Chapter 2

Key Theoretical Concepts for The Study
In this chapter, the relevant literature related with the study has been reviewed. These literatures further lay the foundation for building up appropriate theoretical approach required for the purpose of the study, as well in identifying suitable methods and study design. In a way, there has been an attempt to identify the anthropological approach to study the disaster situation and to explore how the social construct like ‘gender’ and social phenomenon such as ‘domestic violence’ together interact with each other in the context of disaster.

2.1 ANTHROPOLOGY AND DISASTER RESEARCH:

Anthropology offers several theoretical directions for disaster studies. Social science in general and anthropology in particular has undertaken the challenge of studying disaster long back ago. Disaster research started as a war science and since then, it has moved on to other fields such as technological and natural disasters (Anderskov, 2004). Anthropology as a holistic discipline includes several important concepts in its perspective on disasters, such as: (1) diachronicity, adaptation, and evolution; (2) the comparative nature of affected units including both micro and macro levels; and (3) the vulnerability and resilience of individuals and groups that are affected (Glittenberg, 2004). Hoffman (1999) points out that disaster are instigators of essential change. She concludes that through anthropological research it is possible to gain a greater understanding of the basic socio-cultural structure of a group in crisis, as deep cultural values and norms are exposed and made explicit (Hoffman, 1999).

Further elaborating upon the concept of diachronicity, adaptation and evolution; Glittenberg points out towards the conditions and processes adopted by populations to manipulate and use physical and social surroundings for their benefit such as making shelter, developing subsistence methods, evolving social institutions, and use of power, which are some processes that develop slowly over time in ways that have an adaptive ecological “fit”. But during the rapid shift in conditions such as in flood or earthquake, those adaptive environments are destroyed and that immediate change is
critical for survival. With comparative nature, Glittenberg highlighted the holistic approach of anthropology as he stated ‘Comparative nature of anthropological research is an important perspective as the nature and scale of physical events and socio-cultural disruptions vary at the micro and macro levels of different social groups. Understanding the social forces at these levels can aid in understanding differential responses to catastrophe. The holistic nature of anthropology allows for comparison, analysis, and explanation of variation in response to a similar disastrous event’. Finally, describing the third perspective, he emphasized on the study of consequences of any disastrous event, *Vulnerability and resilience* are characteristics that are key to understanding the consequences of disasters. These characteristics can be identified at the individual, household, and community levels and the factors that contribute to these states of being include physical, cultural, political, and economic conditions. As Zaman (1999) points out, the vulnerability of a social system to natural disaster is determined by complex socio-economic characteristics of a population that are not merely the physical or natural factors alone (Zaman, 1999:208). Thus, the perspective of anthropology in viewing the patterns of society that promote vulnerability is important as it permits finding ways to resolve the disaster by countering vulnerability and/or building resilience.

Despite great interest in the field of disaster among other fractions of social science, anthropological contribution to disaster research until the 1980s has been rather insignificant. Oliver-Smith and Hoffman (2002) argue that anthropological participation in disaster research remained low throughout the 1950s due to general anthropological focus on normality and continuity as prescribed in the structural-functionalist framework. In other words, mainstream anthropology focused on everything except disasters as they were perceived as abnormal isolated events "...a particularistic and functionalist emphasis on the construction of cultural profiles based on the ethnography of normal, daily life precluded addressing the issues of disruption and change that disasters represented" (Oliver-Smith and Hoffman, 2002:4-5). However, scholars engaged in disaster research agreed upon that the early anthropological contributions which came about more by chance than by an actual focus on disaster as a research object *sui generis* (Anderskov, 2004).
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The new theoretical developments that influenced disaster research in the 1980s had its roots further back in theoretical history, namely to the 1970’s new theoretical frameworks of structural Marxism and political economy (Ortner, 1984). In relation to disaster research, however, the most important element that those frameworks reintroduced to anthropological enquiry was the concept of history (Ortner, 1984). The concept of history was evoked to explain how societies changed and evolved with the arrival of capitalism and/or modern state structures (Anderskov, 2004). Contrary to cultural ecology's primary focus on nature as the variable for adaptation and also through the concept of history, a disaster was no longer seen as a purely natural phenomenon but rather a social phenomenon and a historical process. By focusing on the social and treating disaster to be a phenomenon that was essentially a historic process, rather than an isolated event, the concept of power became central to disaster enquiry during the 1980s (Anderskov, 2004).

During 1980s, there was a strong debate regarding the nature of disaster. Hewitt (1983) argued that most hazards would never even lead to disaster if it was not a fact that certain societies or segment of societies were vulnerable to disasters due to an array of human development. Human actions are based in the social realm; therefore the causes of disaster should be sought there. Thus, he emphasized on the concept of social in the concept of disasters. The concept of Hewitt was taken forward by Blaikie et al. (1994). Though Blaikie et al. (1994) in line with Hewitt (1983) place the cause of disasters more within the social realm than within the natural realm, they take a more comparative stance as they propose that it is possible to talk about a spectrum of causation. Some disasters are placed in the natural end and some in the social end of the spectrum depending on the context of each specific disaster process (Anderskov, 2004). They explicitly draw on the concept of history as an explanatory factor to unwrap the root causes of people's vulnerability and thereby of disasters (Blaikie et al., 1994). According to them, a disaster consists of three interrelated factors; hazard (H), vulnerability (V), and risk (R). These three factors relate to each other via the equation R = H + V, which is the definition of a disaster.

**Hazard:** A hazard is the physical agent in a disaster. A hazard can be forecasted via probability studies. However, the statistical likelihood of a given hazard to occur says
very little of the actual level of risk a given society or segment of a population is subjected to.

Risk: The risk concept is somewhat more problematic as it is hard to separate it analytically from the concept of disaster as "risk is a compound function of this complex (but knowable) natural hazard and the number of people characterized by their varying degrees of vulnerability who occupies the space and time of exposure to extreme events" (Blaikie et al., 1994:21).

Vulnerability: People's vulnerability, which is perceived to derive from a spectrum of historical processes, was already invented as a concept in relation to disaster research during the late 1970s, and it focuses on the various ways in which social systems operate to generate disasters by means of making people vulnerable (Blaikie et al., 1994:11). With these three interrelated factors hazard, vulnerability, and risk; a conceptual tool has been developed that can be used both for descriptive analysis of disaster, as explanatory model, and as research framework (Blaikie et al., 1994). The model is called the Pressure and Release Model (PAR-model). It consists of a series of vulnerability creating processes on one side and natural or man made hazards on the other side of the model. “The basis for the pressure and release model (PAR) is that a disaster is the intersection of two opposing forces: those processes generating vulnerability on one side, and physical exposure to a hazard on the other. The image resembles a nutcracker, with increasing pressure on people arising from either side - from the vulnerability and from the impact (and severity) of the hazard on those people at different degrees of vulnerability. The "release" idea is incorporated to conceptualize the reduction of disaster: to relieve the pressure, vulnerability has to be reduced” (Blaikie et al., 1994:22).

The model works as a "nutcracker"; in case of induced pressures on either side of the model, the risk of a disaster increases. Blaikie et al. (1994) divide the three vulnerability-creating processes into three interrelated and causal phases, which they define as the progression of vulnerability. The three phases are: Root Causes, Dynamic Pressures and Unsafe Conditions. On the hazard side of the PAR-model, various hazards with significance for a particular geographical area are listed such as:
Floods, Drought, Pest attack, Human modification of the rivers (Anderskov, 2004). (See fig. 2.1).

Further stressing upon the relevance of PAR model, Oliver Smith and Hoffman argued that despite their different foci areas and methodological approaches trends are all inter-related via the underlying PAR-approach to the concept of disaster (Oliver Smith and Hoffman, 1999).

The disaster setting is considered a “unique laboratory” or a “strategic site” in which we learn about social phenomenon, examine social relationship and reveal social problems (Barton, 1970). Disaster studies provide rich data for addressing basic questions about social organization, its origin, adaptive capacity and survival (Kreps, 1984).

2.2 GENDER AND DISASTER

Despite of the recognition that disaster is a social phenomenon and it is rooted in the structure of society, one of the basic components of social structure i.e. Gender, remains underdeveloped in disaster literature. Often a gender-neutral position was adopted and thereafter male oriented approach existed. Women’s role, experience and
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suffering were a marginalized issue (Fordham, 1998:126). Gender awareness and sensitivity in disaster research and management remain uncommon; tend to focus on the developing rather than developed world (Fordham, 1998). The shift to gendered perspective was late in coming and in the last decade gender perspective gained momentum in disaster theory. The gender and disaster literature, which has been steadily growing over the past decade, has highlighted the way in which a significant proportion of disaster planning, management and research overlooks gender, despite recognition within social sciences generally that there exists a gendered dimension to the responses to any social event (Cupples, 2007). Consequently, there is an acknowledged need to mainstream gender within disaster planning, management and research, as well as to take advantage of the windows of opportunity that are opened up (see, for example, Peacock, Morrow and Gladwin, 1997; Enarson and Morrow, 1997; 1998; Enarson, 1998; Fordham, 1998). Despite the fact that natural disaster impact women differently and disproportionately than men, earlier research on disaster were male oriented if not male dominated. Increased globalization and change in social scenario inspired to focus on the gender issue (Fothergill, 1996). In the last several years however a lively discussion on the importance of gender in disaster research has emerged and set the stage for an exciting research agenda that has put women at the center of the inquiry (Fothergill, 1996). In last decade authors such as Wiest, Mocellin and Motsisi (1994) have advocated a gendered analysis of disaster management and response. The differential experience of disaster for men and women with women particularly vulnerable to the impacts was highly recognized during those periods. Commonly cited reasons are the economic marginalization of women and their unequal access to resources, women’s responsibility for domestic duties which increase and are more difficult in times of disaster, and women’s role as the primary care providers for children, the elderly and sick (Fischer, 2005). Women also have specific reproductive health needs and are more vulnerable to gender based violence (WHO, 2002).

After recognizing that natural disaster has differential impact across gender researches started focusing on the issue of women’s vulnerability. It was found through various researches that women’s overall vulnerability is rooted in their subordinate status in
both the family and society at large. Economic, social & political reasons make different groups of people vulnerable in different ways. Those particularly vulnerable include low-income women & widows, pregnant women & those belonging to marginalized social and cultural groups (Enarson, 2000).

While women and children’s vulnerability had been acknowledged there has been little engagement with the underlying social causes, and the associated inequalities in terms of power and resources. Also argued was the need to appreciate how women rather than being helpless victims posses valuable strengths and capacities that should be utilized during disaster management. Overall it is argued that gender must be a consideration of every aspect and stage of disaster management and women must be equal participants in all policy, planning, implementation and decision making (Byrne and Baden, 1995).

This has received some recognition in the international realm. Despite the recognition, gender perspective in disaster management have not become mainstream and frequently cited reason is that in the “tyranny of the urgent”, gender consideration and overall good practice can be neglected (Bradshaw, 2004). The greatest challenge then is to overcome this, and to use disaster management to actually benefit long-term goals of gender equality rather than have them undermined by short-term goals during emergency relief (OXFAM GB, 2004).

2.2.1 Theoretical Approaches for Studying Gender and Disaster

According to Enarson et al., (2006) there is no single theoretical orientation for disaster research on gender. In discussing the dominant theoretical framework which guided gender disaster research, they began with the Social vulnerability approach which was used earlier by most of the researcher (see, Hewitt, 1997; Balakie, Cannon, Davis and Wisner, 2004). Social vulnerability approach assumes that disasters are fundamentally human constructs that reflect the global distribution of power and human uses of natural and man made environment. Disaster risk is socially distributed in ways that reflects the social division that already exist in society. It also inspires many researchers to investigate specific structural sources to vulnerability related to
sex and gender, from reproductive health and gender violence to land rights and poverty (Enarson and Morrow, 1998).

The second approach according to Enarson et al is Socio-political ecology perspective, used by Peacock, Gladwin and Morrow (1997) in their edited book on Hurricane Andrew which focuses on interaction of human systems, physical environment and all of social systems. From this perspective, social systems are no more gender neutral than they are race neutral (Enarson and Morrow, 1997).

The third approach discussed by Enarson et al. is Feminist political ecology perspective. It examines gender relations in specific environmental contexts with an emphasis on women’s practical environmental knowledge and the nexus of gender inequalities, environmental degradation, and disaster vulnerability (Rocheleau, Thomas-Slayter, Wangarai, 1996).

Further they also emphasized the role of Feminist theory in gender and disaster study. Enarson and Phillips argued that disaster sociology and feminist theory worked well together and should forge an even closer relationship as they use similar concepts like social power, privilege, vulnerability, dominance, empowerment, political economy and social change and equally embrace global, interdisciplinary, and practice oriented inquiry with libratory intent (Enarson and Phillips, 2008). Additionally, Enarson et al. emphasized the role of socialist feminism, post-modern feminism, multiracial feminism and eco-feminism, liberal feminism and gender and development theory in understanding the disaster risk aspects.

2.3 GENDER BASED VIOLENCE (GBV) OR VIOLENCE AGAINST WOMEN (VAW) AND NATURAL DISASTERS:

In the disaster and emergency preparedness field, researchers have identified populations which are more vulnerable to the negative impacts of disasters and are often marginalized and excluded from disaster preparedness, planning, response and recovery processes (Shety, 2012). As the gender analysis and research of disasters has grown, an increasing awareness has surfaced of women’s vulnerability to and experiences of violence after disasters (Shety, 2012). Natural disasters do not exist in
isolation from the social and cultural constructs that marginalize women and place them at risk of violence. Violence against Women is a global menace, which cuts across the entire social, cultural, geographic, religious and economic boundaries. It has also been noted that the incidence VAW usually prosper in the aftermath of disaster, as there is complete disorganization and absence of structure. Violence should not be understood in conventional manner, being only physical, sexual or emotional as it extends beyond that. “All human beings are born free and equal in dignity and rights”. – Universal Declaration of Human Rights (United Nations, 1948: Article 1). Above quoted statement clearly points towards the rights and dignity of human being, but one of the major issue which is violating the above Declaration is the issue of “Violence Against Women”. Violence against women is a global menace and it is recognized as a major public health concern and a violation of human rights (Population Report, 1999).

In 1993 the United Nation offered the first official definition of VAW, when the General Assembly adopted the Declaration on Elimination of VAW. According to that VAW includes “Any act of gender based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life” (The Women’s Health Council, 2007:3). This declaration reflects that the issue of VAW can be best understood within a ‘gender’ framework and the reason for such an approach is rooted in the subordinated status of women’s and girls in society.

In feminist scholarship one of the most widely recognized cause of VAW is gender inequality and dominant social attitudes about women, which underpin power inequalities between men and women (Fischer, 2005). Studies also points that, it is by the use of violence especially domestic violence by which men assert power over women and ensure that women remain in law status position prescribed by society.

Studies of post-disaster violence rates are few and are mainly from the U.S.A (WHO, 2002). In fact there is evidence that violence against women increases in the wake of disasters and that the increased risk is associated with gender inequality and the
limited representation of women in disaster responses (Enarson 2000, OXFAM 2005). The incidence of violence against women is found to be significantly high in the South Asian region (Coomaraswamy 2005, UNIFEM & UNICEF 2004). The consequences of VAW are seen to affect all aspects of the everyday life of the woman, especially her health (UNIFEM 2003, WHO 2001, 2005). Few studies have compared violence levels before and after a disaster and conclusion drawn was that even a non-violent relationship can result in violence, whereas it is likely to increase in an already violent relationship (Wiest, Mocellin & Motsisi, 1994; Fordham, 1999; Enarson, 2000). However, literature specifically focusing on the issue of post-disaster violence is extremely scarce and the only widely available detailed research is by one author, Elaine Enarson (Fischer, 2005). Enarson’s findings from research in North America point to increased domestic violence following multiple natural disasters in the U.S. & Canada (Enarson, 1998) and the findings from Nicaragua also suggests increase VAW following Hurricane Mitch (Solorzano and Montoya, 2000). While there are significant challenges in measuring the prevalence of gender-based violence, especially in a disaster context, several studies indicate a significant and substantial increase in gender-based violence that occurs following disasters and often persists at exceptionally high levels for years past the event (Anastario, Lawry & Shehab, 2009; Clemens et al., 1999; Houghton, 2009; Houghton et al., 2010; Schumacher et al., 2010, In: Shety, 2012).

Increase in the domestic Violence levels have been reported in the Phillippines after the Mt. Pinatubo eruption, in the U.S.A. after the Loma Prieta earthquake and the eruption of Mt. Saint Helens (WHO, 2002). Gender based violence is referred to by Bradshaw as a, ‘second generation disaster’ with women in the aftermath, vulnerable to rape and sexual harassment is isolated and unsafe in temporary shelters and relief camps (Bradshaw, 2004:20). Stress, emotional impacts and changes to traditional gender role can also lead to increased household conflict and violence (Enarson, 2000).

VAW has profound physical and psychological impacts. GBV can be fatal, causing death and suicide and can result in sexual trauma, unwanted pregnancy, sexually transmitted infection and emotional and psychosocial disorder. There are also
negative social outcomes such as stigma, shame and social seclusion (WHO, 2005). Violence also impedes women’s mobility, impacting upon their ability to obtain food, water and other necessities and search for economic opportunity (UNFPA, 2005).

2.4 DISASTER AND DOMESTIC VIOLENCE

The phenomenon of domestic violence is not new but it has been there in our society from centuries. It is the by-product of patriarchal set up which has been the usual form of family in the society. The women have always been subjected to the male domination and somehow learnt to live like that. The women have accepted their fate of subordination since very long. The situation is changing now but the change has been witnessed only in certain pockets of urban areas, where the women have spoken against it. Studies have also reported that women with greater autonomy, higher educational level, and control over economic resources are more protected against violence (Jewkes et al., 2002). In rural areas, the cases of domestic violence are much more and even it goes underreported because rural women are apprehensive and relatively less vocal when personal and intimate issues are discussed. Moreover, the act of violence is even given legitimacy by deeply rooted tradition. The male domination has been institutionalized and structurally strengthened in such society in a way that it has been difficult for women to free themselves from such oppression. Over few decades, violence against women in developing countries has emerged as a growing concern among researchers and policy makers interested in women’s health and empowerment and have found out that women in these countries are vulnerable to many forms of violence, domestic violence being the most common form. (Koenig et al., 2006).

The cases of domestic violence are prevalent not only in normal circumstances but also in the aftermath of natural disaster. In post disaster situation, where there is a threat to the existence of society, its very survival, the major responsibility comes to be shared by women. They have to come out of their own psychological trauma and contribute the most in family’s survival, but still they are the one, who are subjected to the traumatic experience of domestic violence. Enarson’s findings from research in North America point to increased domestic violence following multiple natural disasters in the U.S. & Canada (1998) and the findings from Nicaragua also suggests
increase VAW following Hurricane Mitch (Solorzano and Montoya, 2000). Other than Enarson, some of the work which documented the incidence of domestic violence in the aftermath of disaster are, Fothergill study on the Grand Forks flood disaster; 1999, Rosalind Houghton study on ‘Agency Perspective on Domestic Violence and Disasters in New Zealand’; 2010, Jenkins and Philips study on Hurricane Katrina; 2008, and Wilson, Philips and Neal’s study on Domestic Violence after Disaster in U.S.A, 1998. These works suggest that a woman most commonly encounters violence in the home setting and that the perpetrator is most often, the husband. Few studies have attempted a comparison between violence levels before and after disaster and conclusion drawn was that, even a non violent relationship can result in violence, whereas it is likely to increase in an already violent relationship (Wiest, Mocellin and Motsisi, 1994; Fordham, 1998; Enarson, 2000).

Rates of non-intimate partner sexual assault have shown a sharp increase in the first year after a disaster, followed by a somewhat rapid decline (Anastario, Lawry & Shehab 2009). Stress, emotional impacts and changes to traditional gender roles can lead to increase household conflict and violence (Enarson, 2000).

### 2.4.1 Trend in the Study of Domestic Violence after Disaster

Prior to 2000, only few studies conducted in the US and Canada had specifically attempted to document the increase in domestic violence after disasters and the impacts from disasters on victims, workers and organizations. These early studies were part of a wider movement to acknowledge the role of gender in disaster preparedness, experience, response and recovery (Shety, 2012). They focused primarily on general organizational response and victims’ housing needs. The main responses identified for victims after three disasters in the 1990s in the US addressed housing and counseling needs (Wilson, Phillips & Neal 1998). A decade later has seen growth internationally in awareness and exploration of violence against women post-disasters, though often with a focus on sexual assault and/or developing countries. However, study in New Zealand by Houghton, is an example of domestic violence post-disasters in developed country. This more in-depth research has provided further evidence to document the increase in domestic violence reporting
and service demands after a disaster, and has improved our understanding of the
dynamics of post disaster domestic violence and the needs of victims (Shety, 2012).

### 2.4.2 Domestic Violence across the World

It is difficult to make accurate cross-cultural estimates of DV as only a few countries
have attempted a nationwide accounting. But the data that do exist give cause for
concern (Heise, 1993:172).

- In 2002, approximately 1.8 million women were assaulted by their intimate
  partner in Spain (UNFPA, 2007).

- In 2000, UN report estimated that on average 5 Indian women a day were killed
  or maimed by accidental kitchen fires by husband or in laws whose dowry
  disputes were not met (UNFPA, 2007).

- According to the NCRB’s publication Crime In India 2006, the all India conviction
  rate for cases of cruelty by husbands and relatives is estimated as 21.9%.

- DV is the leading factor of death, disability and illness among women aged 15-
  44 in Victoria State, Australia (UNFPA, 2007).

- In a US National Survey, 22% of women reported having been physically
  assaulted by a male intimate partner in their life time. (UNFPA, 2007)

- In a detailed family planning survey of 733 women in the Kissi district of
  Kenya, 42% said they were beaten regularly by their husbands  (Heise, 1993)

- A statistical survey conducted in a Mexico city, found that one in three women
  had been victims of family violence (Heise, 1993 )

- A study using children as informants reported that 57% of wives in Sal Salvador
  were beaten by their husbands (Heise,1993)

- National survey conducted to find percentage of women who were ever
  physically assaulted by an intimate partner found following results: Barbados
  (30%), Canada (29%), Egypt (34%), New Zealand (35%), Switzerland (21%),
  US (22%). Philippines and Paraguay report figures as low as 10%. (Centre For
  Health and Gender Equity.1999)
2.4.3 Theoretical Perspective on Study of Domestic Violence

A number of explanatory models have been postulated to explain violence within the family. Initially, intra-personal models focused on theories of violence originating in the psychological abnormalities of the perpetrator, frustration because expectations about family members are not met, or the result of dysfunctional familial relationships. In contrast, socio-cultural models emphasize social structure, norms, and values as causal variables in the emergence of family violence. For example, the socio-learning approach to violence emphasizes the influence of such variables as occupational status and parent modeling. In particular, gender-sensitive approaches emphasize gender roles and expectations and the devaluation of women’s work inside and outside the home as crucial to understanding family violence (INCLEN, 2000).

The ecological model combines these various elements in a systematic manner. This model is based on the understanding that domestic violence is the result of a combination of social and individual factors, and can best be visualized as four concentric circles. The innermost circle represents the biological and personal history that each individual brings to relationships. The second circle represents the immediate context in which abuse takes place, the family and/or intimate relationship. The third circle represents the formal and informal institutions and social structures in which relationships are embedded—neighborhoods, workplaces, social networks, and peer groups. The fourth and outermost circle is the economic and social environment, including cultural norms. These last two circles combine to include such things as socioeconomic status and education level. In the ecological model, violence is usually associated with more than one factor and is not narrowly characterized by specific behaviors but encompasses the range of physical, emotional, and psychological behaviors that can harm an individual in the home (INCLEN, 2000).

In a situation like disaster the role of PAR model in understanding the dynamics of domestic violence in post disaster context is well elaborated by Houghton. In PAR model Wisner et al uses three levels to explain the risk created by social, cultural, political and economic structures, which are ‘root causes’, ‘dynamic pressure’ and ‘unsafe conditions’ (Wisner et al., 2004). According to Houghton, PAR model
provides the framework to explain why domestic violence reporting may increase during disaster. In the words of Houghton,

“Domestic violence is one of the dynamic pressures that the root cause patriarchy creates. During disasters, domestic violence becomes more visible placing violence in the view of those it is normally hidden from. The model also explains the way in which domestic violence places its victims at a level of higher risk from natural disasters than those who are not subjected to it. Domestic violence is a dynamic pressure that creates a number of unsafe conditions. These conditions include isolation, a heightened level of fatalism in both victims and perpetrators, and lack of access to resources, to social support networks and to communication media. All of these conditions are very common in cases of domestic violence, and all put the women (and children) that are subjected to domestic violence at a greater level of risk during disasters (Houghton, 2010:266).”

2.5 HEALTH AND DISASTER

The health and disaster literature can be broadly divided in to three categories, one which talks about physical health in general or specifically addressing reproductive health needs among women, in general or even focusing on particular disaster. The other one comes in the category of psychological health in the after math of disaster (Norris et al., 2002; Norris et al., 2004; Carr, V. J. et al., 1997; Shannon, 1994). In this, post-traumatic stress disorder (PTSD) is the most commonly studied and probably the most frequent and debilitating psychological disorder that occurs after traumatic events and disaster (North, Nixon, Shariat, 1991) including stress, anxiety and depression. The third part of literature on health and disaster is public health issues related to disasters, including morbidity mortality, and spread of communicable diseases following a disaster. (Noji, 1997a and Noji, 1997b).

General health issues: Health issues have been discussed in general and also in specification to particular type of disaster. Freedy and Simpson, has divided physical health problems common in post disasters situation into four categories: (1) acute injuries; (2) acute problems; (3) chronic problems; and (4) medically unexplained physical symptoms. More than one half of acute post-disaster health issues are
illnesses (e.g., self-limited viral syndromes, gastroenteritis). Approximately one fourth of acute post-disaster health complaints are injuries (e.g., cuts, abrasions, sprains, fractures). Other acute post-disaster health issues include routine items such as medication refills, wound checks, and splinting (Centers for Disease Control and Prevention, 2005).

Somatic complaints without organic cause, sometimes described as medically unexplained physical symptoms, are common following a disaster (Freedy and Simpson, 2007). These unexplained symptoms also are associated with mental health problems such as depression, PTSD, and other anxiety disorders (Van et al., 2005).

Flood specific problems are that seasonal floods cause increased incidence of diarrheal diseases, respiratory infections, dermatitis, and snake bites. The risk of compromised water supplies depends on the condition of the community’s water supply before the disaster (Disease Control Priorities Project, 2007). Prolonged flooding endangers local agriculture and sometimes means large-scale food assistance will be needed. The primary health concerns are overcrowded living conditions and poor water and sanitation in temporary settlements and other areas where services have deteriorated or are suspended (Disease Control Priorities Project, 2007). Disease control priorities project has identified both short-term and long term health impact of disaster. The above mentioned problems lie within the short term impact of flood. The health sector bears a significant share of the long-term economic burden from disasters. “The health burden of disasters includes damage to housing, schools, channels of communication, and industry. Damage to hospitals, health facilities, and water and sewage systems have the biggest impact on health. The long-term health burden includes loss of medical care, interruptions in the control of communicable disease and other public health programs, and loss of laboratory support and diagnostic capabilities of hospitals. A common misperception is that the damage to critical health facilities is promptly repaired, but experience shows that damaged health infrastructure recovers at a slower pace than other service sectors, such as trade, roads, bridges, telecommunications, and housing. Damage to water and sewage systems can also have a great impact on health. In severe flooding, the sudden interruption of these services coincides with the direct effect on the transmission of
water-borne or vector-borne diseases (Disease Control Priorities Project, 2007).” Summarizing the effect of flood on health, PAHO/WHO in *Natural Disasters: Protecting the public health*, reports:

“Slow-onset flooding causes limited immediate morbidity and mortality. A slight increase in deaths from venomous snakebites has been reported, but not fully substantiated. Traumatic injuries caused by flooding are few and require only limited medical attention. While flooding may not result in an increased frequency of disease, it does have the potential to spark communicable disease outbreaks because of the interruption of basic public health services and the overall deterioration of living conditions. This is of concern particularly when flooding is prolonged, as in the case of events caused by the El Niño phenomenon in 1997 and 1998.”(PAHO/WHO, 2000:8)

Psychological problems: Studies of disaster conducted by psychologists and psychiatrists have tended to focus on the question of the severity of the impact a disaster might have on individual and community mental health (Green et al, 1985). Researcher have also examined the mental health effects of particular type of disaster like earthquake, flood (see Kar et al\(^1\), 2004; Irene Van Kamp et al, 2006\(^2\); Telles, S et al\(^3\), 2009 ).Acute post-disaster psychological distress includes emotional liability; negative emotions; cognitive dysfunction and distortions (e.g., reduced concentration, confusion, unwanted thoughts or memories); physical symptoms (e.g., headaches, tension, fatigue, gastrointestinal upset, appetite changes); and behaviors that negatively affect interpersonal relationships e.g., irritability, distrust, withdrawal, being overly controlling (Freedy and Simpson, 2007). For most persons, acute psychological distress will resolve within weeks to several months, but it can persist for up to one year. More severe new-onset mental health problems can occur, with the presentation ranging from obvious to subtle (Freedy and Simpson, 2007). The most common post-disaster mental health problems appear to be depression, PTSD, and other anxiety disorders (Norris et al, 2004) Increases in alcohol or drug abuse and domestic or interpersonal violence also have been noted (Norris et al, 2002). With

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\(^1\) Kar et al studied mental health consequences of the trauma of super cyclone 1999 in Orissa.

\(^2\) Irene Van Kamp et al studied physical and mental health in Enschede, The Netherlands fire work disaster in 2000.

\(^3\) Shirley Telles et al studied PTSD and Depression in survivors of flood in Bihar, 2008
regard to mental health responses to disaster victims, preexisting condition of hardship due to lower socio-economic and/or gender status can become greatly enhanced throughout the disaster experience from preparation to recovery (Bolin, 1988; Quarentelli, 1985).

Public health issues in disaster: An epidemiological perspective is considered valuable within disaster research because such work can focus directly on prevention of adverse health effects through the analysis of existing warning system, and the prediction of probable health outcomes (Noji, 1997b). According to Davis, emergency public health intervention aims to mitigate the adverse health effects of natural and man-made disasters by providing the basic minimum requirements for healthy life (Davis, 1996). Such interventions must often be made within a short period of time, despite a scarcity of information and limited capacity for planning (Tobin et al, 2001). Studies have also shown that the health problems created in emergency situation are fairly consistent, differing only in terms of severity of the event and the coping capacity of the affected population (Davis, 1996). A public health approach to disaster risk management should focus on decreasing the vulnerability of communities through prevention and mitigation measures and increasing the coping capacity and preparedness of the health sector and community (Disease Control Priorities Project, 2007).

2.5.1 Gender and Health Issues in Disaster

Disasters are traumatic events that are experienced by many people and may result in a wide range of mental and physical health consequences (Norris, Friedman, Watson, et al., 2002). The resulting impacts from disasters are frequently more severe on women and girls than those of their male counterparts and women’s physical, reproductive and mental health needs, along with other facets of women’s lives, have largely been ignored in the whole process (Laska et al., 2008). According to WHO, there is pattern of gender differentiation at all level of disaster process: exposure to risk, risk perception, preparedness, response, physical impact, psychological impact, recovery and reconstruction and there is evidence showing that women and men may suffer different negative health consequences after the disaster (WHO, 2002). However, it is not clear whether this is due to biological differences between the
sexes, because of socially determined differences in women’s and men’s roles and status or because of the interaction of social and biological factors (WHO, 2002).

Following the disaster the adverse reproductive health outcomes have also been reported, including early pregnancy loss, premature delivery, still births, delivery related complications and infertility, like in Israel a study reported an increase in delivery rates during the 48 hours following an earthquake and a significant increase in premature delivery rate (WHO, 2002). Further, social taboos around menstruation and norms about appropriate behaviour for women and girls are reported to contribute to health problems in young women in disaster situations (WHO, 2002).

Differences between women and men in the nature of psychological impact of disaster have also been reported (Norris et al, 2002, Norris et al 2004, Carr VJ et al, 1997). Several studies have found greater proportion of women and girls report suffering from emotional disorders and distress, as compared to men and boys (WHO, 2002). Female sex, lower social support and being older were associated with higher post disaster psychological distress after 1989 Australian earthquake (WHO, 2002). A survey of children affected by the 1995 Great Hanshin Awaji earthquake showed that girls were more heavily affected by trauma and that being female was a higher risk factor for distress. Women’s dramatically expanded care-giving roles following a disaster, and putting family needs before their own, may explain overall decline in emotional well being (WHO, 2002).