Natural disasters cause immense suffering among affected communities. Most occur in developing countries, which have fewer resources to respond to the resulting traumas and difficulties. As a consequence, most survivors have to rely on their own coping resources and draw from what support remains within family, social networks and the wider community to manage and deal with their losses and consequent emotional distress. Taking the 2004 Asian tsunami as an example, this article reports findings from a qualitative study designed to investigate how survivors responded in Sri Lanka, and the range of coping strategies adopted and resources mobilized. In-depth interviews were conducted with 38 survivors purposively sampled from the Matara district of southern Sri Lanka. Survivors’ accounts emphasized the importance of extended supportive networks, religious faith and practices, and cultural traditions in facilitating recovery and sustaining emotional well-being. Government and external aid responses that promoted these, through contributing to the re-establishment of social, cultural, and economic life, were particularly valued by participants. Recourse to professional mental health care and Western psychological interventions was limited and survivors preferred to seek help from traditional and religious healers. Our findings tentatively suggest that long-term mental health following disaster may, in the first instance, be promoted by supporting the re-establishment of those naturally occurring resources through which communities traditionally respond to suffering.

**Key words:** Natural disaster, trauma, resilience and coping, emotional distress

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Natural disasters are occurring globally at an increasing rate, especially due to the upward trend of hydro-meteorological disasters (1,2). Most of these natural disasters are unpredictable and rapid; consequently, often many thousands experience immense losses with considerable subsequent social and economic hardships. However, the World Health Organization has estimated only 5–10% of those in disaster affected communities develop serious emotional and mental health problems which need intervention; many more, it seems, have the resources to mitigate the impact of grief and trauma, perhaps drawing on internal resilience and external supportive resources (3). The majority of natural disasters occur in developing countries, where the availability of professional mental health services is limited. This poses important questions about how affected communities and individuals manage and cope with trauma and loss in the aftermath of disaster, and the appropriate place of mental health services, especially psychological interventions, in this.

Cop ing and resilience have been among the key interests of researchers who have studied disaster affected communities (4,5). The ability to cope and recover from loss is determined by a collection of factors (6) in pre-disaster, within-disaster, and post-disaster periods (7). Personal strength, religious belief and faith, and external support appear to play key roles in coping after a massive disaster or major life events (8,9). A large number of studies on coping have been conducted with hurricane Katrina survivors in the United States (10–13). A few studies are available with 2004 Asian tsunami affected populations (14,15), 2008 Chinese earthquake survivors (16), and survivors of 1998–2005 floods in Bangladesh (17). All suggest coping strategies mediate the impact of disaster.

Most of the studies to date have used quantitative methods, with standardized scales to assess coping. Only a small amount of research has used in-depth methods to explore in more detail how disaster survivors manage and cope (5). The only qualitative study with 2004 Asian tsunami survivors was conducted in Tamil Nadu, India (4). The authors identified a range of strategies used by survivors (e.g., accepting loss and tolerance of hardships, social gatherings to remember the dead, and organizing remarriages). The most common form of coping was spiritual (i.e., requiems, rituals, and spiritual help-seeking). However, our understanding of how survivors, particularly in non-Western settings, manage and mobilize resources to cope with disaster remains limited.

Using in-depth qualitative methods, we set out to investigate the coping strategies adopted by survivors of the 2004 Boxing Day tsunami in Sri Lanka to deal with a range of psychological and social problems.

**METHODS**

The setting of this study was the Matara district of southern Sri Lanka, where 19,744 families were affected, 2235 were displaced, and 1342 people died (18). We conducted field work from October 2007 to September 2008 in selected Grama Niladari divisions (the lowest administrative unit in Sri Lanka, usually comprising two to three villages). Ethical approvals were obtained from...
the ethics committees of King’s College London, UK and the Faculty of Medical Sciences, University of Sri Jayawardanepura, Sri Lanka.

This was primarily a qualitative study, based on individual in-depth interviews with survivors, with researcher observations and secondary official sources providing additional data. In addition, we used two screening tools – the PRIME-MD Patient Health Questionnaire (PHQ-9, 19) and the Composite International Diagnostic Interview (CIDI, 20), Section K – to provide standardized information on the current mental health status of participants.

Participants aged 18 years and older were purposively selected based on a pre-designed sampling grid, which was developed to ensure that we included both men and women, different age groups, and people with a variety of experiences of the tsunami (i.e., family member dead or missing, or otherwise affected, displaced or resettled). To increase the heterogeneity of the sample, various religious, ethnic, and socioeconomic groups were also selected. To identify potential participants, a list of affected people was obtained from village level government officers. The final sample consequently consisted of 38 adult survivors from 12 Grama Niladari divisions from Matara and Weligama Divisional Secretariats, of whom 21 were women and 17 were men.

In-depth interviews with participants were based on a topic guide developed specifically for this project. The key topics included experiences on the day of the tsunami, the nature of any losses or consequences due to the event, responses and ways of coping, and the extent of available support (both informal and formal). Interviews were performed at participants’ homes or at a place of their choice. All of them were conducted in Sinhalese by the first author (SE) and were recorded with the permission of the participants. Field notes were taken by a research assistant. Soon after completion, the interviews were transcribed verbatim into Sinhala and then translated into English. The first author translated all the interviews initially and then each of these translations was separately discussed against its Sinhala transcript with at least two people who have done extensive writing in both Sinhala and English, including the third author (AS). In addition, observation and secondary sources were used.

The interview transcripts were analyzed using thematic analysis, with some elements of grounded theory (i.e., use of constant comparison to move beyond identification of individual themes to explore connections between themes, as a basis for more theoretical formulations). The analysis was conducted in the following steps: detailed reading and annotating of transcripts to identify initial themes or codes; defining and redefining of codes; development of higher order, more abstract, categories; refinement of codes and categories, through comparing and contrasting; and development of an overarching thematic framework. Coding was jointly done by the first (SE) and senior author (CM) and codes were further discussed with the research team. When the coding frame was finalized, we assessed intercoder reliability for 20 transcripts and achieved more than 90% agreement. Data analysis was aided by NVivo7 (21).

RESULTS

The study group comprised 21 women and 17 men aged 18–65 years. Among the 38 participants, 36 were Sinhalese and two were Muslim. We could not find any Tamil participant from the study area. Most were Buddhist (34) and two each were Catholic and Muslim. Five participants sustained severe physical injuries during the tsunami and 11 experienced moderate injuries. The study group included 20 individuals who lost one or multiple family members, three of whom never recovered their relatives’ bodies. To some degree almost everyone in the study group had been displaced and experienced loss of property, livelihood or household items.

Results from the PHQ and CIDI indicated that five participants were positive for post-traumatic stress disorder and somatoform disorders, and three were positive for major depression, using standard diagnostic criteria. Seven participants reported other depressive and/or anxiety symptoms without meeting criteria for disorder during the time of data collection.

Participants described a range of strategies that were adopted at different points following the tsunami to manage and respond to the immediate and lasting emotional trauma and practical devastation they and their communities experienced. These strategies are described in the following sections.

Resilience and faith

Many participants felt that the impetus to overcome distress should come from themselves and highlighted the importance of self-motivation and adopting a positive outlook. In this, emotional distress was conceived in terms of lack of stability and balance, with the consequent goal being to re-establish “emotional stability” or a “firm state of mind”. The idea of hopefulness and motivation to overcome distress and traumatic memories was shared by most participants.

“I look at everything positively. I had that strength all the way and that is my nature. I don’t have unattainable expectations in life and I don’t despair on any circumstance”.

Many, particularly women and older participants, talked about the importance and relevance of their faith
and religion, and sought to make sense of their losses through their religious faith and beliefs. For example, Buddhists often commented that the tsunami was an example of Buddha’s preaching on tentativeness in life and nature.

“We lost all what we had in a second. Soon after the incident we were really hopeless and lost all our hopes for the future. Even now we don’t go after sophisticated materials due to that experience. As it was shown in Buddha’s preaching, now we understood the temporary nature of life”.

The Catholic and Muslim participants were also convinced that God had helped them to escape from such a catastrophe (“it was God’s will”) and that God would protect them from any future disaster.

What is particularly noteworthy here is that these accounts all share an element of fatalism and ultimate trust in a higher authority that will provide protection against the unpredictable and uncontrollable. In this sense, the inner strength described by some individuals that enabled them to recover from the emotional trauma of the tsunami derives from faith and religious belief; this belief is reinforced as the events of the tsunami are made sense of by reference to (and therefore provide support for) the teachings of their faith.

There were nonetheless some for whom the tsunami did not make sense in relation to previously held beliefs. This was particularly common among those who had lost someone close. This may be a sign of hopelessness and anger that their faith had not spared them suffering and had not protected their family. One participant, for example, blamed God for being cruel to her and taking the life of her 6-year-old daughter.

“As stated by all the religions if there is any such supernatural power why couldn’t they save the lives of those victims? If so what is the purpose in having a religion. Even though I am a Catholic my daughter went to temple every poya day [full moon day] with my neighbors. No religion was able to save her life”.

Moreover, the data tentatively suggest that loss of faith was common among those with long-term mental health problems, and it may be that loss of faith following such trauma deprives individuals of a culturally rooted means of making sense of misfortune and in doing so compounds the loss and suffering.

Sharing pain

Many participants, especially women, talked of discussing their problems and pain with someone close or trustworthy. Talking to others, at one level, served the practical purposes of eliciting advice and providing company. But its value extended beyond this. For most participants, it was more importantly a way to “get pain out the chest”, perhaps even a form of witnessing in which comfort was sought and gained through the process of sharing experiences of suffering.

“We were able to come to terms with the situation as all of us were together and there was a mutual exchange of ideas. Every one shared their experiences”.

This extended beyond close friends and family. For example, talking to religious leaders, such as village Buddhist monks, priests of the churches, or maulāvi (leaders) of mosques, was commonly mentioned, especially by older participants. Various meetings organized by village level relief organizations were also identified as common opportunities to share experiences. The use of the word “sharing” to describe these activities is notable, and at the risk of over-interpretation it hints at the importance of mutual exchange in the disclosure of distress, at the comfort that can derive from knowing others have had similar experiences. After all, everyone in the community, to some extent, was affected by the tsunami and could at some level relate to the distress caused.

Almost everyone in the study group talked about the significance of informal social resources such as interpersonal networks of family, friends, and neighbors in coping with the emotional and practical consequences of the tsunami. The sense of community solidarity and strong extended family structure in traditional Sri Lankan society was highlighted by many as underpinning this. Those with a family member who had died or was missing frequently described receiving considerable support from extended family, many of whom helped practically by assuming tasks and duties performed by the deceased.

“My father was the only income earner of the family… So we badly felt it. But it is a relief that our elder brother and uncles all help us. Our elder brother started working in my uncle’s hotel after my father’s death and he earns for the family. Also other members of my mother’s family help us, they give us money. My brother takes us to night tuition classes as our father did in the past”.

This again extended beyond family and there were many accounts that suggested strong community cohesion after the tsunami. The support provided by religious leaders and nonaffected community members was greatly acknowledged. Most of the Buddhist temples, Catholic churches, and mosques organized memorial
Becoming engaged

Many participants commented that keeping busy was a successful way of dealing with stress. As one participant put it: “When the mind is filled with active feelings, there is no room for the pain to become entrenched”. In line with this, many engaged in work and leisure activities and religious rituals as a way of providing relief from their troubles. In the early stages, much effort was directed toward helping others practically; many acknowledged that villages were more united than before the tsunami and helped each other with cleaning up, searching for missing people, and mourning. There were many sports activities, drawing sessions, and dramas organized for children. Many of these activities, then, fulfilled a dual purpose, both as practical necessities (cleaning up, earning income, and passing time) and psychological and emotional distraction. The community nature of many of the activities further suggests that they formed part of a wider communal response – a process of re-establishing social, cultural, and economic life following the devastation of the tsunami.

Participants’ accounts suggested that engagement in religious activities increased notably during the early days after the tsunami. For example, Buddhists frequently talked about how they performed religious rituals such as Bodhi Pooja (bathing at the foot of the Bo tree with water and milk), lighting of oil lamps, and chanting of and listening to Pirith (Buddha’s preaching) as a means to gain prosperity and avoid hardships or evil forces, while meditation (Anapana sathi by Buddhists) was also mentioned as a way of gaining relaxation of mind. Indeed, religious practices and rituals have been ubiquitous responses to the tsunami, providing both individual comfort and opportunities for community reintegration and regeneration.

Private grief, public mourning

Creating monuments in the place where a person is cremated is a common way of paying respect to the dead in the Sri Lankan culture. However, in the aftermath of the tsunami, this was unattainable, as many of the dead were missing and some were buried in mass burial sites. To deal with this – both the loss and the difficulties in fulfilling culturally sanctioned and expected rituals – individuals and families adopted a number of alternative strategies to demonstrate respect and deal with memories of loved ones. Collecting reminders, such as photographs and souvenirs, was common and enlarged photographs of the dead have been posted in the front area of many households. One participant showed letters written by his wife and mentioned that he still keeps them to remember the “good old days”. Construction of monuments in the name of the dead was also common, and some participants mentioned that they spent the government’s death payments solely on such activities.

“We tended to have stronger faith in our religious beliefs. So we performed lots of religious activities for our dead son. All the financial compensations we received on behalf of him were used for these religious activities and we didn’t spend anything for our personal expenses”.

These monuments transform private grief into a form of public mourning, in which respect and love for the dead is outwardly displayed. In effect, the loss and sorrow is shared with the community and in the process managed and, ultimately, healed.

Outside aid

The overwhelming majority of participants, in talking about how they managed and recovered following the tsunami, talked primarily about drawing from their own resources or from supports that predated the tsunami (i.e., family, friends, churches and temples). When participants talked about government responses and external aid, views were mixed. The supportive environment provided by the government and humanitarian agencies was cited by some participants as a major factor in the return to normalcy. Some cultural events such as New Year festivals and religious events such as food donations were organized to promote community participation and generate aid. This noted, many participants were still critical of what they saw as disorganized relief distribution together with unfair compensation and suggested this compounded suffering and caused additional burden.

In the aftermath of the tsunami, some outside organizations provided psychological interventions for affected people. Despite the fact that the number of mental health professionals in Sri Lanka is limited (the precise number is unknown), “counselors”, “psychologists”, and other mental health professionals were attached to various organizations. Interestingly, the narratives of participants indicated that the demand for such services was extremely low, as people were more interested (when seeking external help) in getting support from traditional healers or traditional physicians, which included astrologers, diviners, oracles, traditional doctors (especially Ayurvedic doctors), and other types. The most common activities reported were thel methurum (application of oils to body and head to remove evil spirits), dehi kepili
(use of spiritual powers to remove evil spirits), and performing services to Gods and Goddesses. Participants reported that getting support from traditional healers was commonly used to overcome sleeping problems, fearful dreams, and screaming during sleep or flashbacks.

**DISCUSSION**

Broadly, the strategies and supportive resources described in participants’ accounts of the aftermath of the tsunami can be distinguished between those that were predominantly individual (or inward looking and private; i.e., inner-strength and positivity) and those that were interpersonal or social (or outward looking and public; i.e., emotional and practical support from family, friends and others in the community, including religious leaders and institutions). The form that each of these strategies took was colored by the predominant sociocentric and spiritual character of Sri Lankan society, such that apparently individual and private strategies for coping often became public expressions of loss, respect, and resilience (e.g., creating monuments to lost relatives). Similarly, individual responses were rooted in predominant beliefs about the origins of misfortune, and personal fortitude was often derived from fatalistic beliefs in the tentativeness of life and God’s will. Therefore, coping responses were made possible and shaped by cultural and social norms and practices in Sri Lanka.

Participants in this study were sampled through a list given by village level government officers, which may have led to a selective group. This, though, was unavoidable. Accessing villages through government officers was essential to successfully conduct the data collection, as many were suspicious of unknown people collecting personal information. To minimize this potential problem, we tried to select participants from large lists provided by the government officers in accordance with our sampling grid. Some views may have been more prominent because of the sampling approach. For example, although the sample recruited in this study broadly reflected the religious composition of the Matara district and the Sri Lankan population, the narratives on religious coping strategies were dominated by the views of Buddhists (89% of the sample) compared with Muslims (8%) and Catholics (5%).

Many of the strategies identified in our study resemble problem-focused and emotion-focused coping mechanisms described by Lazarus and Folkman (22). There has been debate about which type of strategy (problem-focused or emotion-focused) is most effective (23). Our data cannot address this question. What the data do, however, is suggest that this kind of dichotomy is overly schematic and ignores the observation that individuals commonly use both kinds of strategies, together and at different points. What is more, perhaps the most striking finding from this study is the degree to which coping with (or responding to) the multiple traumas and problems created by the tsunami was social and public. For example, sharing experiences or feelings with others, as a kind of witnessing or collective consoling, was the most common response cited by the participants in our study. This has also been identified in previous studies conducted with disaster victims (4,5) and challenges the notion that coping is primarily individual.

Our findings further indicate that religion provided the primary framework for making sense of and responding to the tsunami, either as an active response (i.e., engaging in religious performances) or an emotional resource (i.e., faith). The role of religious or spiritual beliefs and how they contribute to recovery following natural disaster has not been much studied in the past (24), especially in South Asian cultures (25). The studies that have been conducted in Western countries with disaster survivors indicate that strong religious faith and beliefs are linked with lesser symptoms of emotional distress (11,13), whereas negative religious coping is often associated with greater distress. This was supported by our findings, in that those who talked of “loss of faith” appeared to suffer more long-term emotional distress. According to many participants, some of the religious practices contributed to relaxation and emotional well-being. The limited number of studies examining the impact of religious and traditional healing on coping has suggested positive effects, especially among non-Western communities (26). This indicates the importance of proper recognition and understanding of social and religious interpretations of coping, adaptive capacity, and resilience in different cultures.

Participants often emphasized the importance of cohesive communities and extended families as sources of help. The strength of social support in enabling individuals to cope with emotional distress consequent on trauma has been commonly identified in previous studies conducted in both Western and non-Western countries, and these have further highlighted the risk of long-lasting mental health problems in the absence of support (4,9). In line with previous findings, the results of this study indicate that a number of informal and formal sources, such as official organizations, mental health professionals, extended family members and friends, religious leaders, and school teachers, can provide psychological and practical support. In collectivist or sociocentric societies, emotional interdependence and protection are much encouraged (27). However, extreme natural disasters, such as the Asian tsunami, that affect entire communities can severely impact on the availability of otherwise naturally occurring supports, leaving individuals and communities struggling to cope – in the early days, desperately so.
Provision of professional psychological support for traumatized population has a long history, beginning at the very least with First World War veterans (28). The findings from this study suggest that availability of professional psychological support was minimal during the post-tsunami period in Sri Lanka. In a country with 21 million people and just 25 specialist psychiatrists (29) and no practicing clinical psychologists, the only available option for a majority of the survivors was relying on their own social, cultural, and religious supports. However, the question arises of whether such support is sufficient when whole communities are affected during a huge disaster like a tsunami or in situations where the degree of collective trauma engulfs the moral strength of families and communities, and if so what form this support should take. Many of the participants in our study neither placed much value on getting professional support nor did they conceive of the stress, grief, or worries as illnesses or conditions which needed professional help. Consulting a mental health professional is still uncommon among the majority of ordinary people in Sri Lanka, especially due to a high degree of stigma associated with being in contact with mental health services or to having someone who attends such services in the family.

There is only very limited research available on traditional healing practices which are used to treat those with mental health problems in Sri Lanka. Somasundaram et al (30) indicate that most of the traditional healers have received training and developed skills in some kind of healing practice. Many traditional healing practices in Sri Lanka are a combination of Ayurveda, Siddha, and local and spiritual practices. Usually members of the patient's family are present during the healing sessions – a marked contrast to Western psychotherapy in which families are usually excluded – which often comprise prayers, songs, and herbal massage. Usually Ayurvedic or local treatments include a lengthy conversation with the practitioner about patients' living circumstances or well-being along with a physical examination (31), and this provides opportunities for patients to discuss their social and emotional state in a less stigmatizing way.

There are numerous accounts of the support provided by religious organizations and leaders especially in offering shelter, collecting and distributing relief material, and implementing resettlement programs (25). The findings from this study extend this and suggest that religious leaders can play a significant role in providing emotional and psychological support.

Leaving aside the obvious need for immediate material and practical aid to assist those injured and displaced by disaster, the findings from this study suggest that long-term mental health may be promoted by supporting the re-establishment of those naturally occurring resources through which communities traditionally respond to suffering. In the Sri Lankan context, facilitating reunion of affected family members during the period of displacement and allowing them to live in close proximity in resettlement programs may have been a simple achievable step to ensuring access to informal support for those most affected. Along similar lines, rehabilitation efforts that seek to re-establish social and cultural customs and events may create opportunities for the kind of sharing and witnessing that, according to many participants in this study, can promote recovery. Conversely, relief efforts that are perceived to be unfair and corrupt can have the opposite effect of eroding the very cohesiveness of communities that could facilitate recovery – or at least this appears to be the case in Sri Lanka.

Concerning psychological interventions and mental health care, the data from this study suggest that these cannot simply be imported into settings unfamiliar with, and perhaps distrustful of, the individualized model of Western psychotherapy and psychiatry. Going further, the accounts of participants in this study support the Inter-Agency Standing Committee (IASC) guidelines on mental health and psychosocial support in emergency settings (32). It is imperative to consider and better understand local cultural beliefs about misfortune, mental health, and health before designing any mental health intervention. Further, where, as is the case in Sri Lanka, mental health services are underdeveloped, the provision of services in the aftermath of disaster may meet with limited uptake. The issue is, then, broader and concerns the development of mental health services outside disaster situations. Indeed, it is arguable that to focus on provision of mental health care during times of disaster (important and essential as this may be) misses the point that such provision, in countries like Sri Lanka, will inevitably falter while ever mental health care in general remains marginal. What this means is that, when disaster does strike, already devastated communities will have to draw from what limited resources remain to protect the mental health of those most affected.

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