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Research Article

Spirituality: A key factor in coping among Iranians chronically affected by mustard gas in the disaster of war

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Abstract The present study aimed to explore the approach used by Iranians chronically affected by mustard gas in the disaster of war to cope with their chronic illness complications. A qualitative approach was adopted using content analysis of unstructured interviews carried out with 20 patients in a medical center in Tehran and an outpatient clinic in the North West of Iran. Two main themes that emerged from the study were "religious sentiment" and "patriotism". The subthemes that emerged were "divine will", "illness as a means of absolving sin", "saying prayers in the anticipation of divine rewards", "defending the motherland" and "self-sacrifice as a source of pride". To sum up, spirituality was recognized as a key factor among the participants in accepting and coping with their chronic illness complications.

Key words chemical warfare victim, coping, disaster, mustard gas, patriotism, spirituality.

INTRODUCTION

Mustard gas (MG) was a widely used chemical warfare agent during World War I and more recently in the Iraq-Iran war from 1980 to 1988. More than 45 000 Iranians are suffering from late respiratory complications due to mustard gas exposure (Ghanei & Harandi, 2007). A few people die instantly due to exposure to MG, but most suffer from its long-term complications (Ghanei & Adibi, 2007). Sulfur mustard has been shown to induce a vast array of pathological effects in affected persons (Hassan *et al.*, 2006). In a study on the complications of sulfur mustard 13–20 years after exposure, lungs (42.5%), eyes (39%) and skin (24.5%) were found as the most common sites of the complications (Khateri *et al.*, 2003). In addition, bronchiolitis has been known to be among the main pathological features of lung lesions in MG-exposed patients. Moreover, according to newly published studies, bronchiolitis obliterans should be considered as a major long-term sequela following MG exposure (*Ghanei et al.*, 2006).

Available studies concentrate on the physical aspects of MG, but its late complications can influence psychosocial aspects. Several studies have illustrated that delayed complications due to MG exposure cause chronic diseases. Hence, patients' problems will be progressive and irreversible (Khateri *et al.*, 2003; Zarchi *et al.*, 2004; Ghanei *et al.*, 2006). Although exposure to MG is now considered a chronic illness, a cure remains elusive, the disease remains life-threatening and health-care providers are involved in the care of chemical warfare victims across varying health-care settings. Chronic illness is a common situational crisis, affecting an individual with continuous or repetitive stress of physical pain and disability (Soneja & Nagarkar, 1999).

Illness is defined as a holistic complex state incorporating the physical, social, emotional and spiritual components (Neuman, 1995) and, therefore, a source of stress because of the corresponding demands on the individual. When the demand is perceived as threatening, unpleasant or overwhelming, it requires mobilization of resources to adapt and cope (Roberts & Fitzpatrick, 1994). Each patient's response to this stress is unique, and people with the same medical diagnosis and comparable disease progression might rate their quality of life differently (Delgado, 2007).

Having a chronic condition is associated with a relative decrease in health utility scores and a relative increase in mobility limitations, dexterity problems, pain, emotional problems (i.e. decreased happiness), cognitive limitations and decline in productivity and financial status, and disruption of the family and social life (Sawatzky *et al.*, 2007).

Coping reflects a process and includes active involvement over a period of time (Sigstad *et al.*, 2005). It is not only a way of regulating emotions, but has an interpersonal meaning, depending on its interactional context. In the medical field, coping has a mediating function for participation and shared medical decision-making in health-care processes (Schmidt *et al.*, 2003).

Coping also includes different strategies, but the total sum of the strategies does not constitute a global definition of the

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concept. Choice of strategies can influence outcome variables such as hope or quality of life positively or negatively (Rusten, 1998).

Spirituality is a coping method in wellness and in a variety of diseases (Cooper-Effa *et al.*, 2001). Based on Ellison (1983), spiritual well-being has been described as a twofold state, including a religious component (a positive specific relationship with God) and a spiritual or existential component (a sense of life purpose and satisfaction). Beliefs of a spiritual or existential nature can be a source of comfort, strength and support during times of illness or stress (Clee *et al.*, 2007).

The role of religion and spirituality in health has received increasing attention in the scientific and lay literature. While scientific attention to this issue has expanded, there continue to be methodological and measurement concerns that often prevent firm conclusions about health and adjustment benefits (Stefanek *et al.*, 2005). Patients with an enhanced sense of psycho-spiritual well-being are able to cope more effectively with the process of terminal illness and find meaning in the experience. Prognostic awareness, family and social support, autonomy, hope and meaning in life all contribute to positive psycho-spiritual well-being. Emotional distress, anxiety, helplessness, hopelessness and fear of death all reduce psycho-spiritual well-being (Lin & Bauer-Wu, 2003). However, the use of spiritual coping strategies may enhance self-empowerment, leading to finding meaning and purpose in illness. This implies that holistic care incorporates facilitation of various spiritual coping strategies to safeguard the wholeness and integrity of patients (Baldacchino & Draper, 2001).

Research studies highlight the role of spiritual beliefs in understanding and coping with illness, recovering from illness and making treatment decisions. However, there are still gaps in our understanding of the complexities of culture and spirituality. An increased understanding of, and respect for, cultural differences in spiritual beliefs and the effect of these beliefs on treatment preferences will lead to improved communication and reduced conflict in the care of patients of all ethnic groups (Johnson *et al.*, 2005).

Understanding spiritual beliefs within the context of cultural influence is critical for health-care providers. Therefore, the present study aimed to explore the approach used by Iranians chronically affected by mustard gas in the disaster of war to cope with their chronic illness complications in its cultural context using a qualitative approach and to provide some culturally based foundations for their care.

Background in Iran

From the beginning of the Iran-Iraq war, the Janbazan & Isargaran Affairs Foundation (JIAF) was established to provide war victims with physical and psychological services. However, it was only until recently that all patients received adequate attention from the Foundation because, at the beginning, the majority of problems the patients faced were not predictable. Now, the social services available to affected patients have increased.

Because chemical armaments have not been widely used after World War I, little is known about the late complications of exposure to such weapons. In addition, available studies in Iran and worldwide only focused on late physical complications (Madarshahiean, 2003). Thus, the main strengths of the present study are that it focuses on the psychological aspect of chemical warfare victims, especially those affected by mustard gas in the disaster of war, as studies investigating such patients' quality of life are sparse.

METHODS

The present study was part of a grounded theory PhD dissertation investigating the quality of life of people with delayed problems due to mustard gas poisoning. In this research, a qualitative approach was adopted using content analysis of unstructured interviews carried out with 20 patients in a medical center in Tehran and an outpatient clinic in the North West of Iran. Content analysis is a subjective interpretation of the content of text data through the systematic classification process (Hsieh & Shannon, 2005). This process uses inductive reasoning, by which themes and categories emerge from raw data under researchers' careful examination and constant comparison (Zhang, 2006). One characteristic of qualitative content analysis is that the method, to a great extent, focuses on the subject and context, and emphasizes differences between and similarities within codes and categories. Another characteristic is that the method deals with manifest as well as with latent content in a text (Graneheim & Lundman, 2004). The manifest content is when respondents' actual words form concepts, whereas themes are seen as expressions of the latent content (Priest *et al.*, 2002). It is worth noting that spirituality is underpinned by personal and cultural context in any community; therefore, qualitative research is the best method to study cultural context-bound subjects (Kairuz *et al.*, 2007).

Ethical considerations

The ethics committee affiliated with the Tarbiat Modares University and the Janbazan Medical & Engineering Research Center (JMERC) approved the study. The participants were informed about the study both orally and in writing and assured of confidentiality and anonymity. They were informed that participation in the study was voluntary and that they could refuse to participate or withdraw from the study without being penalized. Moreover, the participants were reassured that their responses would be kept confidential and their identities would not be revealed in research reports or in the publication of the findings. Last, informed consent according to the provisions of the Declaration of Helsinki was obtained from the participants who agreed to participate in the study.

Data collection and analysis

The research was conducted during the period December 2007 to June 2008. The study participants consisted of 20 patients who had all been diagnosed with delayed

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complications due to exposure to MG. They were selected from different age groups with varying severities of condition and varying years after initial exposure so as to reach a heterogeneous sample as possible. The participants had a mean age of 49 years (SD = 7.6). The majority of participants were male (90%) and their disease duration mean was 2.8 years (SD = ±1.2). Data collection was discontinued after the 20 interviews, because saturation of data was reached and no new information was gained from the last three interviews. Each interview lasted between 40 and 110 minutes.

The interviews were audio-recorded and transcribed verbatim and analyzed concurrently with data collection. Coding was carried out line by line, and comparative analysis of the excerpts was carried out. In the first phase, categories and themes in the data were identified and grouped into domains. The coding process was iterative, and categories and themes evolved (added, deleted and merged) as re-readings were completed and analyses progressed. In the second phase, the categories and domains were regrouped into major themes.

Credibility and conformability was enhanced through member checking, validation of emerging codes and categories in subsequent interviews, and debriefing with two supervisors. To establish inter-transcripts reliability, two experts carried out a second review. Almost all of the transcripts, codes and categories were rechecked and there was high agreement among the study team and advisors. Cases of disagreement were discussed to reach a final consensus.

RESULTS

Two main themes were extracted: "religious sentiment" and "patriotism". The first theme had three subthemes: "divine will", "illness as a means of absolving sin" and "saying prayers in the anticipation of divine rewards". Two subthemes related to the second theme were: "defending the motherland" and "self-sacrifice as a source of pride".

Religious sentiment

Divine will

The prevailing attitude of chemical warfare victims in coping with their illness was their religious sentiments; they viewed their illness as God's will.

> The choice is not mine. Any pain is difficult to bear. Sometimes, I am so short of breath, I reach a point when they have to thump me on my back to help me breathe. But I have never considered death. Cure or death . . . that is also his will. He can take me whenever he wants, and if He doesn't wish to take me nothing is going to change. Sometimes I am truly suffering; I am really in pain, my skin hurts or is itching. Yes, there are such distressing times. But, one has to put one's trust in God . . . (Male, 53-year-old)

Some of the participants considered their pain, disease and suffering as God's gifts and God's ordinance.

> I think God wanted to test me to absolve me of my sins. I think that is why I was not martyred, I stayed alive; a chemical warfare victim. He doesn't want me to effortlessly join the legion of martyrs.

> Another remarked: "Without God's will, even a leaf will not fall off a tree; so God had wished for me to end up like this (Male, 43-year-old).

Another factor that helped patients to cope was saying prayers in order to come to terms with their illness. Despite having physical problems and feeling frail, most participants were fulfilling their religious duties, and viewed these as a source of tranquility.

> I perform my daily prayers. If I feel down, I read the Quran, I recite blessings upon Imam Hossein, and then I feel I am leading a calmer existence. If I want to just pursue fun and pleasure, or not value religious matters, it'll be more difficult for me (Male, 58-year-old).

Patients prayed in spite of having debilitating disease and considered it a source of tranquility as well as the infallible Imams [the descendents and infallible caliphs of the holy prophet of Islam] attention to them, because they emphasized the infallible Imams as the main source of granting their wishes.

> I performed my daily prayers even when I was in the worst state. I went (to war) for God. Whatever I need, I ask God and the infallible Imams. I am content that either way Imam Zaman [The Messiah; the final descendant of the holy prophet of Islam] is watching over us (Male, 41-year-old).

> This is the source of morale and motivation. I strengthen myself with prayers and supplication (Female, 49-year-old).

Illness as a means of absolving sin

Some of the participants believed that their condition and suffering was an opportunity God has given them to purify them of their sins.

> I know that for each and every cry, for each moment of pain and suffering, up in heaven some new reward is arranged for me, and some of my sins are forgiven (Male, 55-year-old).

> When I am in pain, I become someone else; I reach the apex that I am yearning for, and I know that this pain and suffering is not in vain. One other participant stated: Now that I am lying down on this bed, and I am in pain, I tell myself that my support, my pillar, is God. Then I feel calm. Another said: Maybe we had sinned, or there is a justification for it so that we can get cleansed (Male, 53-year-old).

Saying prayers in the anticipation of divine rewards

Some participants believed that in return for their illness they have already received rewards, such as being blessed with a

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good family or that God would be rewarding them after death. They considered their illness as a sign of God's attention, as being favoured by God.

> Maybe, it is because I went to the warfront that I have a good wife, a good mother, good brothers, who are helping me. Maybe it was God's will that we'd be like this (Male, 39-year-old).

> We are content that this has been God's grace. I am really saying this from the bottom of my heart. We went to the battleground, were subjected to the chemical attack. I no longer have a guilty conscious. Just the act that God favoured us and included our names among those who were willing to give up their lives for Islam's holy Imams (is enough). I am really happy from the bottom of my heart (Male, 41-year-old).

In considering the Persian proverb "Where one door shuts, another opens", participants believed that God had given special attention to them and cared for them. For example:

> Regardless of all the problems that I have; I've tried to run the house and manage and not let my family suffer. Of course God is helping; and when God helps everything progresses [well] (Male, 48-year-old).

Patriotism

Defending the motherland

This subtheme was reflected in the participants' belief that their injuries were a worthwhile sacrifice in order to protect the motherland and their fellow citizens.

> Not only had me, but also my comrades have chosen this path for God, for the sake of the people, for you, for the country (Male, 43-year-old).

Participants went to the war voluntarily and they mentioned this as being part of their duty in order to defend their motherland, relatives and families. Therefore, they did not have any regrets about it.

> We went to [war] because it was our duty. Of course, I am not ungrateful [to God] either. I went [to the front] so that my sister, my mother could be at peace (Male, 48-year-old).

> I am not even upset that I went to the warfront [and] that I ended up as a chemical weapon's victim. It was my wish [to go to the front]; I went [because I chose to go]. Or we went to war because we felt it was our duty. Even now, if [a similar] situation occurred; we would go to war again. We consider it our duty to defend our country; Even now I am prepared to give my life for my country (Male, 41-year-old).

Self-sacrifice as a source of pride

Participants felt that volunteering to go to war was a source of pride for them and for their families. This factor also helped them to cope with their illness.

> My children feel a sense of pride. I am proud too, because we volunteered to go to the warfront. There was no force, no coercion. We were totally willing and eager to go (Male, 39-year-old).

> My girl tells me: I am proud of you father. She enjoys that her father made a self-sacrifice. My wife is proud of me. If necessary, I will be first person who goes to the warfront (Male, 51-year-old).

DISCUSSION

The present qualitative study describes how Iranian chemical warfare victims cope with their illness. The current study has illustrated that one of the most important factors that helps patients cope with their illness is their religious sentiments. The findings are significant as they reveal that the lived experiences of connectedness with their God, and the search for meaning and purpose appear to be important spiritual coping mechanisms during chronic illness. In the context of Iranian society, where the vast majority of the population are Muslim, and a religious culture is dominant in the society, it is expected that religious sentiment would be a coping mechanism.

In our study, the participants believed in their disease as a spiritual fate, a test bestowed on them by God. As they believed all power rests with God, they surrendered themselves to their fate. Muslims use their religion to achieve to high spiritual levels and Islamic culture differs significantly from other cultures. This finding was similar to that of other studies (Ashing *et al.*, 2003; Taleghani *et al.*, 2006). Several earlier studies in Iran have indicated that prayers and spiritual healing were the most commonly used methods of complementary therapies (Montazeri *et al.*, 2007; Seyedfatemi *et al.*, 2007). Based on a report by the Ministry of Culture and Islamic Guidance, in a recent national survey on Iranians' values and attitudes, over 80% of Iranians performed their daily prayers regularly as part of their religious commitments (cited in Montazeri *et al.*, 2007). Therefore, it is possible to say that the use of various forms of complementary medicine that are used in the West are rarely used by Iranian patients (Montazeri *et al.*, 2007).

Another aspect of religion helping the patients in the fight against their disease were their views; the motivator for this was that patients believed that their illness was an indication that God was testing them, as mentioned in the Quran. God examines people in different ways so that the true believers can be found and rewarded with moral happiness after death. The Quran, Chapter Baqarah, Verse 155 says:

> Be sure we shall test you with something of fear and hunger, some loss in goods or lives or the fruits (of your toil), but give glad tidings to those who patiently persevere.

Every Muslim learns their prayers from a young age and prays five times a day. In addition, those who seek guidance from the holy Quran and believe that it has power over every aspect of their lives, expect and welcome any eventualities in

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their lives (Quran, Chapter Balad, Verse 4). They consider life challenges and hardships as tests and as divine will: When under pressure they hope for solutions to their problems and see the future as bright. They feel that some of the difficulties they encounter are the result of their own sins and improve themselves to prevent future problems (Quran, Chapter Shuri, Verse 30).

Psychological tranquility is seen as a reflection of having God in mind (Quran, Chapter Ra'd, Verse 38) and it is recommended that at times of difficulty one should seek help through daily prayer, feasting and have patience and remember God. Also, peace of mind is considered a state that God places in the hearts of believers (Quran, Chapter Fath, Verse 4).

These results are in accordance with religious instructions and especially the verses in the Holy Quran, and the previous studies that considered religion as a factor of subjective well-being (Hadianfard, 2005).

It is crucially important that health professionals understand how religion and spirituality can significantly influence how people throughout the world cope with life-threatening illness. More than 80% of recently published studies found that religion contributes to a psychological or physical health benefit in people's lives. The common emphasis of religions on relationships – to God, to self, and to others – may have important mental health consequences, especially with respect to coping with poor health such as chronic illnesses. Specifically, religious beliefs and practices reduce the sense of loss of control that chronically ill patients may feel (Choumanova *et al.*, 2006). In addition, it was found that patients who did not have religious faith had a greater amount of unmet psychosocial needs, possibly because they were unable to find supplementary support from their religious communities or in their relationship with God (Choumanova *et al.*, 2006). Furthermore, evidence suggests that patients with strong religious beliefs and high levels of religious activity experienced lower levels of pain than non-religious patients (Yates *et al.*, 1981).

Büssing *et al.* (2009) reported associations between spirituality/religiosity and positive appraisals. Also, internal adaptive coping strategies indicated that the utilization of spirituality/religiosity went far beyond fatalistic acceptance, but could be regarded as an active coping process.

In the current study, chemical warfare victims pointed to a strong religious sentiment, a sense of duty towards the country, and a primary motive to be part of the war efforts. The victims believed that the war was a "sacred defense" and therefore viewed it as a source of pride for themselves and their families, which could also help them to deal with their illness. This was because the victims had not been injured or disabled accidentally, but their condition was a consequence of ensuing a righteous path. Ebrahimi *et al.* (2002) also reported that there was a direct link between volunteering for the war and subsequent emotional well-being; the volunteers reported meaningfully lower levels of depression. The findings may be an indication of accepting responsibility for the accident, an internal source of control, a firmer belief and a stronger faith in the chosen path and the ultimate goal.

Veterans with the lowest degrees of depression significantly used effective and focused coping strategies, such as resorting to religion, active coping, planning, seeking social support and positive interpretation. Moreover, veterans with the highest degrees of depression enjoyed less social support and reported to having more interpersonal problems as compared to those who had a low degree of depression. In addition, employment and volunteer service at the front – an index of belief and focused internal control – proved to be much less related to depression (Ebrahimi *et al.*, 2002).

Patriotism is a coping factor when taking part in war voluntarily and is introduced as a value and a belief; however, sometimes it brings the reverse result (Hokana, 2007). Conversely, veterans become distrustful of those who equate patriotism with belief. Some have very strong feelings about the war and its cost. Thus, in adapting to combat, as in all survival-relevant activities, humans respond holistically. Their physical, intra-psychic and social states form the matrix of factors that influences their responses to environmental danger. In combat, deep urgings for individual survival often conflict with socially conditioned expectations, requirements and desires for "soldierly conduct" that have been embodied in ideals such as patriotism, discipline, loyalty to comrades and identification with a leader. (Jones, 1995)

In addition, Iranians are very social and emotional people, so that helping each other, maintaining friendships and complimentary rituals such as apologizing are prominent attributes in society (Seyedfatemi *et al.*, 2007).

Therefore, we argue that spiritual well-being has an association with a better perception of life control. While the association exists for both existential and religious well-being, the association with existential well-being is stronger. If a person is spiritually healthy existentially, that person has greater life satisfaction and life direction, as measured by the present study (Cooper-Effa *et al.*, 2001). Wong *et al.* (2008) in their study showed that nurses having a satisfactory understanding of spirituality and appreciated providing spiritual care to patients. The present study can be a starting point for more consideration of cultural context findings on coping with the chronic complications of chemical warfare. However, we realize that the generalizability of this study's findings may be limited due to sample size, culture and location.

CONCLUSION

The present findings suggest that effective spiritual coping strategies help individuals to find meaning and purpose in their illnesses. Identifying the coping strategies used by this patient group and reinforcing them can lead to an enhanced ability to deal with the illness, and it enables them to achieve improved health and therefore a better quality of life. It is recommended that similar studies should endeavour to address issues such as religious beliefs, increased social status and stressful factors. Also, further prospective studies involving interventional approaches to coping strategies and enhancement of spirituality are warranted. Man is a spiritual being. More effort should be placed on the development of that spirituality to enhance further wellness and quality of

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life. Thus, it is hoped that the findings of this study will help to guide health-care providers, especially international nurses, as front-line staff to patients and their families, by giving them a greater appreciation of the importance of spiritual care and understanding of Muslim patients who use their religious beliefs to cope with chronic illness. Moreover, the world needs to better understand that the use and long-term effects of mustard gas did not end with the First World War. Iran today has many victims who are trying to cope with this health disaster.

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