

3. Public Health and Preventive Medicine

The initial information on the magnitude and devastation of the earthquake was communicated by all the media. Some health institutions of the country made decisions based on information from those sources, which at times proved to be unreliable, contradictory and exaggerated. Guided by radio information, one institution established an operations base, one hour later, at different disaster sites, with vaccination posts against typhoid fever and tetanus (34).

On September 27, the vaccination order was revoked, but it was not stopped at these posts units the 30th, and during this period 1,117 doses were given due to public demand.

The Interinstitutional Health Committee decided to vaccinate against tetanus, selectively and voluntarily; this was particularly important for search and rescue groups. Fumigations with sodium hypochlorite were ordered in certain zones where rescue activities had concluded and only rubble remained to be cleared away. The health sector did not approve of this measure but consented in order to alleviate public concern about the harmful effects of decomposing bodies.

Shelters and Campsites

To relocate the homeless, 131 shelters and 72 campsites were established in the Federal District. Of the 33,224 homeless, 20,044 (60.3%) were located in the shelters in 13 delegations, with important concentrations at the Cuauhtemoc, Venustiano Carranza, Gustavo Madero, Hidalgo and Benito Juárez delegations (Table 15). On the other hand, 13,176 persons were located in campsites, mainly in the Cuauhtemoc and Venustiano Carranza delegations (35). In spite of the capacity to relocate the 33,224 persons in temporary shelters and campsites throughout the city, more than two thirds of the total number of homeless (72%) were located in the Cuauhtemoc and Venustiano Carranza delegations, that is, in the same disaster area near their destroyed homes.

Table 15. Distribution of the Homeless by Political Delegation, Mexico, D.F., 1985

Delegation	No. Homeless in Shelters	No. Homeless in Camps	Total
1. A. Obregón	482	-	482
2. Azcapotzalco	564	-	564
3. B. Juárez	1,255	70	1,325
4. Coyoacán	44	-	44
5. C. de Morelos	0	-	0
6. Cuauhtemoc	7,950	11,604	19,554
7. G. A. Madero	2,575	-	2,575
8. Iztacalco	779	-	779
9. Iztapalapa	40	-	40
10. M. Contreras	669	-	669
11. M. Hidalgo	1,349	50	1,399
12. Milpa Alta	0	-	0
13. Tlahuac	946	-	946
14. Tlalpan	275	-	275
15. V. Carranza	3,120	1,452	4,572
16. Xochimilco	0	-	0
TOTAL	20,048	13,176	33,224

Source: *Informe del Comité Interinstitucional de la Secretaría de Salud*, September 28, 1985.

Epidemiologic Surveillance

A system of epidemiologic surveillance was quickly set up to evaluate and control water quality, diarrheal and vaccine preventable diseases, particularly in shelters and campsites. Measles vaccine was made available in shelters and campsites for children of the required age groups who had not yet been vaccinated. Envelopes of rehydration salts as well as chlorine tablets were distributed extensively and first aid stations were established to provide

At times it is necessary to establish temporary camps for persons displaced by a disaster. However, this is not desirable from a public health viewpoint. Large concentrations of people can contribute to the spread of communicable diseases and the lack of lavatory installations, food preparation facilities and a trash collection system create a situation that can lead to further problems.

medical attention. One month later, these stations were substituted by IMSS and ISSSTE medical units to attend the affected population (14).

At the same time, a massive public information and education campaign was undertaken stressing the importance of drinking boiled water, handling food carefully and practicing personal hygiene, especially hand washing. At some campsites, small outbreaks of scabies and pediculosis were detected but rapidly controlled, and in general, no epidemics of any type were observed.

Use of Chlorine Tablets and Oral Rehydration Salts

Guadalupe Frausto Pérez (36) and a group of students from the school of Public Health of Mexico conducted a survey among families regarding their use of chlorine tablets and oral rehydration salts. In the interest of managing similar public health situations, pertinent aspects of the study are presented.

The survey was undertaken in 1,014 randomly-selected families from a list of Federal District homes. Eighty-seven percent of the families (882) had received water purifying tablets and of these, 93.1% (821) received instructions for their use. Seventy-seven percent (679) used the tablets and of these about 48.5% used them according to instructions. The principal causes of incorrect use are listed in Table 16. Among the diverse reasons given by 190 families

Table 16. Number and Percent of Those Who Correctly Used Chlorine Tablets

Use of Chlorine Tablets According to Instructions	Yes		No		Total	Percent
	Number	Percent	Number	Percent		
Clean container with clear water	562	82.8	117	17.2	679	100
Add one tablet for every five liters of water	511	75.3	168	24.7	679	100
Shake the container	398	58.6	281	41.4	679	100
Wait one hour before drinking the water	515	75.8	164	24.2	679	100

Source: Reference (36).

for not using the tablets were that they used other procedures, or none at all, because they did not consider it necessary (52.7% and 33.7%, respectively).

The oral rehydration salts were utilized by 201 (75.8%) of the 265 persons that presented acute diarrheal disease, 127 of whom were children under five years of age. The salts were used correctly only about 28.8% of the time. The reasons for incorrect use appear in Table 17.

The authors concluded that whenever products are provided to the community, it is necessary to use all possible methods to inform and train the people in their proper use.

Table 17. Number and Percent of Those Who Correctly Used Oral Rehydration Salts

Use of Oral Rehydration Packets	Indications				Total	
	Yes Number	Percent	No Number	Percent	Number	Percent
Dissolve contents in one liter of cooled boiled water	161	80.0	40	20.0	201	100.0
Give to children under two the necessary spoonfuls for a 24 hour period	73	36.3	21	10.4	94	46.8
Give to persons over two the necessary spoonfuls for 8 to 24 hours	102	50.7	5	2.5	107	53.2
Do not boil the prepared solution	58	28.9	143	71.1	201	100.0

Source: Reference (36).

Psychological Consequences and Crisis Intervention

After a disaster such as the one that happened in Mexico on September 19, it is to be expected that a significant proportion of the population will remain psychologically affected to a greater or lesser degree. Conscious of this reality, the Coordination of Psychiatry and Mental Health of the IMSS initiated a crisis intervention program to offer psychological support to the victims of the tragedy. The general guidelines of the program and the most relevant preliminary results are listed here. (37)

In general terms, a strategy for crisis intervention proposes to:

1. Facilitate verbal expression
2. Encourage catharsis
3. Overcome negation
4. Combat negativism
5. Tolerate angry behavior
6. Avoid inactivity (high risk for individuals or groups experiencing grief)
7. Imagine future situations

Considering these guidelines, a strategy was designed to treat people by means of individual and group therapy sessions, depending on their need for intervention. Light and moderate cases were attended opportunely by non-professional personnel and severe cases were referred to professionals. Individual and group therapy sessions were conducted with a community participation program that promoted self-responsibility and self-sufficiency.

To start this program it was necessary to train professionals and non-professionals how to identify emotional problems and how to use simple psychological intervention techniques. Staff members were highly motivated to avoid crisis within themselves and to stimulate good working habits.

The development of the program was preceded by a massive community information and orientation campaign regarding the locations for receiving treatment and emphasizing the importance of adequate stress management as a personal, family and community goal.

The following risk groups were identified:

1. Persons with lost family members
2. Children and old persons lost in shelters

3. Homeless persons and families
4. Hospitalized survivors and their families and
5. Persons and families who had lost family members because as a result of the earthquake

Among the places chosen as treatment sites were community spaces, social security centers of the IMSS serving as shelters, homes, factories (using work security brigades), family medicine units, regional general hospitals, and centers that provide specialized psychiatry services.

During the first three weeks after the disaster, close to 1,000 mental health promoters (professional and non-professional) and more than 100 supervisors were trained. The instrument to detect emotional problems had three sections: Section A explored general physical and emotional health; Section B reviewed Beck's *depression inventory* (38), and Section C included Brown's *scale for life's events* (39) which explored losses suffered in three basic areas: personal, family, and social.

The effects of a disaster can cause psychic as well as physical harm. Many persons who live through the tragedy of an earthquake report symptoms of depression, anxiety and insomnia. Through group and individual therapy, the survivors learn techniques of verbal expression so that they can combat accumulated negativity and reestablish their lives.

In Figure 11, the study population is classified into 3 groups to facilitate the identification and management of cases: healthy persons or those with compensated lesser crisis (grades 0 - 12); persons with moderately uncompensated crisis (grades 13 - 25), and persons with uncompensated severe crisis (grades of 26 or more). Finally a proportional sample of 3,964 persons from risk groups was selected. (Table 18)

Table 18. Study of Psychological Consequences and Intervention. Sample of Population by Location, Mexico, D.F., 1985

Location	Number	Percent
Shelters	436	11.0
Medical units	396	10.0
Administrative units	912	23.0
Factories	1,864	47.0
Services and commercial locations	277	7.0
Other	79	2.0
TOTAL	3,964	100.0

Source: Reference (37).

Results

In Table 19 some socio-demographic characteristics of the study population can be observed, and in Table 20, the percentage distribution of the types of crisis are identified according to sex. Note that women had moderate and severe crisis more frequently than men (twice as many). Uncompensated severe crisis was characterized by insomnia (17%), somatic reactions (13%), anxiety/depression (6%), and social inadequacy problems (3%). In general, the population studied developed anxiety/depression (41%); insomnia (40%); somatic reactions (39%); social inadequacy (26%) and autodestructive ideas (13%) as a consequence of the earthquakes and their devastating effects. (Table 21)

Figure 11. Crisis Intervention, Classification and Management of Patients, Mexico, D.F., 1985

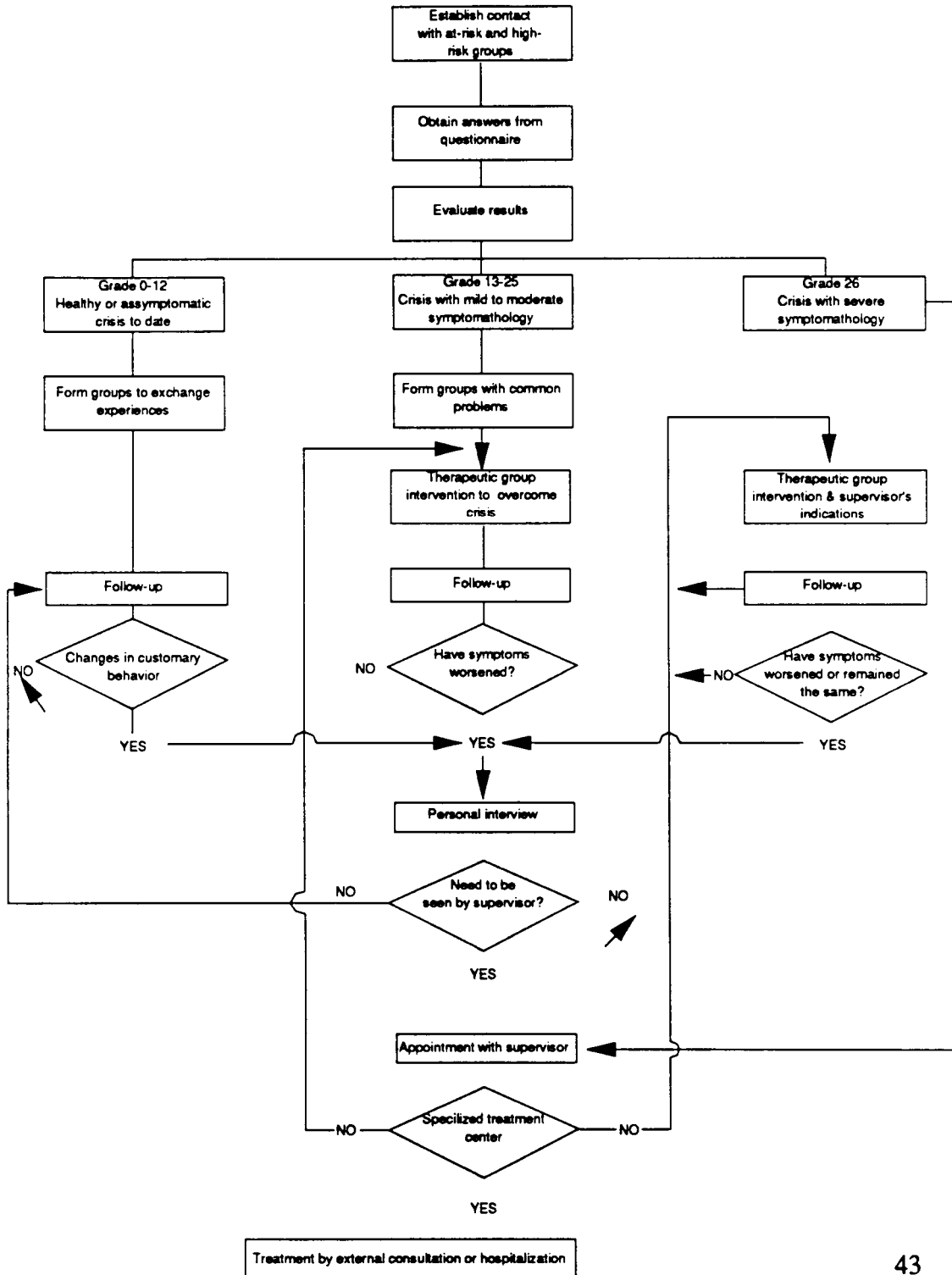


Table 19. Sociodemographic Characteristics of the Population Studied, Mexico, D.F., 1985

Variable	Class	Percent (N=3.964)
Sex	Feminine	44
	Masculine	56
Age groups	0 - 20	10.0
	20 - 24	19.0
	25 - 29	21.0
	30 - 34	16.0
	35 - 39	13.0
	40 - 44	9.0
	45 - 49	6.0
	50 - 54	5.0
	55 and over	1.0
Marital status	Married	58.0
	Single	31.0
	Widow/Widower	2.0
	Divorced or separated	4.0
	Cohabitant	5.0
Education	No official education	8.0
	Grade school incomplete	1.0
	Grade school complete	25.0
	High school or equivalent	31.0
	Preparatory or equivalent	17.0
	Professional	18.0
Occupation	Professionals and educators	9.0
	Domestic workers	47.0
	Skilled laborer	19.0
	Unskilled laborer	13.0
	Housewife	5.0
	Student	4.0
	Others	3.0

Source: Reference (37).

Table 20. Distribution of Crisis by Type and Sex

Type of Crisis	Percent		
	Women	Men	Total
Light and with compensation	26.0	47.0	73.0
Moderate and without compensation	10.0	6.0	16.0
Severe and without compensation	8.0	3.0	11.0

Source: Reference (37).

Table 21. Percentage^a of Symptomologic Categories, Using Section A of the Investigative Instrument, Mexico, D.F., 1985

Crisis	Symptomatology				
	Somatic Reaction (%)	Social Inadequacy (%)	Insomnia (%)	Depression/Anxiety (%)	Auto Destructive (%)
Without symptoms	61.0	74.0	60.0	59.0	87.0
Light	19.0	17.0	16.0	26.0	7.0
Moderate	7.0	6.0	7.0	9.0	5.0
Severe	13.0	3.0	17.0	6.0	1.0

^a N=3.964

Source: Reference (37).

Depression was more frequent in women than in men, especially in light and moderate degrees. A marked absence of depression in men is illustrated in Table 22.

In Table 23, the number of losses suffered with respect to four specific areas is shown. The social area was the most affected (35%); followed by the economic (26%); family (23%) and personal (20%).

Table 22. Percent^a of Depression Intensity by Sex, Using Section B of the Investigative Instrument, Mexico, D.F., 1985

Intensity	Women Percent	Men Percent	Total Percent
Not depressed	25.0	45.0	70.0
Depressed			
Light	12.0	8.0	20.0
Moderate	6.0	3.0	9.0
Severe	0.5	0.5	1.0

^a N=3,964

Source: Reference (37).

Table 23. Frequency and Percent^a of Loss in the Areas Investigated (Section A), Mexico, D.F., 1985

No. of Losses or Events	Personal Area (%)	Economic Area (%)	Familial Area (%)	Social Area (%)
Without loss	80.0	74.0	77.0	65.0
1	16.0	15.0	10.0	19.0
2	3.0	7.0	6.0	10.0
3 - 4	1.0	3.0	5.0	5.0
5 or more	-	1.0	2.0	1.0

^a N=3,964

Source: Reference (37).

Disasters affect women and children to a disproportionately greater extent. The statistics indicate that in this disaster, women were more vulnerable than men to suffer deep depression and anxiety.

