

A Conceptual Framework to Enhance Community Resilience Using Social Capital

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Abstract Community resilience has been recognized and promoted as both a vision and a strategy for disaster management. This paper establishes the importance of community resilience in disaster management, describes disaster management phases and the disaster system of care, reviews definitions and dimensions of community resilience and related foundational concepts (social groups, social networks, and social capital), and endorses a conceptual framework for enhancing community resilience through social capital. Resilience, both personal and community resilience, is increased by the social capital that emerges from improved social connections and social networks. Effective disaster management, which requires an informed and engaged public, relies on social networks to connect and support individuals, families, groups, and organizations within the community and to link the community with the disaster system of care. Community disaster teams can identify and engage in activities that promote personal and community resilience, and the team process itself can create social capital that also advances personal and community resilience. The enhancement framework advocated in this paper focuses on the role of social capital in augmenting community resilience derived

from people's interactions in groups, social networks, and teams.

Keywords Community resilience · Disaster management · Resilience · Social capital · Social networks · Teams

Introduction

Community resilience has been recognized and promoted as both a vision and a strategy for disaster management (Federal Emergency Management Agency (FEMA) 2011b; United States Department of Health and Human Services (U.S. DHHS) 2009; United States Department of Homeland Security (U.S. DHS) 2010). Early work in the area of community disaster resilience focused on defining the concept with more recent attention given to resilience-enhancing interventions. After establishing the importance of community resilience in disaster management and describing disaster management phases and the disaster system of care, this paper reviews definitions and dimensions of community resilience and related foundational concepts (social groups, social networks, and social capital) and endorses a conceptual framework for enhancing community resilience through social capital. The community resilience enhancement framework builds on concepts, skills, and practices familiar to social work which embraces community work as a core value and traditional focus (Chenoweth and Stehlik 2001). While acknowledging the importance of critical infrastructures and other resources in disaster management, the enhancement framework presented in this paper focuses on the role of social capital in augmenting community resilience derived from people's interactions in groups, social networks, and teams.

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Disaster Management

A focus at the community level is appropriate in disaster management because disasters are local events that have different effects in different communities and that call for and trigger different responses. Each community is uniquely characterized by its own experiences, needs, resources, and approaches to disaster management. A focus at the community level suggests the importance of the participation of community members (or local stakeholders), community ownership of the process, and local empowerment (Longstaff et al. 2010).

Community resilience has become a fundamental feature of homeland security and disaster management policy and planning. For example, the *National Disaster Recovery Framework* (FEMA 2011b), which established a national disaster recovery strategy based on the primacy of local, state, and tribal governments in managing disasters, recognizes the importance of community resilience as part of a successful recovery process. The U.S. DHS *Quadrennial Homeland Security Review Report* (2010) identifies resilience at individual, community, and system levels as essential to, and part of the foundation for, a comprehensive approach to homeland security. The vision of the U.S. DHHS *National Health Security Strategy of the United States of America* (2009), which was the nation's first comprehensive strategy for improving the management of major health incidents, is based on community resilience; national in scope, the *National Health Security Strategy* requires the commitment of all levels of government as well as individuals, families, and communities in disaster management.

Noting that “a culture of resilience will equip” individuals and communities both to cope with daily challenges and to manage large-scale crises (p. 10), the first strategic objective of the recent *National Health Security Strategy and Implementation Plan* (U.S. DHHS 2015) advocates building and sustaining “healthy, resilient communities” (p. 11). Priorities to accomplish this objective include the promotion of social connectedness, coordinated services through partnerships and enduring relationships, and increased access to information and training to enable and empower individuals to help their communities post event (U.S. DHHS 2015).

In advocating a “Whole Community approach” to disaster management, FEMA (2011a) recognizes the importance of individual preparedness and community engagement in increasing the nation's resilience and security. The Whole Community approach calls for various constituents (e.g., residents, emergency managers, leadership, government agencies) to understand and assess community needs collectively and to determine ways to organize and enhance assets, capacities, and interests. Three principles create the

foundation of the Whole Community approach: understand and meet the unique and diverse needs of the whole community, involve and empower all parts of the community to encourage local action and enhance local capacity, and support and reinforce effective activities and leverage existing structures and relationships for disaster response (FEMA 2011a).

Phases of Disaster Management

Disaster management occurs over time—pre, during, and post event—in over-lapping, interdependent, nonlinear phases of mitigation, preparedness, response, and recovery. Mitigation, which is implemented before, during, and after a disaster, includes activities to prevent or decrease the likelihood of a disaster, limit exposure to a disaster, and decrease the adverse effects of a disaster. It involves risk analysis and investment in long-term community well-being (Blanchard 2007; U.S. DHS 2013a). Preparedness is the continuous planning, organization, training, evaluation, and corrective action to enhance response and recovery. It includes the identification and analysis of threats, determination of resource needs, and accrual of resources (Blanchard 2007; Lindsay 2012). Disaster management response involves reducing or preventing human, property, and environmental loss in relation to an event and addressing ensuing needs. It includes delivering assistance to limit further damage; support basic needs; and preserve vital social, economic, and governmental infrastructures (Blanchard 2007; Lindsay 2012; U.S. DHS 2013b). Recovery begins when the incident has been stabilized, the immediate threat to safety and property has ended, and the perception of uncertainty and urgency that characterize the response phase is replaced with attention to rebuilding and restoring structures, infrastructures, and services and returning the community to its routine activities and functioning (Blanchard 2007; Lindell et al. 2006).

Disaster System of Care

State and local governments are responsible for disaster management, with federal programs and funding available upon Presidential declaration of an event when a major disaster exceeds the capacity of a state to respond. The disaster system of care includes a network of services and organizations that provide disaster-related assistance. These include for example, FEMA, the Substance Abuse and Mental Health Services Administration, and the American Red Cross (Red Cross) at the national level; the National Guard and state health and mental health authorities at the state level; and police, fire, emergency management, medical services, social services, schools,

churches, charities, and some businesses at the local level. All of these organizations and services, along with many more, may choose to provide support in mitigating, preparing for, responding to, and recovering from a disaster. Some of these, such as FEMA and the Red Cross, focus primarily on disasters while others, such as social service agencies, churches, and charities, have their own primary missions but also may provide disaster-related services when and as needed.

Community Resilience and its Dimensions

The concept of resilience as addressed in engineering and the physical sciences refers to the ability of a material to return to its original state, or to equilibrium, after being stressed. The resilience properties of a material relate to the structure of the material and can specify how the material will behave during the process of applying, and then removing, stress. Resilience thus connotes adaptation following disruption, or the capacity to recover, integrate the disturbance, and accommodate. It can be measured in a system's ability to buffer or absorb stress, the degree of stress that can be absorbed before the system's structure is altered, or the time needed to recover from the stress (Adger 2000; Holling 1996). A material's resilience can change over time and conditions (e.g., materials can corrode and fatigue or behave differently at different temperatures). A number of concepts from engineering and the physical sciences apply to discussions of resilience in the disaster and community context.

Resilience phenomena are discussed in the disaster and community literature using three different but related representations: properties, processes, and outcomes. A resilience property is a specification related to the structure or nature of an object at a particular point in time, or associated with particular conditions, that indicates how an object will behave when stressed. A process represents a set of activities and behaviors that occurs over time, for example, the set of activities and behaviors that occur while an object is stressed and in response to the stress. A process produces outcomes—the reactions to, or consequences of, the activities and behaviors that comprise the process. An object's resilience properties (e.g., its structure, nature, and behaviors) may change over time as an outcome of a process, namely as a result of exposure and adaptation to stressors. While some outcomes may be more directly observable than properties or processes, numerous factors other than resilience can affect the behaviors and activities that occur in processes and thereby may influence outcomes. For example, on average one can expect that highly resilient individuals or groups will experience better outcomes in disasters than less resilient ones. But in a

given disaster, an individual with little resilience may experience a good outcome while a highly resilient individual may have a poor outcome due to factors other than resilience that affect the disaster-induced processes. Such factors might include, for example, specifics associated with exposure and response, personal responsibilities that arise during the disaster cycle, and timing or location of events.

Resilience may change as a result of experience, learning, and trauma. Thus, one might view the resilience of a person or community as properties at a specific point in time and under specific conditions that generate resilience processes which describe how the entity behaves when stressed by an adverse event and the consequences of that process. People (individually and in aggregates) exposed to adverse events or to life experiences may learn from these experiences (in which case resilience might increase) or may be traumatized (in which case resilience might decrease). The observation that people's resilience can change is important. Indeed, much of the work of FEMA, the Red Cross, and others is to improve resilience.

Community Resilience

Community resilience is a systems-level concept, thus introducing considerations and complexities related to the various interconnecting and interacting components, structures, processes, and activities that comprise a community. Like personal resilience, community resilience is a characteristic or property of the community, a dynamic process, and a potential outcome. Broadly and simply, as an attribute or property, community resilience is “the sustained ability of a community to withstand and recover from adversity” (Chandra et al. 2011) or the capacity to “absorb disturbance, undergo change and retain the same essential functions, structure, identity, and feedbacks” (Longstaff et al. 2010). More specifically, community resilience is the ability to anticipate threat; limit negative effects; and respond, adapt, and grow when confronted with a threat (Community and Regional Resilience Institute (CARRI) 2013). Ungar (2011) defines community resilience as the community's “social capital, physical infrastructure, and culturally embedded patterns of interdependence that give it the potential to recover from dramatic change, sustain its adaptability, and support new growth that integrates the lessons learned during a time of crisis” (p. 1742).

Dimensions of Community Resilience

A number of approaches have been used to describe the key elements of a community that contribute to its resilience. These typically include some combination of

resources; social connectedness and social capital; information and communication; and the ability to learn, solve problems, take collective action, and transform (e.g., Berkes and Ross 2013; Chandra et al. 2011; Longstaff et al. 2010; Magis 2010; Norris and Stevens 2007; Norris et al. 2008; Pfefferbaum et al. 2015; Pfefferbaum et al. 2013). Aldrich (2012) notes that there are at least five dimensions of resilience post disaster—social and psychological well-being of individuals and families, restoration of organizations and institutions, resumption of economic and commercial services and productivity, restoration of the integrity of infrastructures and systems, and resumed operations of public safety and government functions.

Linking Personal and Community Resilience

Some of the factors that help shape personal resilience derive from the resilience of the community in which the individual resides. Ungar (2011) recognizes that “the community’s social and physical ecology are more important to the resilience of its members” than the characteristics of individual members alone (p. 1744) and asserts that the personal resilience of individuals is “inextricably” tied to the resilience of the community where they reside (p. 1744), that “most individuals are only as successful as their communities as a whole,” and that “individual success depends on” the community’s resources (p. 1742). Noting that personal resilience derives from one’s knowledge, skills, and emotions and from access to disaster-related resources either directly or from community or disaster support services, Ungar (2011) re-conceptualizes resilience not as people’s “capacity to withstand adversity” but rather as their ability to “access the resources” needed “to sustain well-being *and* the capacity of their communities and governments to provide them what they need” (p. 1743). Individual resilience is fostered by a set of “complex, interrelated” processes to distribute resources, and the community’s support in helping individual members to “navigate” and “negotiate for” resources influences resilience at the individual, family, and community levels (Ungar 2011, p. 1744).

Personal and community resilience are linked but not in perfect correspondence (Berkes and Ross 2013) so that not everyone in a resilient community will be personally resilient and a community may have many resilient members but not necessarily be a resilient community (Berkes and Ross 2013; Pfefferbaum et al. 2007). While the mechanisms and principles for resilience at the individual, family, and community levels may differ, individual, family, and community resilience are all interrelated (Berkes and Ross 2013). Berkes and Ross (2013) maintain that a community with members who are personally resilient in the disaster context is “likely to be resilient as a community as well”

(p. 15). Communities with large vulnerable populations are likely to be less resilient when confronted with social and economic disruption and disasters (Institute of Medicine (IOM) 2015). To some extent, a community’s resilience is reflected in “its capacity to care for its most vulnerable members” and addressing resource needs is more essential to development and adjustment in those who are more disadvantaged (Ungar 2011, p. 1744).

Social Groups, Social Networks, and Social Capital

Community resilience builds on social connections, social groups, social networks, and social capital as well as on individual resilience and on other social and physical structures and conditions of the community.

Social Groups

In most disaster situations, people function both as individuals and as participants in various groups including families, friendships, workplace and professional associations, religious affiliations, social and societal memberships, and/or neighbors or neighborhood organizations. Social groups range from casual, unstructured social associations of two or more people to more highly structured and connected alliances that function as teams. At the most basic level, social groups involve individuals who share some common social identity (e.g., ancestry, demographic background, interests, values) or who perceive themselves to belong to the same social category. Turner (1982) maintains that the members may have no more in common than a “collective perception of their own social unity” (p. 15). Other definitions of social groups require social or psychological interdependence among members (e.g., to satisfy needs, to accomplish a goal) (Platow et al. 2012; Turner 1982), including more specific elements such as a structure of reciprocal interaction, an organized system that dictates status and roles, and/or shared social norms and values that regulate conduct (Turner 1982). Families are social groups, and communities can be conceptualized as social groups as well.

Social Networks

A social network is a collection of interconnected distinct entities—individuals, groups, and/or organizations—that can be described by the structure and characteristics of the relationships that connect them (Borgatti et al. 2009; Hawkins et al. 2011; Knoke and Yang 2008). Social ties among the entities in a social network can improve the communication and coordination that promotes performance beyond that of any one entity. Social network theory

uses the social environment to explain outcomes, examining the structure of relationships among entities and the interdependence of entities in generating emergent effects (Borgatti et al. 2009). Social network analysis recognizes that the relationships within a network can affect the behavior, conduct, functioning, and performance of both individual entities and the network beyond that attributable to characteristics of the individual entities and that the relationships may be more influential than characteristics of the discrete member entities in explaining behavior (Knoke and Yang 2008). Through various processes, these structures and the relationships among them generate “pathways” that can influence a variety of outcomes including interests, views, values, and health (Knoke and Yang 2008, p. 5). While the cohesion associated with strong social networks is likely to benefit network entities, networks also can generate negative attitudes and actions toward others (Aldrich 2012), potentially increasing intolerance and discord with entities that do not belong to the network. Thus, in the context of disasters, strong social networks may benefit most survivors, but they also may disadvantage response and recovery in some groups, particularly those that are marginalized (Aldrich 2012).

Social Capital

Participation in a social network generates value or social capital, the collective benefits derived from the relationships among the people, groups, and organizations in the network including the “cultural, economic, and social resources” generated by social networks (Hawkins et al. 2011, p. 250). Some broaden the definition of social capital to include the people and institutions and the links between and among them (i.e., the social networks) as well as the resources that derive from the connections (Borgatti et al. 2009; World Bank, n.d.) and the information, expectations, and other assets that are conveyed through them (Aldrich 2012). According to the World Bank (n.d.), social capital refers to the “institutions, relationships, and norms that shape the quality and quantity of a society’s social interactions” (p. 1), thus including trust and the principles that govern interactions as part of social capital (Aldrich 2012). Social networks, at multiple levels, are important in creating social capital and the legal, political, and financial infrastructures that support social-ecological resilience (Adger et al. 2005).

Social capital can be viewed as an asset derived from both individual (ties of individuals to other individuals, groups, or institutions) and collective (linkages among various networks, organizations, and/or institutions and linkages between communities) levels (Aldrich 2012). Social capital, in the community resilience context, refers to the engagement of community members and their

willingness and ability to contribute to activities that advance the community’s goals (Magis 2010). Aldrich (2012) argues that social capital, more than socioeconomic conditions, population density, degree of damage, or amount of aid, is the “core engine of recovery” post disaster (p. 15). Survivors with connections to strong social networks have access to necessary information and support and recover faster than those without. Communities lacking in strong social networks and the derivative social capital are likely to be disadvantaged (Aldrich 2012).

Types of Relationships and Forms of Social Capital

Three forms of social relationships and social capital have been described: bonding (associations among similar members of a group or community), bridging (associations among dissimilar members), and linking (connections with other members, institutions, or networks that have greater power or authority) (Hawkins and Maurer 2010). Bonding and bridging social capital are related to horizontal associations while linking social capital stems from vertical associations (Aldrich 2012). Bonding social capital derives from homogeneous networks of those with similar characteristics (Coffé and Geys 2007) and “reflects the close ties that build cohesion within groups” (Magis 2010, p. 407). Bridging social capital reflects the loose associations across heterogeneous groups or networks that connect people or groups to other resources or networks with which they might not otherwise interact (Aldrich 2012; Coffé and Geys 2007; Magis 2010), thus “exposing them to diversity” and increasing their capacity to work together and their access to resources (Magis 2010, p. 407). Linking social capital refers to relationships between groups and networks with other groups or networks that possess influence, power, authority, or control (Aldrich 2012; Magis 2010). In the context of disaster management, bonding social capital may manifest, for example, as the assistance neighbors provide each other in the aftermath of an event. Bridging social capital may be expressed in, for example, the support survivors receive from local social service, health, religious, business, and other provider groups; broad-based coalitions; or networks in their community. Linking social capital is particularly important with respect to disaster management to the extent that it connects disaster-affected groups with resources available from the government and from various disaster-related organizations and networks (i.e., the disaster system of care). In the disaster context, linking social capital derives in part from improved knowledge about, and access to, various state and federal aid programs implemented to help survivors (e.g., recover emotionally, rebuild their homes, obtain business loans).

Improving Community Disaster Resilience Through Enhanced Social Capital

The national vision of community resilience endorsed by the federal government (FEMA 2011b; U.S. DHHS 2009; U.S. DHS 2010) has been operationalized recently in two reports on community health resilience which identify strategies to build community resilience through enhanced social connections (U.S. DHHS 2015) and social networks (IOM 2015). The *National Health Security Strategy and Implementation Plan* (U.S. DHHS 2015) notes that enhanced social connectedness will increase individual and community resilience. Among its strategic objectives for improving community resilience are fostering social connectedness; using partnerships and other relationships to improve coordination among health and human services; and building “a culture of resilience” by promoting physical, behavioral, and social health and by empowering individuals through information and training (U.S. DHHS 2015, p. 12). The IOM report on *Healthy, Resilient, and Sustainable Communities After Disasters: Strategies, Opportunities, and Planning for Recovery* (2015) recommends bolstering social capital before an event, maintaining it during an event, and leveraging it post event. In its Whole Community approach, FEMA (2011a) also advises enhancing a community’s social infrastructures and networks by reinforcing the social, economic, and political structures that support daily life and by linking them to emergency management programs and aligning them with emergency management activities.

Disaster management has traditionally focused on physical infrastructures and other resources. The importance of activities, programs, and interventions that strengthen relationships and social networks within the community is now being recognized as an approach to enhancing community resilience. The IOM (2015) report on *Healthy, Resilient, and Sustainable Communities After Disasters: Strategies, Opportunities, and Planning for Recovery* endorses the use of equitable approaches that build on existing organizations and social networks and increase interaction among community members to enhance social capital to foster recovery, restore community social structures, and enhance resilience. The enhancement of networks advances both personal and community resilience by improving social ties and social capital for individuals and families.

Using Teams to Enhance Social Networks and Social Capital

Despite the challenges in doing so, FEMA (2011a), in its Whole Community approach, recommends building,

nourishing, and maintaining relationships that engage and involve community members and identifying community partners to serve on the emergency management team. As community members work together, they learn more about their community and about potential vulnerabilities while creating relationships and partnerships to address the community’s disaster resilience (FEMA 2011a). Thus, a framework that fosters community engagement and participation through its principles, methods, and strategies can benefit individuals, groups, and communities and build community resilience (Pfefferbaum 2014). Indeed, all of the community resilience interventions assessed in a recent review encourage the active participation of multiple stakeholders to create and increase awareness, instill a sense of ownership and personal investment, foster preparedness, increase capacity, secure support for activities, and promote sustainability (Pfefferbaum et al. 2015).

A popular method for organizing community members and stakeholders is to use teams which promote sharing and cooperation to mobilize the support needed to envision, stimulate, and implement community planning and programs. Groups commonly have greater impact than individuals working alone (Aldrich 2012), and effective teamwork can improve performance for a group of people. Teamwork can inspire discipline; encourage communication and flexible problem-solving related to new and evolving events, issues, challenges, demands, opportunities, and information; and bring collective focus in identifying specific goals and selecting a common approach and course of action to achieve these goals. Collaboration among team members adds a social element to their work that can support collective action, reinforce the pursuit of team goals, foster creative approaches to overcome barriers, and motivate individual as well as shared change (Katzenbach and Smith 1993).

In disaster situations, many community members, families, groups, and organizations instinctively form and function as part of teams in that they communicate, cooperate, and share to help themselves and others in the community. The use of teams also can be a deliberate disaster management strategy. For example, local affiliated volunteer responder teams (e.g., Community Emergency Response Teams or CERTs) can play a vital role across disaster management phases. These teams typically learn about local hazards, organizations and systems, and populations. They work with others in the community, thus enhancing the social network and social capital which can increase the resilience of individual team members and of the community in which the teams function. Teamwork also can increase knowledge about, access to, and use of the disaster system of care which links the community to external, as well as internal, sources of support.

Community disaster teams should appreciate the perspective, values, and interests of the diverse community membership and must be able to work within the community's structures and systems. Outreach and engagement efforts must consider marginalized, underserved, and underrepresented populations as well as those in the majority (Kretzmann and McKnight 1993). These marginalized individuals and groups may have unconventional views about the roles and responsibilities of community structures and operations, may ask challenging questions, and may add new insight and vigor to community planning. To be effective, teams must recognize, among other things, the importance of the community's culture (including shared values, expectations, and assumptions), structure (design and organization), and systems (operating procedures) (Dyer et al. 2013).

Teams epitomize structured, highly functioning social groups and social networks. Emphasizing team activities and teamwork among existing social groups and social networks can enhance community resilience through two types of positive outcomes. First, the team can identify and implement actions specifically to enhance resilience. In addition, the process of determining and sharing goals, setting an agenda, and creating and executing plans contributes to community resilience by reinforcing cooperation and collaboration in the community thereby strengthening relationships and social capital. The process of participation may be as important as the outcome of these efforts (FEMA 2011a) insofar as convening community members to address disaster management enhances connections among residents and builds social networks and social capital (IOM 2015).

Enhancing Personal and Community Resilience

Resilience can be taught and it can be learned. Creating an awareness of community resilience can be motivating, especially among those who are invested in, or want to become invested in, their community. Ideally, community resilience activities and processes offer opportunities to convene, collaborate, and communicate with other community residents; to identify and affirm shared values, interests, and goals; to engage in critical reflection and skill development; and to join in efforts to build and sustain resilience over time and across adversities (Pfefferbaum et al. 2015; Pfefferbaum et al. 2008). To the extent that community resilience activities, programs, and interventions encourage team building, foster communication, enhance social connectedness and social capital, and promote skill development, they may increase both personal and community resilience.

Conclusion

Community resilience, whether represented as a property, process, or outcome, is dynamic and likely to change as a result of experience. This paper endorses a framework for enhancing community resilience that recognizes the importance of the social capital that emerges from improved social connections and social networks. Effective disaster management, which requires an informed and engaged public, relies on social networks to connect and support individuals, families, groups, and organizations within the community and to link the community with the disaster system of care. Community disaster teams can identify and engage in activities that promote personal and community resilience, and the team process itself can create social capital that also advances personal and community resilience.

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