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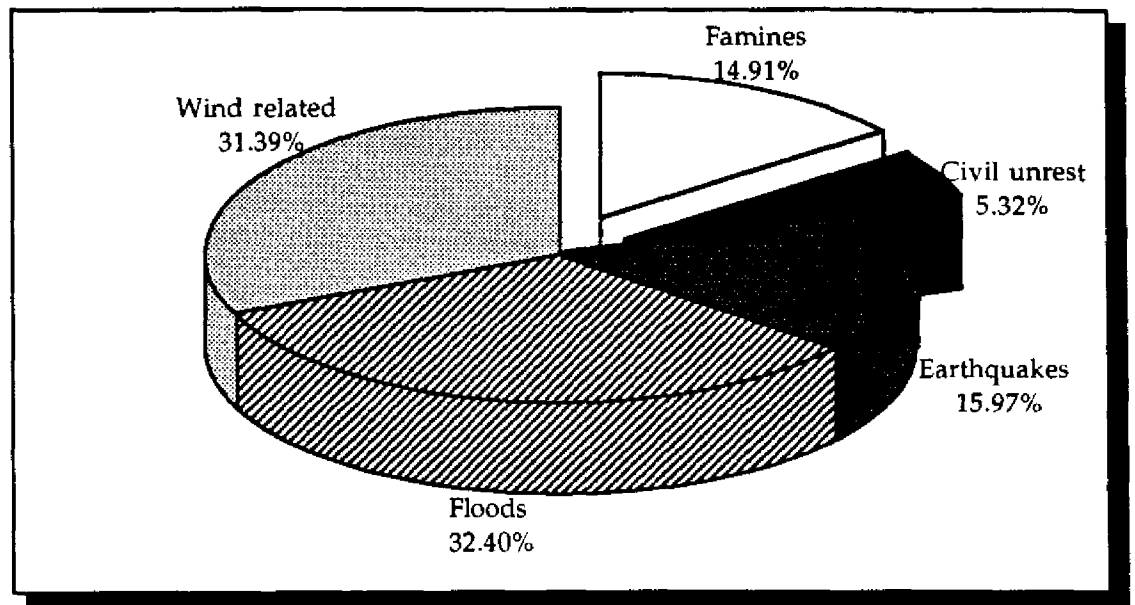
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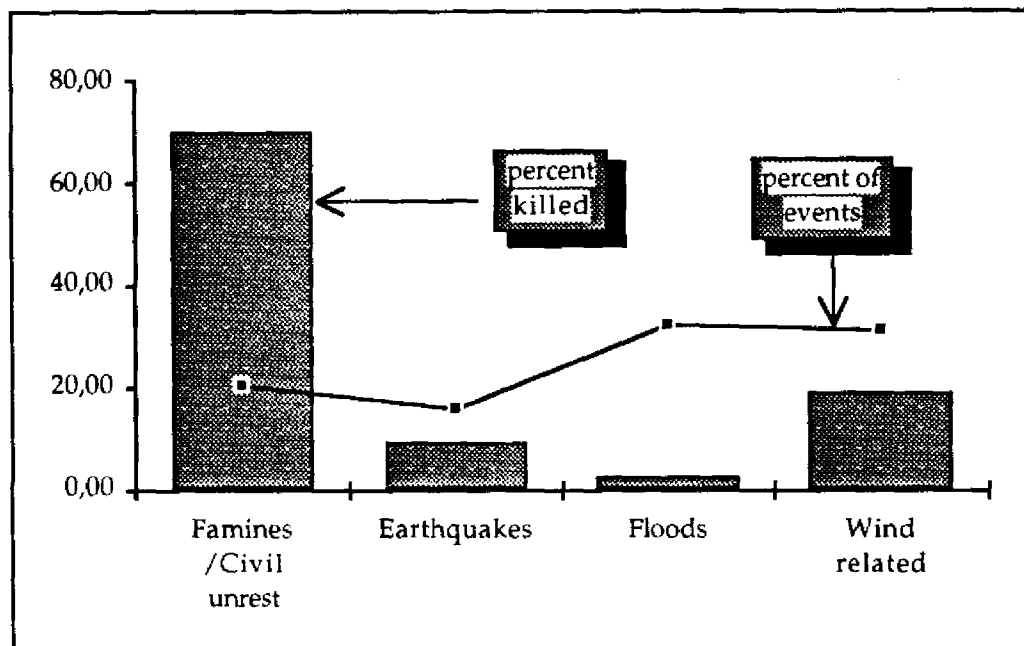
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**Figure 1**  
**Percent distribution of disasters by type, 1960 - 1989**



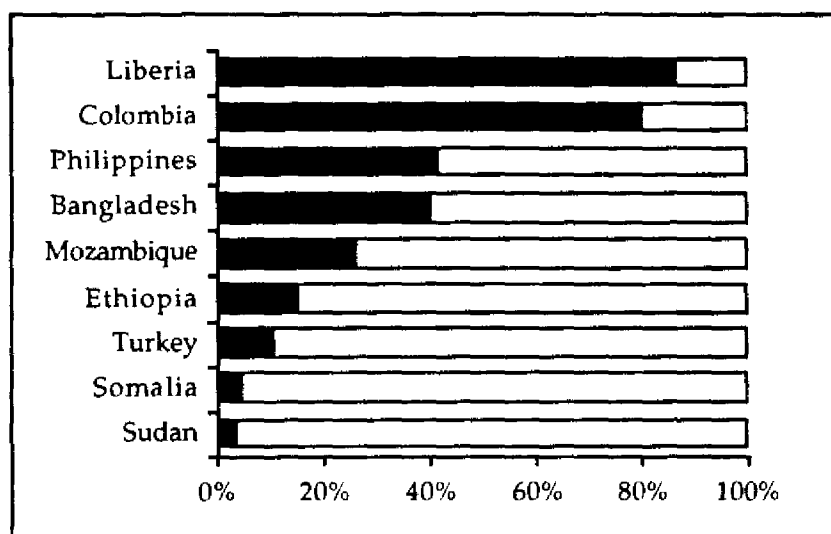
Source: EM-DAT database, WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED), Brussels

**Figure 2**  
**Distributions of disaster mortality and type as proportion of category**  
**total, 1960 - 1989**



Source: EM-DAT database, WHO Collaborating Centre for Research on Disaster Epidemiology (CRED) Brussels, 1993

**Figure 3**  
**Health expenditure as percent of military expenditure\***  
**in countries most affected by natural and man-made**  
**disasters 1983 - 1992**



\* Data from 1986

Source: Human development report, UNDP 1991

Figure 4  
Malaria epidemic following hurricane Flora, Haiti, October 1963

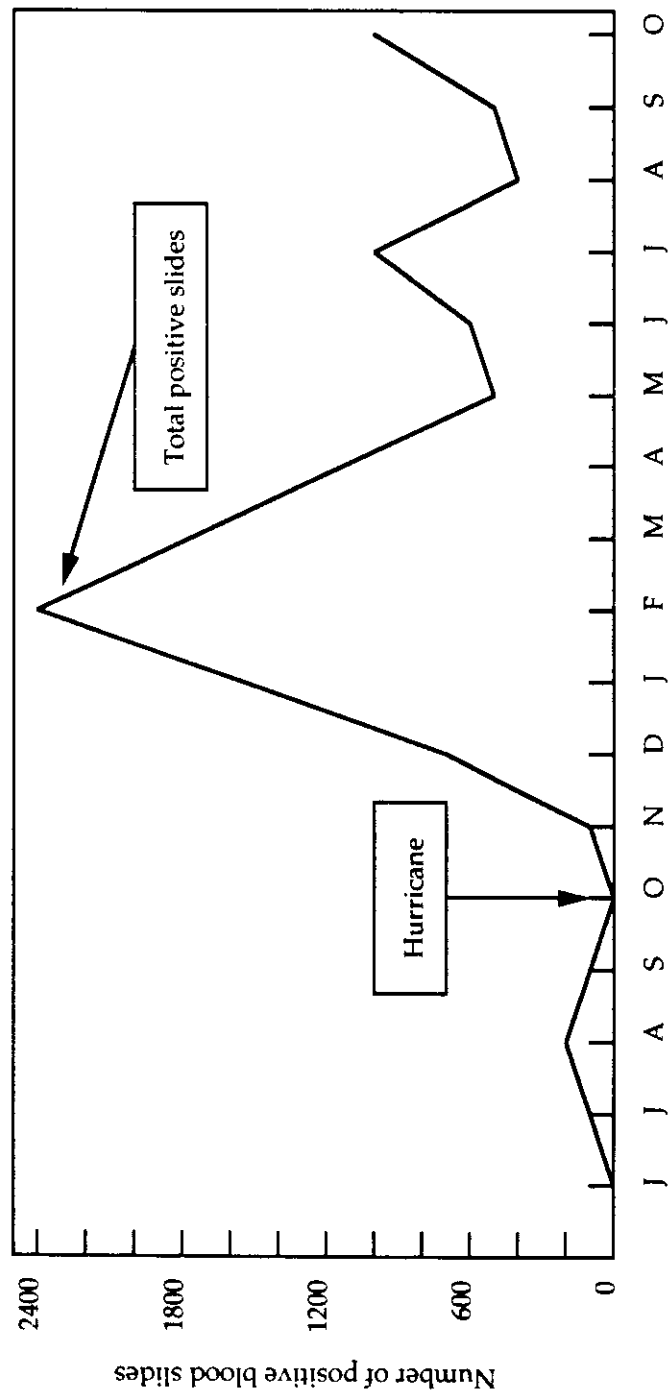
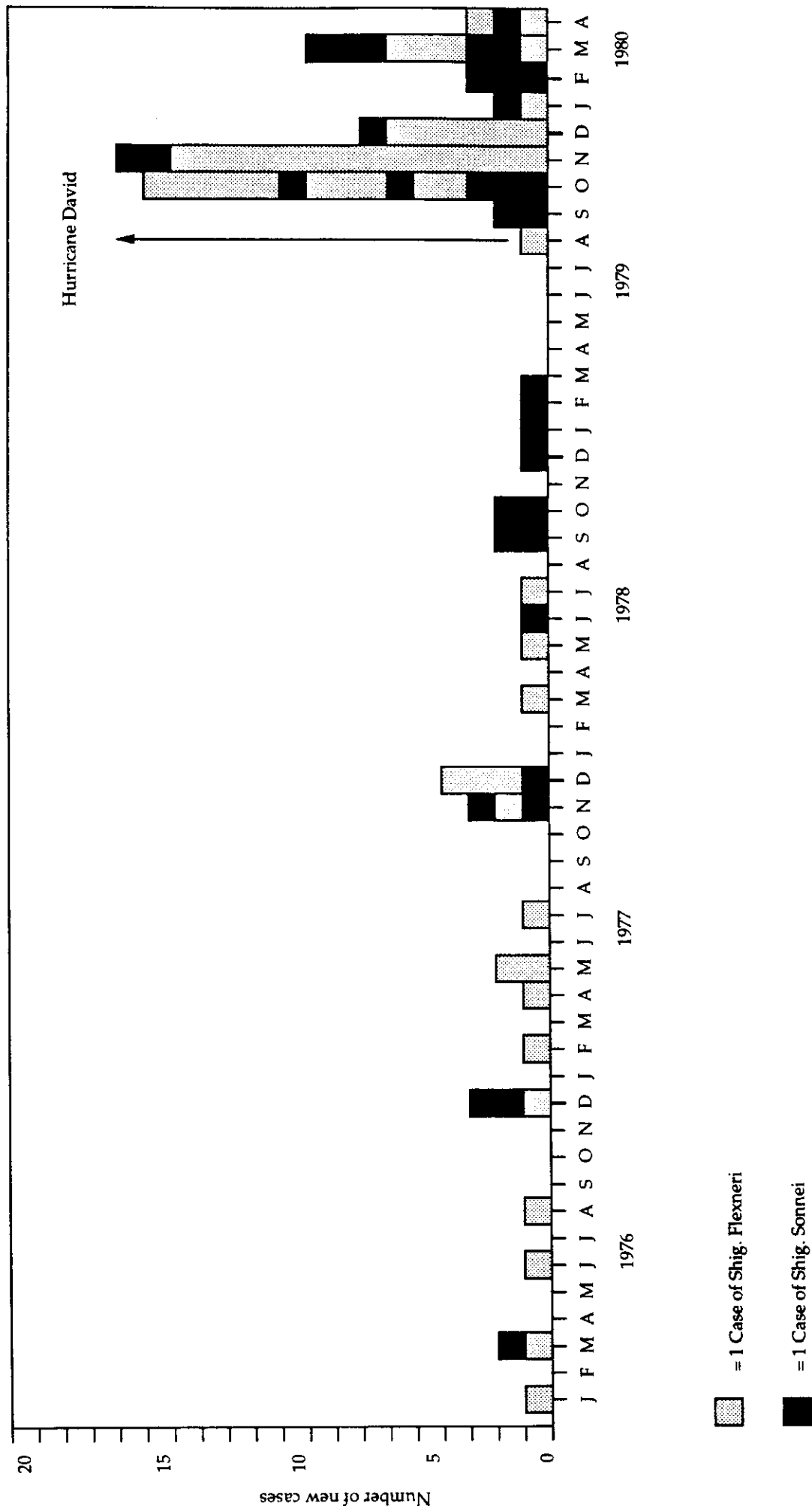


Figure 5  
Incidence of reported new cases of dysentery, Dominica (Hurricane David, 1st August 1979)



**Figure 6**  
**Age specific mortality, Sumpango earthquake, Guatemala, 1976**

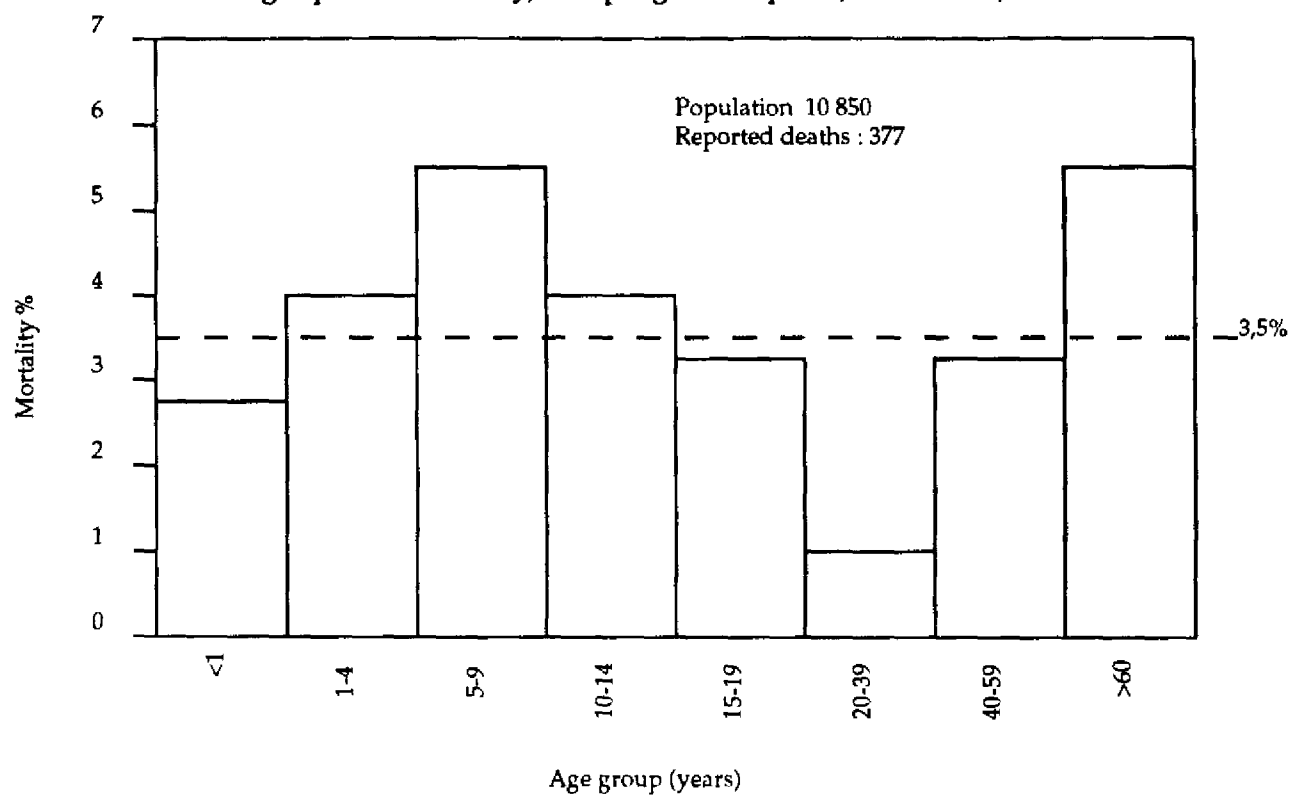
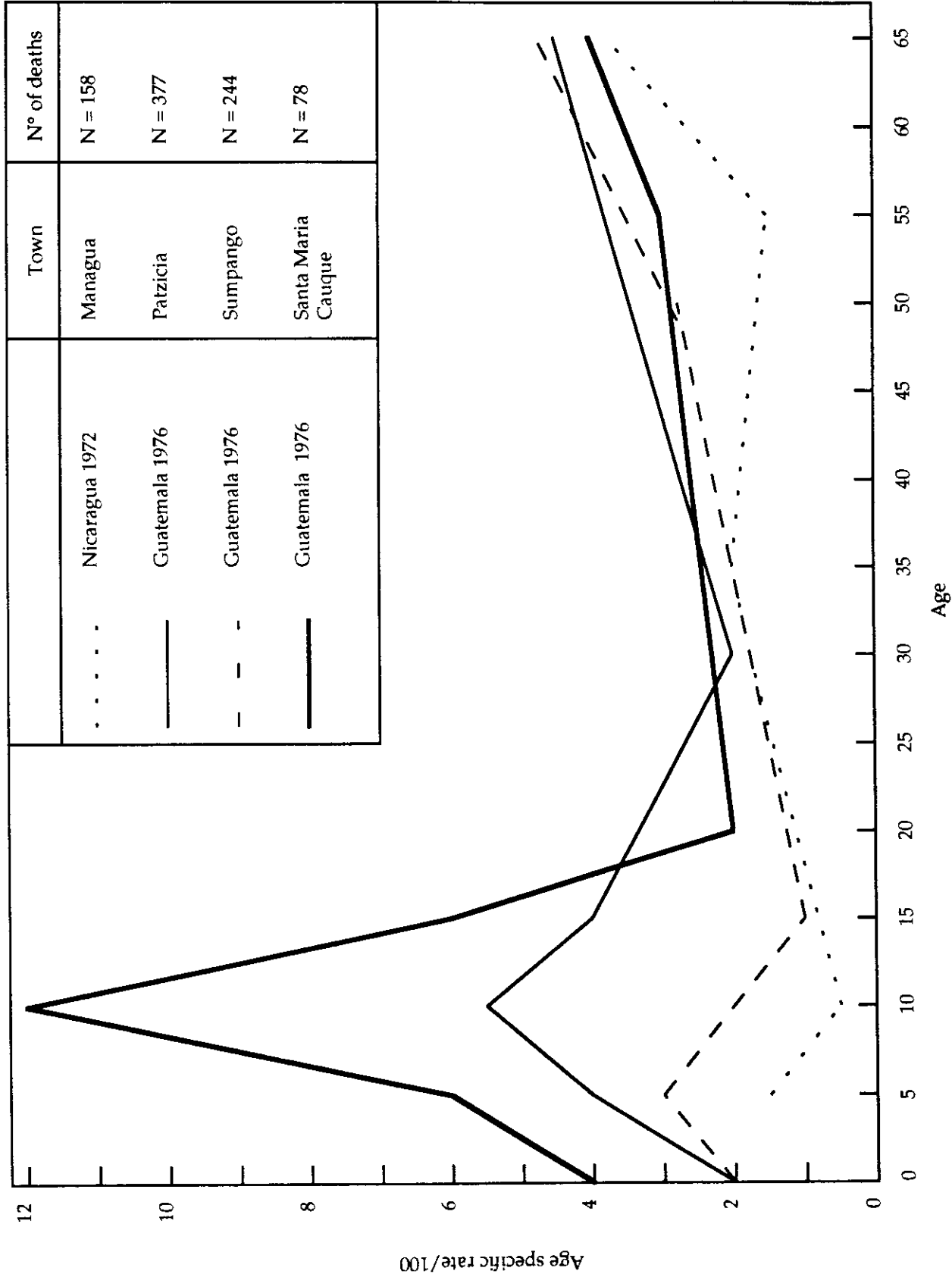


Figure 7  
Age specific mortality rates during two earthquakes (Nicaragua 1972 and Guatemala 1976)





**Table 1**  
**Comparison of characteristics of earthquakes in Managua, Nicaragua**  
**(1972) and San Fernando Valley, California (1971)**

Disaster characteristics	Managua	San Fernando Valley
Richter scale reading	5.6	6.6
Extent of destruction (Mercalli Range VI - VII)	100km <sup>2</sup>	1 500 km <sup>2</sup>
Population in affected area	420 000	7 000 000
Dead	5 000	60
Injured	20 000	2 540

Source: Seaman, 1984

**Table 2**  
**Distribution over last three decades of total affected population**  
**by type of disaster**

Type of Disaster	1960 - 69	1970 - 79	1980 - 89	Total 1960 - 1989 (number in millions)
Floods	5.4	30.0	64.5	100 (71)
High wind	12.5	24.9	62.6	100 (192)
Earthquake	8.0	31.8	60.8	100 (44)
Civil strifes and famines	7.5	31.8	60.7	100 (598)
Others	5.7	5.3	89.1	100 (90)
Total	7.2	29.9	62.9	100 (1643)

**Table 3**  
**Indicators affecting vulnerability of populations to disasters for selected countries**  
**at high risk of disasters**

COUNTRIES AT HIGH RISK	Child mortality rate/1000 live births, 1989	Maternal mortality rate/100000 livebirths, 1980 - 87	Health expenditure as % of GNP, 1986	Military expenditure /education and health, 1986	Arms imports (US\$ mills, 1987)	GNP growth rate 1980 - 1988	Standardised mortality index*	Population affected by disasters (1966- 1990) Rank order
Bangladesh	184	600	0.6	79	10	0.8	4.12	1
Ethiopia	226	-	1.3	172	1,000	-1.4	15.88	2
Iran	64	-	1.4	333	5,600	-	2.78	8
Iraq	89	50	0.8	711	1,500	-	NA	10
Liberia	209	-	1.9	35	10	-5.2	NA	7
Mozambique	297	-	1.8	-	120	-7.5	17.50	4
Philippines	72	93	0.7	55	40	-2.4	0.56	3
Somalia	218	110	0.2	71	20	-2.2	5.52	6
Sudan	175	660	0.2	140	50	-4.2	8.34	5
Turkey	90	210	0.5	148	925	3.0	0.46	9
LDC average	116	290	1.4	109		3.8		

\* The index was calculated by dividing the number of dead by the mid period population of the country x 10,000 to reflect the loss of capital as a proportion of the nations human resource

Source: UNDP Human Development Report, 1991  
CRED Em-dat database, Brussels

**Table 4**  
**Selected disasters with large numbers of**  
**unaccompanied children**

Year	Disaster event	Estimated no. of unaccompanied children
1915	Armenian Massacre	132,000
1919	Russian Famine and Revolution	800,000
1936	Spanish Civil War	90,000
1939	World War II	13,000,000
1948	Greek Civil War	37,500
1950	Korean War	100,000
1954	Tibetan Refugees	2,000
1954	Vietnam War	880,000
1956	Hungarian Revolt	6,000
1960	Cuban Revolution	17,000
1970	Nigerian Civil War	100,000
1970	Bangladesh Cyclone and Tidal Wave	7,000
1970	Bangladesh War of Independence	400,000
1972	Famine in Ethiopia	2,000
1975	Vietnam Refugee Exodus	22,000
1975	Laotian Refugees	2,000
1979	Cambodian Crises	11,000

**Table 5**  
**Sex differences in the prevalence of malnutrition in**  
**children in famines in Africa and Bangladesh**

	Males	Females	Sex ratio
<b>Bangladesh</b>			
Mean energy intake	809	694	86
Mean protein intake	23.0	20.2	88
No. visits for diarrhoea treatment/1000 pop. of each sex	136	82	60
<60% W/A	5.1	14.4	282
<75% W/A	54.8	59.6	109
<85% H/A	16.7	34.8	208
<90% H/A	26.2	32.7	125
<b>Burkina Faso</b>			
<80 % W/H	12.1	18.9	163
<b>Ethiopia</b>			
<80% W/H	3.8	6.1	138

Adapted from: Rivers, 1982

**Table 6**  
**Comparative mortality rates of infants and children from studies in**  
**situations of civil strife and famine**

	Sample size	< 1	1 -4	< 5	15 - 44 All ages <sup>†</sup>	Source
<b>Mozambique</b>						Cliff et al, 1988 <sup>1</sup>
Gaza	629	40.0	90.0			
Inhambane	358	233.0	125.0			
Manica	210	83.0	80.0			
Tete	972	172.0	95.0			
<b>Thailand</b>						Toole et al , 1988 <sup>2</sup>
Nov. 1979	NA	10.7	7.6		2.2	
<b>Sudan</b>						Toole et al , 1988 <sup>2</sup>
Camp D	NA	5.6	23.8			
<b>Somalia</b>						Toole, et al, 1988 <sup>2</sup>
NW Camps, Sept. 1980	NA	27.0	14.0		2.6	
Baidoa, Apr- Nov. 1992	62			32.0	16.8 <sup>†</sup>	Moore et al, 1993 <sup>2</sup>
Afgoi (urban) Apr-Nov, 1992	211			10.4	4.7 <sup>†</sup>	
Afgoi (rural), 1989	NA			117.1		Persson et al, 1993 <sup>1</sup>
Merca/Qorioly, April, 1992						Manoncourt et al <sup>1</sup> 1993
Resident	442			115.4		
Displaced in camps	586			240.6		
Displaced in towns	232			86.2		

1 Rates expressed as deaths per 1000 per year

2 Rates expressed as deaths per 10,000 per day

**Table 7**  
**Mortality related risk factors among children of famine affected households**  
**by displacement status (Batha province, Chad 1985)**

Risk factor	Non - displaced	Displaced		Total
		Permanent	Temporary	
Vaccination coverage.				
Measles	22.4	4.4	9.6	8.7
BCG	20.1	2.2	10.5	9.1
Wt/Ht < 80% of reference	12.7	20.0	11.9	12.2

**Table 8**  
**Nutritional status of famine affected children <110 cm by main family occupation**

Wt/Ht % of WHO standard	Nomads	Cultivators	Salaried workers	Artisan and service providers
> 100	12.0	10.3	4.8	9.5
90 - 99	28.7	34.2	35.5	30.3
80 - 89	46.0	44.5	48.4	35.4
< 80	13.3	11.0	11.3	24.8



**Table 9**  
**Summary of losses and damages from Bangladesh cyclone**  
**29 April 1991**

Districts affected	19
Upazillas affected (Sub-districts)	102
People affected	10,798,275
Crop damage (in acres)	
Totally	133,272
Partially	791,621
Houses destroyed	
Totally	819,608
Partially	882,750
People died	138,882
Cattle/poultry perished	1,061,029
People injured	139,058
Educational institutions destroyed	
Totally	3,865
Partially	5,801
Roads destroyed (in miles)	764
Bridges and culverts destroyed	496
Embankments destroyed (in miles)	
Totally	122
Partially	585
N° of people missing since the catastrophe	1,225

\* Source . Ministry of Relief and Rehabilitation, Government of the People's Republic of Bangladesh, 17 June 1991

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*\* References to be added in text*