PSYCHOLOGICAL CONSEQUENCES OF DISASTERS IN LATIN AMERICA: IMPLICATIONS FOR RESPONSE AND POLICY

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I. INTRODUCTION

The psychological consequences of disaster have been the subject of growing attention in the past decade [1]. However, most of the research efforts have focused on disasters that occurred in developed countries [2], notwithstanding the fact that disasters affect developing nations disproportionately. In fact, excluding disasters in the United States (Table 1), between 1900 and 1986 there have been 2,392 disasters in the world, but 86.4% occurred in developing nations, producing a total of 42 million deaths and 1.4 billion affected individuals. Seventy eight percent of all deaths occurred in developing countries, where 97.5% of all affected individuals are located. The observed ratio between affected and killed, of only 2.9 for the developed nations, is ten times greater for developing countries [3]. Hence, not only are disasters disproportionately more frequent events in the Third World, but they are also responsible for a much higher proportion of victims who, having survived the impact, need long-term management of their biopsychosocial needs. Therefore, it is necessary that we study in greater depth the impact of disaster on victims' well-being within the context of poverty and marginalization.

Mental health problems in developing countries have traditionally been assigned a low priority in routine clinical situations. It was not until recently that various studies conducted in selected developing countries were able to show that in outpatient clinics and in the community the frequency of mental disorders was similar to the rates seen in developed countries. [4] Primary care has been identified as the main strategy for extending mental health care in developing countries. It has been defined as "essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and country care afford. It forms an integral part both of the country's health system of which it is the nucleus and of the overall social and economic development of the community." [5] The primary care worker includes the general doctor, nurse or nurse auxiliary, health promoter or community village worker, whose effectiveness in delivering mental health to individuals, family and communities has been amply documented in developing countries [6]. As psychiatric and psychosocial problems gain increased relevance in the planning of mental services for developing countries in routine situations, we expect a similar change will occur in planning for disaster situations. [7]

Our projects in Latin America addressed this issue from three perspectives: research, teaching and training, and planning for

service delivery. In this presentation, we will summarize our findings in these three areas, and will outline possible future directions to be taken in the field of disaster mental health.

II. ORIGINS OF THE PROJECT

Before we go into the findings, I would like to share with you, briefly, the origins of this progect, whose peculiarities in a way are an example of how opportunities need to be seized for developing research under difficult conditions.

I had provided an initial consultation to the Division of Mental Health of the Colombian Ministry of Health in August 1985 to design a national primary mental health care plan, which was to be pilot-tested in Armero the following year. The plan was to have its final draft in November 1985, following a second consultation which would convene all the State Mental Health Directors in the city of Ibague, capital of the state of Tolima. Eleven days before this consultation was to begin, the eruption of the volcano Nevado del Ruiz in the northern area of the state produced a mudslide that buried the small town of Armero, killing 80% of its 30,000 inhabitants and leaving thousands injured or homeless [8]. The regional psychiatric hospital in Armero, which had 87% of the state's psychiatric beds, was completely destroyed, and 40 mental health workers perished in the tragedy.

The likely increase of mental problems among survivors and the

decrease in the specialized mental health resources high-lighted the need to develop alternative strategies for providing mental health care. It was also estimated that victims would face significant lasting and emotional difficulties in reconstructing their lives, thus requiring the actual involvement of the general health sector, particularly the primary level of care. The long-term mental health care which could be delivered through its routine service mechanisms could adequately meet the victims' biopsychosocial needs [9]. With the overall objective of developing, implementing and evaluating the role of the primary health worker in providing mental health care to disaster victims in developing countries, we designed the Armero and Ecuador projects, which have partially addressed these issues. These projects have been developed in collaboration with the University Javeriana in Colombia, and the Central University of Ecuador. It has been supported in the Ministries of Health of these two countries, and funded by various agencies that include the U.S. National Institute of Mental health, the University of Colorado at Boulder, the Pan American Health Organization and the Johns Hopkins University School of Medicine [10].

III. THE RESEARCH COMPONENT

Our project was carried out in two sites: Armero, Colombia, and the province of Imbabura, in Ecuador. Data were collected on adult subjects at 3 points in time in Colombia and once in Ecuador.

We utilized the same research design and instruments. The design included a two-stage process: screening victims for the identification of general emotional distress, and a psychiatric interview of a subsample to make specific psychiatric diagnoses. The instrument used for the screening was the Self-Reporting Questionnaire, which has been extensively used in developing countries [11-14]. For the psychiatric interview, clinicians utilized thier routine plus plan a checklist [15] that produces standardized diagnoses in accordance with criteria of the third edition of the Diagnostic and Statistical Manual of the American Psychiatric Association [16]. Only subjects who satisfied both the clinical and the DSM-III criteria were considered a "case". In Colombia, we surveyed 200 subjects in the tent camps, and 100 patients in the primary care clinics; in Ecuador, we surveyed 100 patients in clinics. We subsequently followed-up the Colombia tent sample twice: in 1988, when we re-interviewed 40 subjects, and in 1990 when we re-assessed 113 subjects [17]. To our knowledge this is the largest data set on mental health problems of disaster victims in Latin America who have been followed-up five years after the catastrophe.

Our results can be summarized as follows:

(i) There was a high prevalence of emotional distress on the baseline surveys (55% to 40%), three to four times larger then the rates seem in ordinary clinical situations [18-19].

(ii) This emotional distress corresponded to well-defined psychiatric disorders, mostly post-traumatic stress disorder or major depression [20-22].

(iii) follow-up data indicate an increase in the frequency of emotional distress in 1988 (78%) [23], and a subsequent decrease in 1990 (31%). [24]

(iv) On all these observations, there has been a remarkable consistency of symptomatology: the mean scores in the screening instrument, the most frequent symptoms, and the strongest predictors of emotional distress were essentially the same for all groups studied. Also, the symptom-profiles of emotionally-distressed victims were very similar. (Figure 1)

IV TEACHING AND TRAINING

The findings of our investigation indicate a consistency in the emotional response of disaster victims and provide an empirical basis for the development of a model curriculum for use in different disasters, with adjustments for the culture, the needs, and the resources of different countries. More or fewer primary care workers will be trained depending on the magnitude of the disaster and the anticipated prevalence of emotional distress; but

the content of the training can be uniform, with a focus on the clinical pictures of anxiety and depression.

The training of health workers in mental health seems to be effective and long-lasting. In the context of a WHO collaborative study in seven developing countries, general health workers were assessed 18 months after training aimed at improving their knowledge, attitudes, skills and capacity for the management of disorders. It was shown that the improvement was still visible and was of equal magnitude in all countries.

In this framework, the role of the specialized mental health team should essentially be one of supervision and training, and only difficult cases should be referred for direct treatment. Specific tasks of mental health teams intervening for disaster victims in various developed countries have been described in detail by Cohen [25-27].

The training of primary health care workers to give appropriate treatment to people attending health centres and showing emotional distress due to a very stressful event deserves maximum priority. Such training represents one of the main preparedness activities. The training of health workers should include knowledge of disaster behavior and of psychological reactions to disasters; basic knowledge of stress-related disorders

to be found among populations affected by a disaster; understanding and knowledge of how to deal with the main psychosocial needs of affected populations; and dissemination of simple and effective skills to be used for the recognition and treatment of psychologically distressed victims (interviewing skills, counseling, brief and simple psychotherapeutic methods, targeted pharmacotherapy, group therapy, etc.) [28]

V. PLANNING OF SERVICE DELIVERY

The provision of adequate mental health care to disaster victims,particularly in developing countries, must rely extensively on the general health care worker under the supervision of the mental health specialist. This is specially true for the primary level of care whose capabilities to deliver mental health to disaster victims our study has explored.

The following points need to be highlighted:

a. We need to develop a long range plan to have a full scale mental health intervention strategy. But many preparatory steps must be taken. The comments that follow present a progression from the current state-of-the-art towards an ultimate goal which is unlikely to be fully reached in less than 5-10 years.

b. We need to work concurrently at preparedness, response and rehabilitation, with the full understanding that these levels may proceed at different paces and influence each other (e.g. while preparedness efforts are poor certain response measures may need to be taken; when preparedness becomes perfected other response measures can be expected).

I have developed three models which may vary from country to country and may need to be adapted to the local realities.

Model 1 this is the current structure seen in most developing developing countries. An international consultant is called to provide mental health assistance after a disaster has occurred, typically to the Ministry of Health and through PAHO. The consultant will meet with the emergency committee and will acquire information on the disaster and the available health resources. The consultant will also have a series of meetings with the Division of Mental Health at the national level, with the health authorities of the disaster area, or with the mental health officer if one exists. These meetings will have the goal of training/ educating mental health/general health/disaster workers on disaster mental health. The consultant should make available appropriate materials.

By the time a consultant moves in, the initial phase of the disaster will have passed. The mental health workers in the area will become involved in direct patient care. The effects of the consultation will refer mostly to the structure, development and implementation of a model of care in which the health worker will take increasing responsibility for providing mental health care to victims with the support of mental health professionals. The role of the international consultant will be of teaching/educating the mental health officers on disaster mental health at the national and local general and primary levels, who in turn will take the responsibility for training the local health workers in relevant mental health issues.

In **Model 2** continuing efforts to achieve disaster preparedness should be taken to ensure national capability for managing the mental health consequences of disasters. These include the development of appropriate training/education materials (e.g. manual, slides, video tapes) which will be used to train national staff to be responsible for the disaster mental health activities within their home country. A workshop could be convened to be led by a group of international consultants with the national mental health authorities and/or designated staff to be responsible for the disaster mental health program. The goal of the workshop is to develop the appropriate training materials and plans for their

use. When a disaster strikes a country, the international consultant will no longer be needed and the country will have attained a greater degree of self-reliance.

Given the absence of the international consultant step, interventions can be implemented must earlier probably within one week of the disaster. It will also be possible to involve the mental health workers almost entirely in supervision/support of direct service providers. Attempts at evaluating interventions can also be done.

Model 3 is applicable at a later stage, and in zones which are at clear risk for disasters (e.g., Central Colombia). The local mental health team becomes responsible for the management of the psychosocial components of disaster relief in its area of responsibility. This requires an active teaching/training role of the Ministry of Health with selected mental health officers in a continuing preparedness effort.

Using this model, mental health interventions will occur sooner, the mental health officers will not be responsible for any direct ambulatory patient care (except for hospitalized cases) and a more detailed evaluation can be accomplished. Also, the greater proximity to the community will allow for a much greater degree of community participation.

For the attainment of Model 3 the following preliminary steps are suggested:

a. Development of a core training material: manual, slide set, video, etc. These should be available for the various levels of training that are required. Staff in need to be trained include; the mental health professional, the general health professional, the auxiliary health workers, the community.

b. Compilation of the complete literature and production of a literature review accessible to non-mental health professionals.

c. Workshop/conference of "disaster mental health training" for the national mental health leaders and/or persons designated by them.

d. Specific budgetary allocation from the general health budget in order to implement the above mentioned plans.

For the implementation of all these three models it would be needed and of valuable help to have manuals and training facilities available for assisting in this realization.

IV. FUTURE DIRECTIONS

Studies have showed that the frequency of mental disorders in the aftermath of a major disaster are significant and long-lasting. They have also noted that the mental health specialist may be neither able nor the most appropriate health worker to meet the mental health needs of victims, families and communities. The general/primary care worker seems more appropriate. The training of the primary care worker in routine clinical care situation has been successfully accomplished. For the extension of the proposed strategy a to disaster situation we need to: (i) incorporate a mental health section in the emotional disaster plan; (ii) include disasters in the curricula of health professionals, and in the national health plan; (iii) develop adequate training resources; (iv) implement and evaluate the training of the primary care worker for disaster situations in the areas of knowledge skills and attitudes; and (v) assess the effect of their preventive and therapeutic interventions on the outcome of victims' mental health problems.

It is hoped that by attaining a good level of training in disaster mental health we will improve victims' access to scarce health resources, will promote a better equity in health care, and we will help alleviate the unneccessary suffering of thousands of people.

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TABLE 1

Worldwide Disasters (Excluding United States)

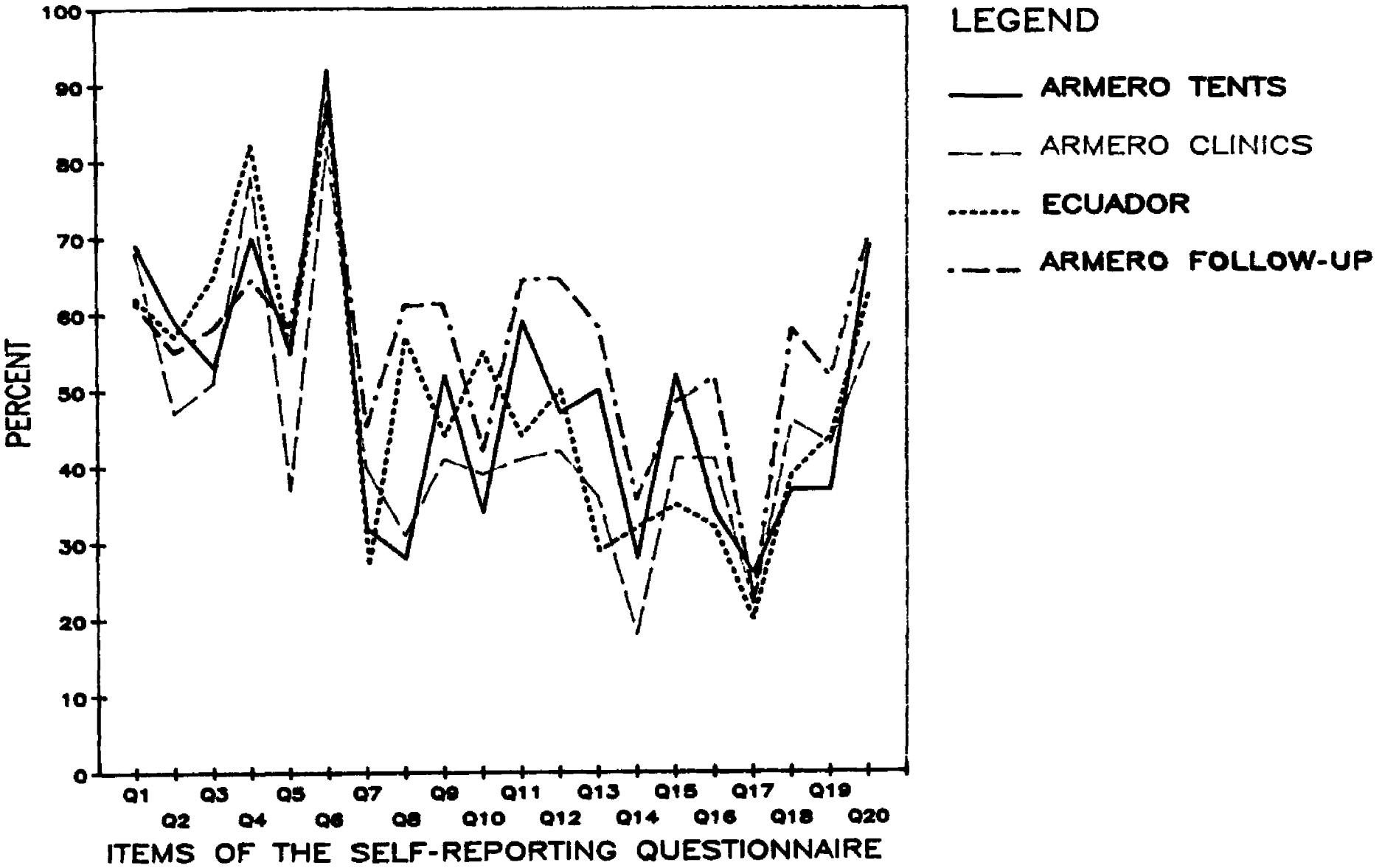
Killed and Affected Individuals and Number of Disasters

1990 - 1986

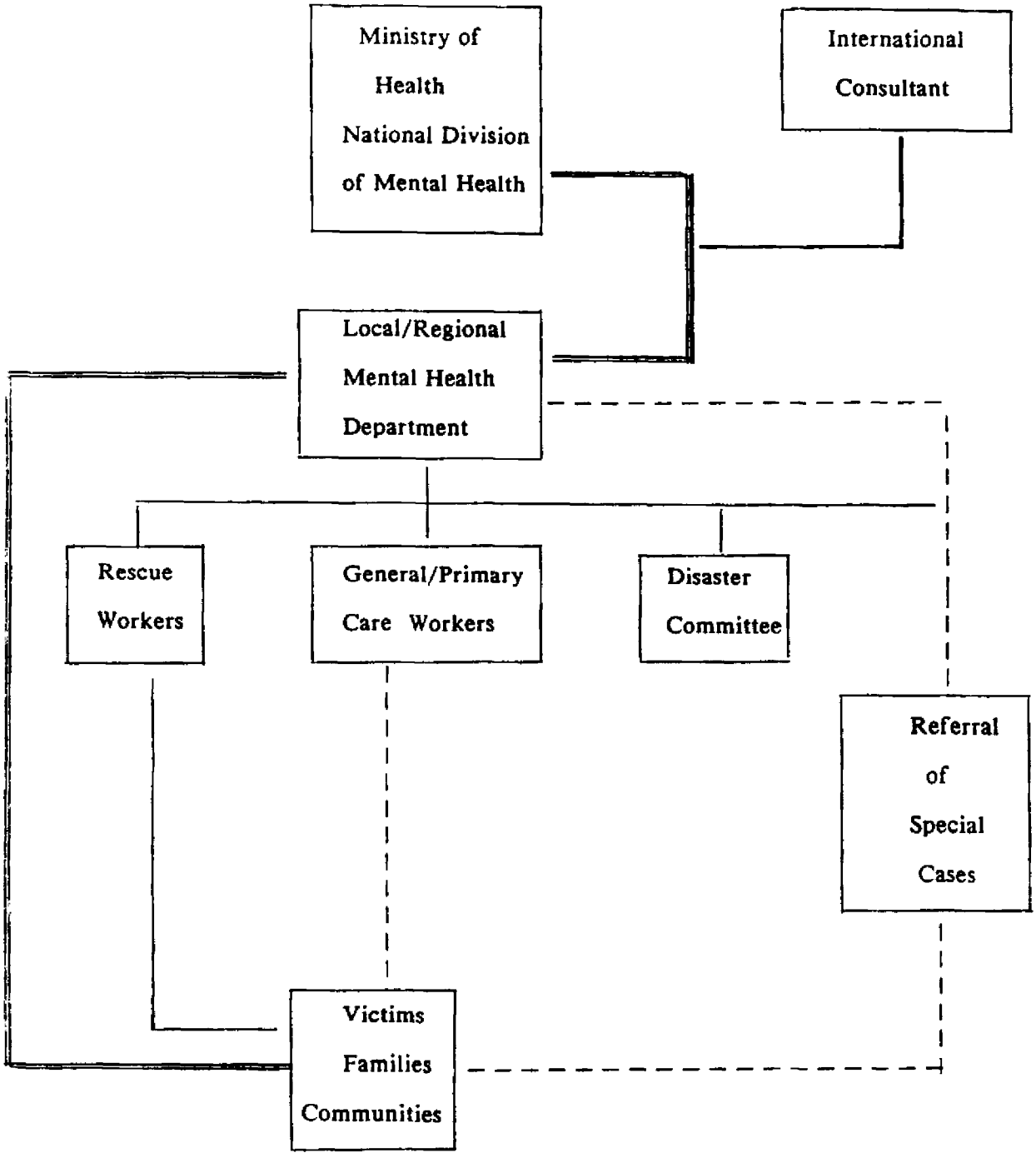
Individuals	Total	Developed Countries		Developing Countries	
	N	N	%	N	%
Killed	53,245,836	12,056,683	22.0	42,040,168	78.0
Affected	1,419,351,000	35,822,000	2.5	1,383,529,000	97.5
TOTAL	1,472,596,836	47,878,683		1,425,569,168	
Ratio	26.7	2.97		32.9	
Number of Disasters	2,392	327	13.6	2,036	86.4

SOURCE: United States Agency for International Development, 1986.

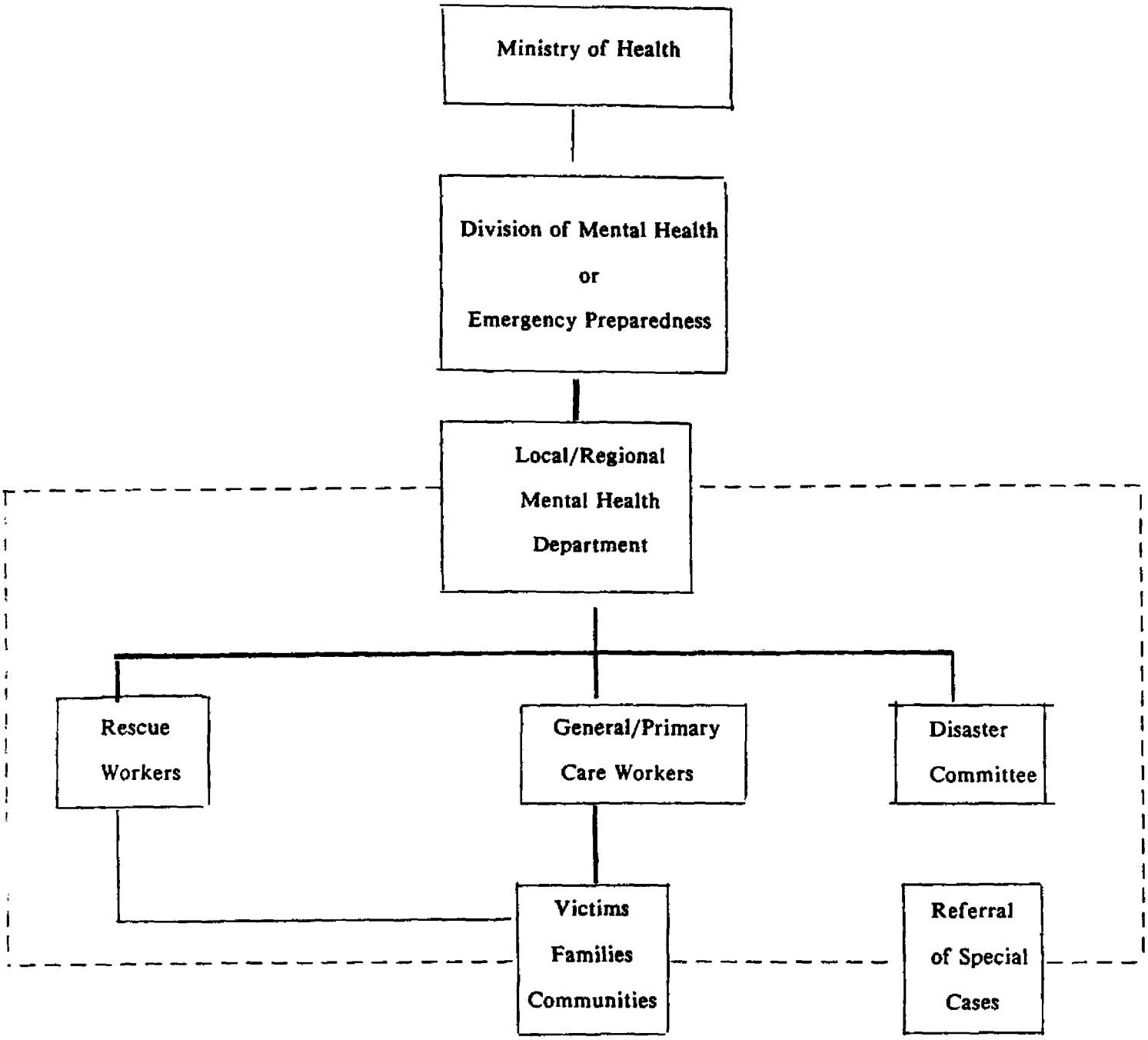
SYMPTOM-PROFILE OF DISASTER VICTIMS WITH EMOTIONAL DISTRESS AS DEFINED BY THE SELF-REPORTING QUESTIONNAIRE



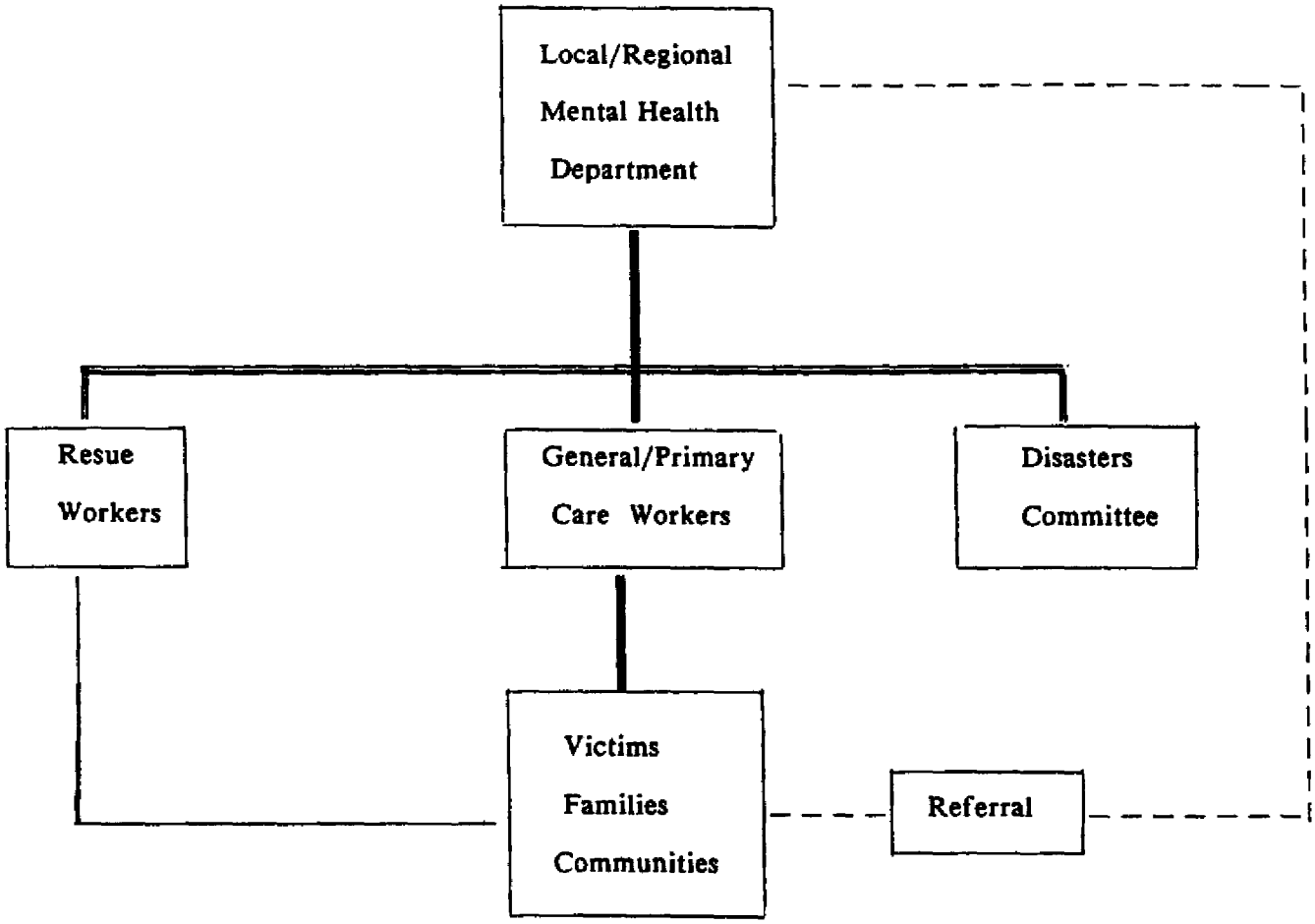
MODEL 1


Ministry of Health National Division of Mental Health
International Consultant
Local/Regional Mental Health Department
Rescue Workers
General/Primary Care Workers
Disaster Committee
Referral of Special Cases
Victims Families Communities

MODEL 2


Ministry of Health
Division of Mental Health
or
Emergency Preparedness
Local/Regional
Mental Health
Department
Rescue
Workers
General/Primary
Care Workers
Disaster
Committee
Victims
Families
Communities
Referral
of Special
Cases

MODEL 3



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