes also strike, droughts in desert Thar in the province of Sindh and terrorism is common in our country. These disasters impact on humans badly by different perspective like health, sanitation, communication, infrastructure, transportation and water. This study focused the problems faced by pregnant female after any type of disaster. The objective of this study was to preview of health impacts on pregnant females during a disaster

Methodology:

This was the descriptive cross-sectional review study. Annual disaster reports of National Disaster Management Authority Pakistan and Pakistan Red Crescent Society were studied keeping in view objectives of study. After studying these reports, some recommendations were made as reported later in this study.

Review of literature:

Pakistan always remains highly exposed to both natural and manmade disasters because of its geographical and strategic location. Pakistan hit by major disasters that lift devastating impacts in past in every aspect of life as social, economic, physical or political. Natural disasters and some major accidents that occurred in Pakistan in the past are Earth Quakes of 1935 (Quetta), 1974 (Hunza),

2005 (Kashmir); floods of 1950, 1976, 1977, 1978, 1988, 1992, 1998, 2010, 2011 & 2011; Drought 2000, 2010 and Skardu Avalanche (7).

On 11 September 2001, the destruction of the World Trade Center was a source of enormous psychological trauma that may have consequences for the health of fetuses and pregnant females. This report described the impacts on the birth outcomes of extreme trauma of those women who were highly exposed to the world trade centre. Out of 187 women living or working within close proximity to the world trade centre on 11 September and who were pregnant, 52 completed at least one psychological assessment prior to delivery (8).

Those women who were at an increased risk of having low birth weight infants were those who were high hurricane exposure. Exposure to specific severe disaster events and the intensity of the disaster faced may be better predictors of poor pregnancy outcomes rather than a general exposure to disaster (9).

Children had lower full scale IQs, verbal IQs and language abilities those were exposed in uterus to high levels of objective stress as compared to children exposed to low or moderate levels of objective prenatal maternal stress, and there were no significant effects of subjective stress or objective stress on performance IQs (10).

The children are substantially more likely to have emotional or cognitive problems, including an increased risk of anxiety, language delay and attention deficit/hyperactivity if the mother is stressed while pregnant. Maternal postnatal depression and anxiety were not the reason of these effects. As the proportional load of

behavioural or emotional problems due to antenatal stress or anxiety is approximately 15%, so the magnitude of the impacts is clinically significant (11).

The cause of a widespread outbreak of febrile respiratory infection (H1N1) in 2009 in United States of America and worldwide was pandemic. The cases of pandemic H1N1 virus in pregnant women identified in the United States of America during the first month of the outbreak, this virus causes deaths during the first two months of the outbreak (12).

Raised maternal cortisol during pregnancy has some association with maternal stress or anxiety. Because the placenta controls foetal exposure to the maternal environment so it may be a more promising programming vector. Prenatal stress can affect the activity of the placental barrier enzyme 11- β HSD2, which metabolises cortisol which is indicated by animal studies. And this causes some impacts on foetal growth (13).

These and there are many other problems which can be experienced by female population which are affected by disasters. Type and severity of diseases depend upon the time and duration of exposure to the disasters and which type of disasters were exposed. The exposure to any disease or complication during pregnancy not only causes impacts on foetus but it also affects the mother in the form of psychological problems and rest of the family members with different perspectives.

Risk factors:

The major risk factors which affects the pregnant females during disasters are:

- Gender discrimination
- Unavailability of safe food

- Exposed to environmental toxins
- Lack of health care facilities
- Epidemic diseases: endemic diseases common in the affected area
- Living conditions of the affected population including number, size, location, and density of settlements
- Unavailability of clean water and adequate sanitation facilities
- Underlying nutritional status and lack of immunization among the population
- Transportation problems
- Lack of communication system

Preventions:

For the prevention of the problems faced by pregnant females during any type of disaster following steps can be helpful:

- Discourage gender discrimination
- Educate the females to take care their health during pregnancy
- Create an awareness about disasters, mitigation and preparedness steps
- Proper monitoring and take steps to reduce endemic and epidemic diseases common in affected area
- Manage proper living conditions of the affected population according to number, size, location, and density of settlements
- Make sure availability of clean and pure water and adequate sanitation facilities
- Eliminate the problems of underlying nutritional status and immunization coverage among the population
- Provide proper healthcare facilities and effective case management.

Discussion:

Unexpected environmental events cause natural disasters which affect entire communities and are likely to endanger life and property. In addition to causing casualties and economic losses, exposure to natural disasters can precipitate transient and more enduring somatic and psychological symptoms that relate to posttraumatic stress disorder and depression (14).

Exposure to environmental toxins, disruptions in the supply of clean water for drinking and bathing, interruption of health care, inadequate access to safe food, crowded conditions in shelters and disruption of public health and clinical care infrastructure posed threats to these vulnerable populations. These are the problems which cause stress for pregnant women, and it leads to negative impacts on infants during times of natural disasters and provides considerations for those who plan for the response to these incidents (2).

Prenatal exposure to environmental stress may increase risk for Autistic Disorder. It may be describes that significantly increased risk of Autistic Disorder is related to prenatal exposure to stressful life events as well as other disorders such as depression and schizophrenia (15). It may be inferenced that natural disasters adversely affects on reproductive outcomes. Several disasters caused by human factors can be derived such as the Minamata Bay disaster. Congenital malformations, infertility, stillbirths, early pregnancy loss, and serious developmental disabilities such as cerebral palsy and mental retardation are included in adverse reproductive outcomes (16).

In Pakistan, mostly population living in rural areas where the living standards are very low, and education is not preferred. Awareness to expected disasters is very low and gender discrimination is very common. Women do not care their health and not even worry about their children's good future that is why they are to face many problems at different steps in life. One of the major problem is health problem which may be reinforce after exposed to disaster in the case of pregnancy which causes so many complications for women and babies.

Thus, it is recommended to educate women nationwide and aware them about hazards on heads and ready to harm communities. It is said that the education of one female is the education of whole family. We should take serious steps to mitigate the disaster impacts by increasing the coping capacity of our communities. We should train our community to response to any disaster or emergency situation. Detail is mentioned in **Figure**.

Conclusion:

Pakistan is exposed to different hazards due to its geography and climate situation. Catastrophic incidents, both natural and manmade, bring about heavy loss of human lives and livelihoods, damage to property and infrastructure. Such episodes can also aggravate natural processes, such like sudden tectonic movements, which promote earthquakes and tsunamis, resulting in frequent cyclones, continuous dry conditions cause prolonged droughts, severe storms, unexpected heavy rains, excessive snowfalls, floods, landslides, and avalanches, etc. The country is also vulnerable to manmade disasters, for example industrial hazards,

bomb blasts, building fires, armed conflicts and nuclear and radiological events.

These disasters can lead to serious conditions for females who are pregnant. So, this perspective needs government attention. There is also a need to facilitate the females for their child birth; there should be special tertiary care hospitals for obstetrics and gynaecology at district level. Aware the women about the care of pregnancy and promote basic life support trainings at different levels, community base emergency response courses should be conducted.

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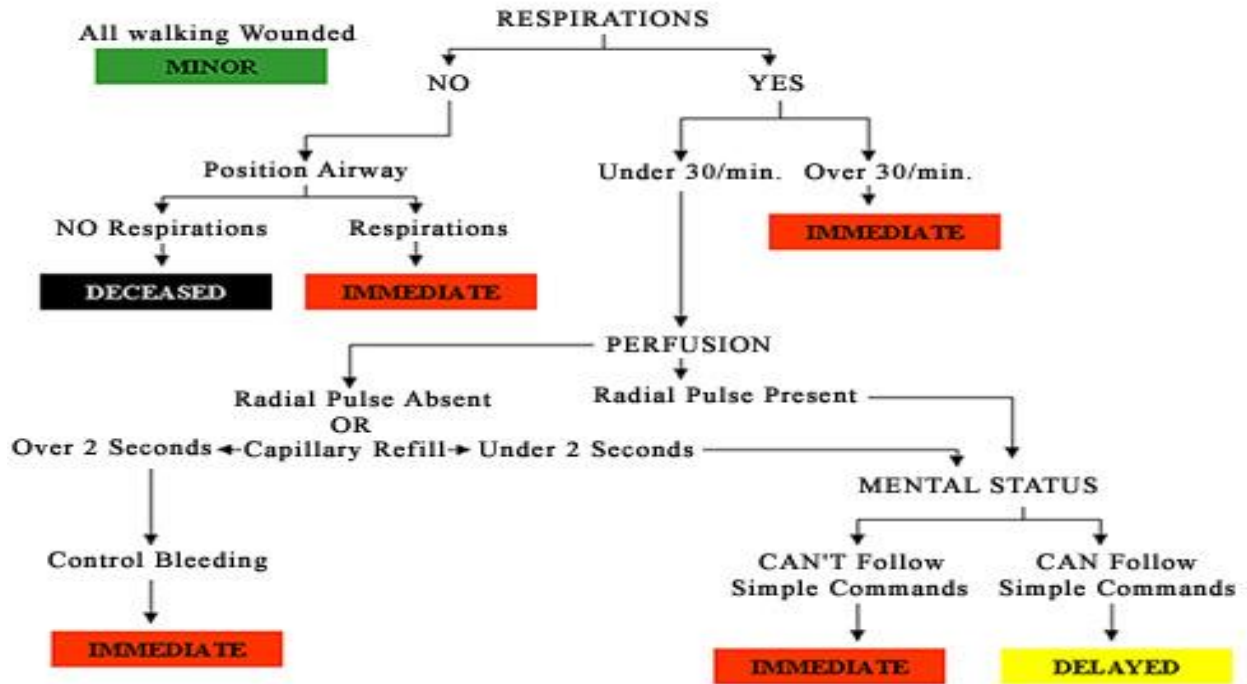


Figure 1. Disaster Triage