# Women's health Aspect In Humanitarian Missions And Disasters: Jordanian Royal Medical Services Experience

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## Abstract

**Objective:** To review women's health problems in patients who presented to Royal Medical Services humanitarian missions over a 3 year period.

**Design and method:** Analysis of humanitarian missions of RMS data and records over three year period (2009-2011) in regards to women's health issues, was done. The data were analyzed in regards to number of women seen, the presenting conditions, and prevalence of domestic violence in these cases.

**Results:** During the 3 year period 72 missions were deployed to 4 locations ( Gaza, Ram Allah -West Bank, Jeneen-West Bank, and Iraq). Total numbers of females seen in this period was 86,436 women accounting for 56% of adults patients seen by RMS humanitarian missions. Acute injuries were responsible for 32% of the cases, chronic diseases for 52% and women's health issues for the rest. Domestic violence was encountered in 11% of the cases. Pregnancy related problems were the main reason for presentation (38%). Contraception was the second reason for seeking help and was seen in 25% of cases.

**Conclusion:** Women's health care providers are needed to advise, assist, and support public health authorities in planning for and serving during a disaster. Emergency preparedness is essential to maintaining healthy pregnancies and ensuring good outcomes for pregnant women and their infants who endure disasters.

**Key words:** women's health problems, humanitarian missions, Royal Medical Services (RMS).

Gender can also place women and men at different risks of disaster. Women suffer in the aftermath of disasters when social networks are frayed, when family and kin are displaced, and when they feel the cumulative effects of caring for others including for men and boys, are not well served by disaster mental health care and facilities.

Examples from previous disaster events demonstrated this gender difference: In 1976, in the technological disaster of Seveso, Italy, the population was exposed to dioxin. Biologic differences between the sexes were seen: 15 years later, more men died of rectal and lung cancer, whereas more women died of diabetes. In the Indian Ocean tsunami in 2004, the ratio of deaths between women and men was 3:1 because men were stronger, women had not learned to swim, and women's long hair got entangled in debris.

In the 1993 earthquake in Maharashtra, India, more women and children died than men because the women were in the homes, whereas the men were out in the fields. Conversely, social roles determined that men were more affected than women during the 1985 Chernobyl disaster. The soldiers and male civilians predominantly cleaned up the site and as a result were exposed to more radiation. Cultural norms have prevented women from seeking help after a disaster, especially in certain regions where interacting with men is strictly forbidden. (2) Social norms have demonstrated that women bear more of the responsibility of caring for children, elderly, and the sick or injured.

Women also face an increased risk of domestic violence: Studies have found that there are many more calls to women's shelters as much as year after an emergency, the aim of this review is to study the effect on disasters on women's health. Royal Medical Services has been involved in more than 100 humanitarian missions over the last 15 years in more than 15 locations all over the world. The aim of this study is to review women's health problems in patients presented to RMS humanitarian missions over a 3 year period.

## Patients and Methods

Analysis of humanitarian missions of RMS data and records over a three year period ( 2009-2011) in regards to women health issues was done. The data were analyzed in regards to number of women seen, the presenting conditions, and prevalence of domestic violence in these cases. During 3 years period 72 missions were deployed to 4 locations ( Gaza, Ram Allah -West Bank, Jeneen-West Bank, and Iraq).

## Results

Total number of females seen in this period was 86,436 women accounting for 56% of adult patients seen by RMS humanitarian missions. Table 1 shows the age distribution of these women, and Table 2 shows the presenting conditions.

**Table 1: Age of women**

| Age | | Percentage % |
|---|---|---|
| 16-20 | | 8 |
| 21-25 | | 14 |
| 26-30 | | 12 |
| 31-35 | | 14 |
| 36-40 | | 19 |
| 41-45 | | 17 |
| 46-50 | | 9 |
| 51-56 | | 7 |

**Table 2: Condition of presentation**

| Condition | Number | Percentage % |
|---|---|---|
| Chronic diseases | 44946 | 52 |
| Women's health conditions | 13829 | 16 |
| Acute injury | 27560 | 32 |

**Table 3: Women's Health condition**

| Condition | Number | Percentage % |
|---|---|---|
| Pregnancy related problems | 5255 | 38 |
| Contraception | 3457 | 25 |
| Menstrual problems | 2904 | 21 |
| Genital infections | 815 | 5.9 |
| Infertility | 165 | 1.2 |
| STD | 290 | 2.1 |
| Others | 940 | 6.8 |

Acute injuries were responsible for 32% of the cases, chronic diseases for 52%, and women's health issues for the rest. Domestic violence was encountered in 11% of the cases. Pregnancy related problems was the main reason for presentation(38%). Contraception was the second reason for seeking help and was seen in 25% of cases. Menstrual related problems were responsible for 21% of cases, and genital infections were responsible for 8% of cases. Among them STD was not prevalent in the women who presented (only 2.1%). Surprisingly infertility problem was the main cause of presentation in 3% of cases.

## Discussion

Pregnant women, newborns, and infants may be disproportionately harmed by natural disasters. The lack of resources, such as food and clean water, lack of access to health care and medications, as well as psychologic stress in the aftermath of disasters increase pregnancy-related morbidities. After Hurricane Katrina, the Centers for Disease Control and Prevention found that the 14 Federal Emergency Management Agency designated counties and parishes affected by the hurricane had a significant increase in the number of women who received late or no prenatal care. In the designated counties in Mississippi, the percentage of inadequate prenatal care increased significantly from 2.3% to 3.3% (3). In Louisiana, among Hispanic women, it increased from 2.3% to 3.9% (3). Infants who were born to pregnant women living within a 2-mile radius of the World Trade Center on 9/11 were found to have a higher rate of intrauterine growth restriction, decreased birth weight, and a small head circumference . In a study that monitored birth outcomes following Hurricane Katrina, women who experienced three or more severe traumatic situations during the hurricane, such as feeling as though one's life was in danger, walking through flood waters, or having a loved one die, were found to have a higher rate of low birth weight infants and an increase in preterm deliveries. Additionally, disruption of the health care system may result in the separation of mothers and infants. For example, during Hurricane Katrina, many critically ill hospitalized infants were transported to medical facilities outside of New Orleans without their mothers. The separation of mothers and their infants can interfere with breastfeeding as well as create additional stress for the mothers.

These pregnancy morbidities can be prevented by developing an emergency plan that addresses them. As providers of women's health care, the involvement of the obstetrician-gynecologist in disaster response is essential. This can be done at the local level through a hospital emergency preparedness committee or a community group attached to the fire department or police department and at the state level.

**Disaster Preparedness for the Health Care System and Providers Caring for Pregnant Women**

Although a "one-size fits all" emergency plan is difficult to apply to all disasters, there are common distresses experienced by all pregnant women regardless of the nature of the disaster. Pregnant women should be encouraged to develop evacuation plans in the event there is enough forewarning to allow for evacuation. The Red Cross provides emergency preparedness checklists for specific disasters. However, when evacuation is not possible, the health care for women in the antepartum, intrapartum, and postpartum periods needs to be safely managed. For women in the antepartum period, maintaining prenatal care is of utmost importance. Health care providers outside the perimeter of the disaster should be willing to accept evacuees in an effort to ensure continuation of prenatal care. State and local governments should establish local facilities where prenatal care and obstetric services can be provided for those women unable to evacuate. Accessing prenatal records is important in maintaining prenatal care. This will be impossible if written records are destroyed because of the disaster or if interruption in electricity prohibits access to electronic medical records. In preparation, clinicians should make patients aware of their specific prenatal issues as well as provide them with key portions of their medical records. This is especially true in areas where natural disasters are seasonal and may be likely to occur. Also, health care providers of prenatal care should increase patients' awareness of the signs of preterm labor and other obstetric emergencies and the action to take in the event of these emergencies.

Obstetric care at a designated facility is ideal, and it is the role of public health officials in an area to designate and equip obstetric care facilities, publicize which facilities in a given area will offer obstetric services, identify alternative safe delivery sites, and arrange for the staffing of the facilities. Individual obstetric care providers are urged to assist public health officials and to practice within the obstetric care system that is established. However, there are several factors that may contribute to difficulty in accessing obstetric health care facilities during a disaster. The health care system may become inundated with other health emergencies, which could decrease the resources available to pregnant women. Also, physical barriers, such as impassible roads, demolished bridges and fire lines, may serve as obstacles to accessing obstetric care facilities. These hindrances may result in women giving birth outside of health care facilities. To prepare, clinicians should make pregnant women who reside in locations subject to seasonal or frequent environmental emergencies aware of the availability of emergency birth kits . These kits have all of the essential equipment necessary should a birth occur outside of a birthing facility.

During a disaster, women who are not breastfeeding may have difficulty in providing food for their newborns. Some new mothers may plan to bottle-feed their newborns. However, during a disaster, there may not be access to clean water for sterilization of bottles or access to formula. Encouraging and establishing breastfeeding as a part of routine care ensures that mothers are able to feed their newborns in the event of a disaster. Additionally, health care providers should be educated in lactation health care to assist new mothers in initiating breast-feeding in the immediate phase of a disaster. For mothers who are less than 6 months postpartum, even if they

have not previously established lactation, relactation can be established and should be encouraged. For those mothers who choose not to begin relactation or are beyond the 6-month period, ready-to-feed infant formula in a single-serving bottle should be provided.

**Disaster Preparedness for the Health Care System and Providers Caring for Nonpregnant Women**

Providing contraception for postpartum and nonpregnant women during a disaster is also important to prevent unintended pregnancies. Contraception should be provided in the form of emergency contraception as well as prophylactic contraception. Providing condoms allows for the prevention of not only unintended pregnancies but also decreases the transmission of sexually transmitted diseases. For women who are using reversible contraception in the form of pills, the ring, or the patch, these prescription medications should be provided to enable these women to maintain their current form of birth control. When possible, emergency health care facilities should stock and dispense a variety of contraceptive products.

**Mental Health Considerations**

Involvement in a disaster situation causes and exacerbates tremendous anxiety, depression, and grief. Post-disaster, patients and health care providers need to be aware of the signs of mental distress requiring medical attention. The Centers for Disease Control and Prevention offers information and resources for mental health care during and after disasters. This can be accessed at http://www.bt.cdc.gov/mentalhealth/.

**Prevention of Violence Against Women During a Disaster**

Women are subjected to and vulnerable to intimate partner violence and sexual assault during disasters (9, 10). Similar to the conditions found in refugee camps where sexual violence also is increased, during the phases of a disaster women are isolated from their families and without physical protection. The United Nations Refugee Agency, in developing guidelines for prevention and response to sexual violence against refugees, has identified some contributing circumstances: 1) male perpetrators' dominance over female victims, 2) psychologic strains in refugee camps, 3) absence of support systems for protection, 4) crowded facilities, 5) lack of physical protection, 6) general lawlessness, 7) alcohol and drug abuse, 8) politically motivated violence against refugees, and 9) single females separated from male family members (5). Ironically, these same circumstances existed among the Hurricane Katrina evacuees and were likely responsible for the many personal accounts of rape that occurred in evacuation shelters. Establishing safety, order, and the rule of law in shelters for disaster survivors is paramount to the protection of women from sexual assault. In the event that sexual violence does occur, appropriate and sensitive services should be available to victims, including emergency contraception and sexual assault forensic examiners or sexual assault nurse examiners.

## Conclusion

Disasters are unplanned but can be anticipated. Emergency preparedness is essential to maintaining healthy pregnancies and ensuring good outcomes for pregnant women and their infants who endure disasters. Developing an evacuation plan is the first step. However, if evacuation is not possible, identifying local health care facilities that can provide obstetric care, discussing the availability of emergency birth kits, and emphasizing the importance of lactation are key steps to facing the many challenges of a disaster that are unique to pregnant women. Postpartum and nonpregnant women must have access to contraception. Women's health care providers are needed to advise, assist, and support public health authorities in planning for and serving during a disaster. Clinicians also should encourage local and state governments to provide shelters that are safe and secure to prevent violence against women.

## References

1. Toner E, Waldhorn R, Franco C, Courtney B, Rambhia K, Norwood A, Inglesby TV, O'Toole T. Hospitals Rising to the Challenge: The First Five Years of the U.S. Hospital Preparedness Program and Priorities Going Forward. Prepared by the Center for Biosecurity of UPMC for the U.S. Department of Health and Human Services under Contract No. HHSO100200700038C. 2009.
2. Women and Infants Services Package (WISP), from the National Working Group for Women and Infant Needs in Emergencies, White Ribbon Alliance. Accessed March 24, 2008 from ; http://www.whiteribbonalliance.org/Resources/Documents/WISP .Final.07.27.07.pdf.
3. Hamilton B, Sutton P, Matthews TJ, Martin J, Ventura S. The Effect of Hurricane Katrina: Births in the U.S. Gulf Coast Region, Before and After the Storm. National Vital Statistics Report. Vol 58, No 2.
4. Callaghan W, Rasmussen, S, Jamieson D, Ventura S, Farr S, Sutton P, Mathews, T, Hamilton B, Shealy K, Brantley D, Posner S. Health Concerns of Women and Infants in Times of Natural Disasters: Lessons Learned from Hurricane Katrina. Maternal and Child Health Journal. 2007; 11(4): 307-311.
5. Lederman SA, Rauh V, Weiss L, Stein JL, Hoepner LA, Becker M, et al. The effects of the World Trade Center event on birth outcomes among term deliveries at three lower Manhattan hospitals. Environ Health Perspect 2004;112:1772-8.
6. Xiong X, Harville E, Mattison D, Elkind-Hirsch K, Pridjian G, Buekens P. Exposure to Hurricane Katrina, Post-Traumatic Stress Disorder and Birth Outcomes. Am J Med Sci 2008 August; 336(2): 111-115. doi: 10.1097/MAJ. 0b013e318180f21c.
7. American Red Cross, "Preparedness Fast Facts: Emergency-Specific Preparedness Information". Copyright 2009. The American National Red Cross. http://www.redcross.org/portal/site/en/menuitem.86f46a12f382290517a8f210b80f78a0/?vgnextoid=92d51a53f1c37110VgnVCM100
8. La Leche League International, "When an Emergency Strikes Breastfeeding Can Save Lives, Part 2," media release, September 1, 2005. Accessed October 3, 2006 from http://www.lalecheleague.org/Release/emergency2.html
9. United Nations High Commissioner for Refugees (UNHCR). Prevention and Response to Sexual and Gender-Based Violence in Refugee Situations. Proceedings of the Inter-Agency Lessons Learned Conference, Geneva (March 27-29, 2001). Available at: http://action.web.ca/home/cpcc/attach/prevention%20and%20responses.pdf
10. Thornton, W., Voigt, L. "Disaster Rape: Vulnerability of Women to Sexual Assaults During Hurricane Katrina." Journal of Public Management & Social Policy. Fall 2007.