STRESS FROM RISK UNCERTAINTIES

D.S. Mileti

Colorado State University
Fort Collins, Colorado 80523

ABSTRACT

The phenomenon of stress in disasters and emergencies has been examined in a variety of ways over several decades. Results are not cumulative, and a wide range of opinion exists as to the stress impacts of disasters and emergencies on psychological stress. At the same time, stress does have a variety of meanings. Stress—as fear and anxiety versus stress as resulting in illness—does manifest itself in disasters and emergencies. One key reason is the use of uncertain information in presentations to the public. Certain information—even about uncertain risk—can reduce stress. Stress due to the misuse of public information in emergencies can be reduced, and not all stress should be viewed as bad.

KEY WORDS: Stress, Disasters, Emergencies, Emergency Information, Illness

1. INTRODUCTION

Human reaction to events that involve risk and risk uncertainties has long been a topic for investigation. Although events examined have been of varied sorts, research into natural and technological disasters and emergencies provide a rich and varied history. Early efforts set an interdisciplinary tone and included work that had sociological (cf., Fritz, 1954; Killian, 1952; Carr, 1932; Prince, 1920), psychological (cf., Menninger, 1952; Prasad, 1935) and social-psychological (cf., Quarantelli, 1954; Eliot, 1932) orientations. Subsequent research continued to push in different theoretical directions (cf., Dynes, 1970, 1986; Dacy and Kunreuther, 1969; Crawshaw, 1963); and, currently, the diversity of research into disasters and emergencies flourishes. Despite this long tradition, some aspects of human reaction to risk and risk uncertainties in disasters are better understood and documented than are others. The effect of risk uncertainties on stress is positioned, perhaps, somewhere inbetween theoretical closure and ignorance. It is the purpose of this paper to attempt to sate the character of this relationship and offer some hypothesized directions for future research; attention is limited to disasters and emergencies. Moreover, focus is placed in the linkage between the sociological characteristics or risk which may be prime determinants of psychological effects, if and when the latter occur in disasters and emergencies.

2. THE PHENOMENON OF STRESS IN EMERGENCIES

A review of the findings and conclusions from work to investigate
stress in disasters and emergencies reveals a wide range of differences of opinion about stress impacts. These can readily be grouped into three classes. First, there is a wide body of research that concludes that disasters and emergencies do not produce negative stress impacts; in fact, it is concluded that disasters and their associated risks serve to enhance group solidarity and individual stability. This conclusion was reached early-on by those who investigated emergencies and disasters (Fritz and Marks, 1954; Janis, 1951), continued as the field matured (Coleman, 1966; Wilson, 1962; Fritz, 1961) and still prevails into the more recent disaster research literature (Quarantelli, 1979; Quarantelli and Dynes, 1973). Second, there is an equally well-established set of findings which reach the opposite conclusion; namely, that disasters and emergencies tear the social and psychological fabrics of the human condition, elicit psychological stress in general, and can produce continuing long-term stress states in some members of a population leading to stress-induced disorders. This viewpoint was also reached early in investigations of disasters and emergencies (Wolfenstein, 1957; Wallace, 1956; Rosenman, 1956; Menninger, 1952; Tyhurst, 1951), continued as the field grew (Krystal, 1986; Lifton 1967; Farber, 1967; Crawshaw, 1963), and remains a conclusion for some who have done more recent investigations (Kasl et al., 1981a, 1981b; Houts et al., 1980a, 1980b; Gleser et al., 1981; Titchener and Kapp, 1976; Rengell, 1976; Lifton and Olson, 1976; Erikson, 1976). Third, there have also been some who have reached conclusions in the middle-ground. Disasters and emergencies do elicit stress in some people who experience them, but this stress is short-lived and does not result in psychological stress-induced disorders—although there are on occasion some rare exceptions. This conclusion is also to be found in the early literature on disaster and emergency research (Moore et al., 1963; Bates et al., 1963; Form and Nosow, 1958; Fritz and Marks, 1954; Janis, 1951), in the second generation of disaster research (Hall and Landreth, 1975; Drabek et al., 1973; Drabek and Stevenson, 1971) and in more contemporary studies (Mileti et al., 1984; Bromet et al., 1982; Bromet, 1981, 1980; Dohrenwend et al., 1981, 1979). Obviously, there is a wide range of difference of opinion in the research literature on the stress impacts of disasters and emergencies.

There is a good reason why these different conclusion exist. Put simply, different researchers have gone about defining, operationalizing and measuring the concepts of disaster and stress very differently from each other. Disaster has meant atomic bomb explosions to some, while to others it was taken as a localized tornado disaster. Few researchers have sought to decompose "disaster" into a theoretically meaningful typology of elements, for example, level of physical destruction, uncertainty in emergency information, and so on. At the same time, researchers have measured stress in different ways; some have equated it with evacuation, others asked people to estimate it themselves, still others used behavioral measures of stress manifestations. An obvious need is to seek theoretical refinement before research findings can be rendered consistent.

3. A WORKING DEFINITION OF STRESS

In general, and for the purposes of this paper, stress can be conceptualized as some altered state in a person stemming from changes in the environment (social, economic, cultural, physical, and so forth) which, if not adjusted for, can lead to negative health (physical or mental) consequences. Cannon (1928) first explored the relationship between psychological states, for example, anxiety, fear and anger, and illness; and Meyer (1951) elaborated that work to illustrate the