

# Changes in Crime Rates Against Women and Children Post-Disasters

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A concerning trend of increased crime, particularly violence, against survivors of disasters has been consistently documented in literature.<sup>1</sup> This phenomenon becomes notably intensified when scrutinizing the incidence and patterns of crime amongst the most vulnerable demographics, namely women and children. This is driven by a myriad of significant bio-psychosocial, cultural, and political factors that uniquely affect these groups in the during and after phases of these disasters. These include pre-existing biological vulnerabilities and heightened psychological trauma. Additionally, interpersonal stressors, displacement, and entrenched patriarchal community norms contribute to an erosion of the social ecology. Furthermore, bureaucratic and political complexities exacerbate the breakdown of conventional legal systems.<sup>2</sup>

In fact, recognizing the gravity of this critical issue, many agencies in India and abroad have undertaken policy changes and resource-building programs to address gender-sensitive disaster issues affecting women and girls in the aftermath of disasters.<sup>3</sup> However, considering the implications of this issue on society, it is very concerning that this area has been significantly under-researched. Given India's susceptibility to disasters, it is alarming that there are only a few studies which have investigated this issue, quantitatively demonstrating a significant increase in interpersonal violence post-disaster, as well as qualitatively describing a range of issues including human trafficking, denial of basic rights, violence, abuse, sexual exploitation, and increased mortality.<sup>4,5</sup>

We employed a methodology similar to that utilized in our previous paper comparing suicide rates pre- and post-disaster.<sup>6</sup> Specifically, we conducted a secondary data analysis, comparing crime rates against women and children two years before and after each disaster. Data were sourced from the annual "Crime in India" reports published by the National Crime Records Bureau (NCRB; New Delhi, India), which details annual national and state-wise crime rates against women and children.<sup>7</sup> The rationale for selecting the natural and human-induced disasters and the years for comparison was as explained in our previous paper.

However, due to insufficient data, comparisons could not be made for the following natural disasters: the Latur Earthquake (1993), Orissa Super Cyclone (1999), Gujarat Earthquake (2001), Kashmir Earthquake (2005), and Bihar Floods (2007), as well as the following human-induced disasters: the Bhopal Gas Tragedy (1984) and Gujarat Riots (2002). We analyzed the data using paired sample t-tests to compare the differences in crime rates against women and children before and after the selected disasters.

The results, as summarized in Table 1 and Table 2, indicate a general upward trend in crime rates against women and children. However, statistical significance was not observed for post-disaster increase in crime rates against women; whilst in crime rates against children, significant increase was only observed in a few disasters: specifically, the Uttarakhand Floods of 2013 ( $P = .03213$ ) and the Economic Recession of 2008 ( $P = .01079$ ).

A recent meta-analysis found that 20%–30% of female survivors experienced violence after disasters, with studies also showing a fourteen-fold higher risk of death among females compared to males post-disaster.<sup>4,8</sup> Similarly, another systematic review revealed that children suffered significant poly-victimization, experiencing multiple types of abuse post-all kinds of disasters.<sup>9</sup> However, like our findings, a few studies have found no significant increases in rates of violence and crime against women and children post-disasters. Multiple theories have been proposed for this phenomenon, ranging from a strong sense of

No.	Event	Crime Rate Against Women (No. of Cases per One Lakh Women Midyear Population)		t	P Value
		Before (Mean, SD) (Data Retrieved from Years)	After (Mean, SD) (Data Retrieved from Years)		
<b>Natural Disasters</b>					
1	Tamil Nadu Tsunami, 2004 <sup>a</sup>	14.25 (SD = 0.35)	11.6 (SD = 2.40)	1.359	.4039
2	Andaman & Nicobar, 2004 <sup>a</sup>	6.5 (SD = 0.84)	7.4 (SD = 2.40)	-0.81818	.5635
3	Maharashtra Drought, 2013 <sup>a</sup>	37.385 (SD = 10.62)	51.2 (SD = 5.09)	-3.5287	.1758
4	Uttarakhand Floods, 2013 <sup>a</sup>	27.84 (SD = 8.96)	27.8 (SD = 0.56)	0.006734	.9957
5	Kerala Floods, 2018 <sup>a</sup>	58.85 (SD = 1.90)	58.9 (SD = 5.37)	-0.020408	.987
6	COVID 19 India <sup>b</sup>	60.6 (SD = 2.54)	71.55 (SD = 9.97)	-1.2373	.4327
<b>Human-Induced Disasters</b>					
7	Kargil War 1999 <sup>b</sup>	13.65 (SD = 0.21)	14.05 (SD = 0.07)	-2	.2952
8	Economic Recession 2000 <sup>b</sup>	13.95 (SD = 0.21)	14.05 (SD = 0.07)	-1	.5
9	Economic Recession 2008 <sup>b</sup>	14.75 (SD = 2.19)	17.7 (SD = 0.42)	-1.5946	.3566

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**Table 1.** Crime Rate Against Women Pre- and Post-Disaster

<sup>a</sup> State Data.

<sup>b</sup> National Data.

No.	Event	Crime Rate Against Children (No. of Cases per One Lakh Children Midyear Population)		t	P Value
		Before (Mean, SD) (Data Retrieved from Years)	After (Mean, SD) (Data Retrieved from Years)		
<b>Natural Disasters</b>					
1	Tamil Nadu Tsunami, 2004 <sup>a</sup>	0.45 (SD = 0.21)	0.45 (SD = 0.07)	-2.7756e-16	1.000
2	Andaman & Nicobar, 2004 <sup>a</sup>	2.65 (SD = 1.48)	2.2 (SD = 0.14)	0.47368	.7184
3	Maharashtra Drought, 2013 <sup>a</sup>	13.23 (SD = 5.54)	29.1 (SD = 6.36)	-4.1984	.1489
4	Uttarakhand Floods, 2013 <sup>a</sup>	4.7 (SD = 1.97)	14.6 (SD = 2.68)	-19.8	<b>.03213</b>
5	Kerala Floods, 2018 <sup>a</sup>	41.8 (SD = 5.23)	46.4 (SD = 6.36)	-0.56098	.6745
6	COVID-19 India <sup>b</sup>	32.5 (SD = 0.98)	31.25 (SD = 3.32)	0.75758	.5873
<b>Human-Induced Disasters</b>					
7	Kargil War 1999 <sup>b</sup>	0.55 (SD = 0.07)	0.8 (SD = 0.42)	-0.71429	.6051
8	Economic Recession 2000 <sup>b</sup>	0.5 (SD = 0.00)	1.05 (SD = 0.07)	-11	.05772
9	Economic Recession 2008 <sup>b</sup>	1.9 (SD = 0.148)	2.2 (SD = 0.141)	-59	<b>.01079</b>

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**Table 2.** Crime Rate Against Children Pre- and Post-Disaster

<sup>a</sup> State Data.

<sup>b</sup> National Data.

community spirit and social support that aids in making the community more resilient, to deficiencies in proper reporting mechanisms and infrastructure, inefficient policing, stigma surrounding reporting crimes (especially violent sexual assaults), offenders being relatives, and inadequate study designs.<sup>10,11</sup>

Despite the increase in crimes against vulnerable groups, there are insufficient data systematically documenting the unique perspectives involved in these processes. Disasters present unique circumstances wherein, on one hand, there are violations of rights in the form of abuse, societal restrictions, and denial of basic personal rights. On the other hand, there are compromised living situations, wide-spread job loss, and disruptions in socio-economic and personal roles, disproportionately affecting women and children. This often led to conditions where crimes are overlooked

to maintain superficial harmony. These traumatic circumstances particularly contribute to a high prevalence of psychiatric comorbidities among survivors, as evidenced by studies on disaster situations showing elevated rates of psychological distress persisting for years post-disaster. This underscores the need to establish safeguarding mechanisms not only to ensure the rights of these groups, but also to provide on-going psychosocial support.<sup>2</sup>

Our study encountered similar limitations as our previous study,<sup>6</sup> including data being collated from annual reports, combining both natural and human-induced disasters (which have significant differences in the rates, types, and patterns of crime), as well as probable variations due to the comparison of state-level and national-level data. Additionally, for many disasters, relevant crime data were unavailable, necessitating their exclusion.

However, the collective findings from our current and previous studies underscore the necessity to assess the country's crime reporting systems and establish more robust mechanisms to mitigate potential under-reporting.<sup>6</sup>

Furthermore, we have observed a consistent trend of increased, albeit not significant, crime against women and children following disasters. This underscores the importance of conducting systematic studies to evaluate the psychosocial impacts, types, and patterns of crimes perpetrated. Such research

would guide future policy decisions, highlighting the importance of establishing well-informed psychosocial support networks at the community level and reinforcing legal services, particularly for these vulnerable groups. The overarching objective is to mitigate abusive experiences and uphold the fundamental rights of these vulnerable groups during such exceptional circumstances.

No ethical conflicts were encountered during the course of this study.

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