



# Self-Care Strategy in Chemically-Injured Veterans: A Content Analysis

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## Abstract

**Background:** Self-care is a vital aspect of the holistic nursing of patients with chronic diseases, yet self-care strategies used by veterans who were injured by mustard gas, are not clearly identified. Therefore, the current study aimed to determine some self-care strategies for chemically-injured veterans.

**Methods:** The current qualitative study was conducted based on the conventional content analysis approach. Data collection comprised of 16 semi-structured interviews with chemical veterans. The purposive sampling method was used up to data saturation, and data analysis was conducted using Lundman and Graneheim's qualitative content analysis method.

**Results:** Data analysis resulted in the extraction of a main theme (using protective behaviors) with 4 sub-categories (setting activities, trying to adapt, trying to be independent, and seeking information), that represent the experiences of chemical veterans in regard to self-care behaviors.

**Conclusions:** Protective behaviors in chemical victims originate from their personal, social, cultural, and religious backgrounds. Identifying these behaviors can guide protective health care system policies.

**Keywords:** Self-Care, Protective Behaviors, Chemical Victims, Content Analysis

## 1. Background

According to the world health organization (WHO), self-care refers to the ability of individuals, families, and communities to promote health, prevent diseases, maintain health, and also cope with morbidity as well as disability (1). These activities are performed either by people individually or in collaboration with professional experts (2,1). In addition, self-care is a purposeful task to maintain an individual's health status, which they, their family members, and the community should respect (1). Self-care is an active and dynamic phenomenon and people should have the authority to select a suitable self-care method based on their health status (3).

Self-care is necessary to manage chronic diseases (4); the effective management of long-term sickness and its resultant pressure on patients, healthcare staff, and service providers, is the main goal of healthcare policies (5). Self-care is the patients' decision making process in the real world and also refers to the behaviors that the patients use to maintain their mental stability and respond to symptoms of disease (6). However, self-care is a complicated concept in patients with chronic diseases and in spite of

new findings regarding it in reported nursing studies, literature reviews indicate that more research is necessary in this regard (7).

Chemical weapons can cause chronic diseases (8, 9). During the last century, chemical weapons caused significant damage to the society and are still considered as a matter of great concern worldwide. According to WHO reports, chemical warfare caused injuries to 1300,000 victims and 90,000 deaths (10).

Sulphur mustard, commonly known as mustard gas, was one of the most widely used chemical warfare agents (CWAs) in the past century (11). Iraq was the biggest consumer of mustard gas as a chemical weapon against Iran in 1983 - 1988, which caused the death of 25,000 people. This chemical weapon caused over 100,000 casualties among military and non-military individuals in Iran (10, 11).

A number of mustard gas victims are still alive and bear the physical and mental complications from their injuries as a part of their lives. After exposure, they gradually encountered pulmonary, ocular, and dermal complications, as well as cardio-vascular problems and mental disorders (9, 12, 13). Exposure to mustard gas also reportedly has effects on the blood and gastrointestinal systems,

causes complications in endocrine and peripheral nerves, and leads to genetic changes as well as different forms of cancer (14).

## 2. Objectives

Considering the different chronic complications in chemical veterans, identifying the appropriate self-care strategies is as important as other chronic diseases. Since self-care is a context-based concept, the current study aimed to identify self-care strategies for chemical veterans based on the conventional content analysis approach.

## 3. Methods

The study was approved by the ethics committee of the Shahid Beheshti University of Medical Sciences (No. IR.SBMU.PHNM.1394.217) and accordingly, ethical considerations were strictly observed. All subjects gave verbal consent to participate and were assured that their information would remain confidential. The goals of the study were thoroughly explained to all subjects and they were reminded that they had the right to withdraw from the study at any time.

The current qualitative study was conducted using the conventional content analysis method. Qualitative content analysis is a widely used research technique that subjectively interprets the (written) data and identifies themes as well as patterns (obvious or hidden) in the text (15). Self care is a complex and multidimensional concept that depends on personal experience and social, cultural, and religious contexts (16, 17). According to Pope and Mays (1995), the goal of a qualitative research has been defined as “the development of concepts, which help us to understand social phenomena in natural (rather than experimental) settings, giving due emphasis to the meanings, experiences, and views of all the participants” (18). Qualitative research is also performed by researchers due to the fact that this methodology can answer questions that quantitative methods cannot. It emphasizes on understanding experiences, attitudes, and behaviors, which have a profound effect on patients’ perception of health, health-seeking behavior, and commitment to treatment (19).

In the current study, 16 veterans of chemical warfare who were willing to participate and able to relate their experiences with self-care, were recruited using a purposive sampling method based on the maximum variation in the data (20). Data were collected through semi-structured interviews (20) done in the hospital, at their place of work, or the home of the subjects according to their willingness

to participate in the study. All interviews were conducted by a researcher and started with a general question: How does your disease affect your daily life and what do you do to cope with its consequences? Follow-up questions were then asked based on the subjects’ answers in order to achieve the goals of the study.

The time of interviews, which lasted 30 - 90 minutes (mean = 45 minutes), was set according to the health status of the subjects and their willingness to continue. Interviews were recorded on an (Olympus) automated digital voice recorder and then changed into computer recordable audio files. The interviews were transcribed verbatim.

Data were analyzed according to the Graneheim and Lundman method. First, recorded interviews were transcribed verbatim along with other data collected. Second, to gain a general understanding of the content, the subjects’ statements were read several times and meaning units and initial codes were extracted (21).

The following variables were used to evaluate the validity and reliability of qualitative data: creditability, dependability, transferability, and confirmability (22). Reliability of the data was also achieved through the author’s prolonged engagement with the subjects and participants, member check and external check (23).

To strengthen the dependability and transferability of the study, the precise steps of its methodology and the different categories as well as sub-categories were documented. The conformability of data increased through the diversity of the participants’ age, severity of illness or damage, and their level of education.

The study population included 16 male chemical burn victims with the age range of 41 - 61 years. Their disability ranged from 25% to 75%, and the level of education ranged from lower than a high school diploma to a PhD. By evaluating participants’ deep and rich descriptions, 750 initial codes were excluded. After several reviews, the codes were summarized and classified based on similarities and appropriateness.

## 4. Results

According to the analysis of the interviews, one main category (i.e., using protective behaviors) and 4 sub-categories (i.e., setting activities, trying to adapt, trying to be independent, and seeking for information) were extracted regarding self-care strategies (see Table 1). These results also indicated the continuous nature of self-care strategies in the chemical victims’ lives.

### 4.1. Setting Activities

Results obtained from participants’ experiences indicated the continuous existence of self-care strategies

throughout the life of chemical weapon victims. Setting activities was the first extracted sub-category. Participants chose their daily living activities and self-care behaviors according to their health problems after being exposed to chemical weapons. If the individuals' complications were more debilitating, the participant consciously employed the strategy of limiting his activities; victims with more abilities tried to perform their daily activities as much as possible, and may even participate voluntarily in the forums for chemical weapon victims.

"I try not to go out when there is air pollution; I usually try to rest at home instead of going out. I only go out for essential tasks."

"You know, if we have a few more activities and motion we have a difficult day; for example, we should adapt to our health status and rest immediately after physical activities or reach a place where we are mentally and physically comfortable, somewhere which is calm and we can relax."

In spite of their physical problems, chemical victims feel useful by voluntarily participating in forums dealing with chemical weapon victims' affairs, and by maintaining their social activities as much as possible. One of the chemical victims described his involvement in a peace forum as follows:

"Now, my health status is a part of me. These conditions have turned me into the person, which I am. I love to be a poster for my country. I want to show myself to the whole world to see the consequences of such horrible weapons. I hope my activities cause people of the world not to fight with each other anymore and not to look for weapons. I feel this is my duty to the end of my life to tell my story for everyone to understand how important it is to live together in peace and friendship. I get more self-confidence through participation in peace forums and look at life differently. I have made new friends in the forums and feel more support. Now, I believe that my mission is to strive to achieve world peace."

#### 4.2. *Trying to Adapt*

One of the chemical victims' self-care strategies is to try to adapt to the situation. The victim can cope better with his sickness by accepting the damages or complications caused by chemical warfare and therefore experience lower mental stress, and try to take better care of him or herself. Furthermore, the religious and patriotic beliefs of chemical victims are factors that help them accept their sickness and its complications, as well as lead to improving their self-care behaviors.

"The consultant physician said that you should take your self-care seriously. The toxic materials have affected your lungs as though your lungs were placed in the oven and then taken out like hamburgers! There it is. Now you

should adapt to it; by doing exercises or being patient or by any other ways you know. I tried to accept my new conditions and cope with it."

"A soldier who goes to war never knows whether he will get back healthy or not; for example, he may be killed there (similar to thousands of other martyrs). This is why, when I was injured, I said I accept the will of God; then I accepted it more easily."

#### 4.3. *Trying to be Independent*

Participants tried using independence as a self-care strategy. They avoided being dependent on others despite their physical weakness, but rather practice self-care as much as possible.

"I always want to stand on my own feet as much as I can. My family really wants to help me and I can understand it from their perspective. I really understand it, for example, when I want to lie on my mattress and pillow, my wife and children want to help me; they do not let me do that alone."

"Yes, there are some problems, because it is very hard for a chemical victim to go about his personal affairs. He wants to do all his personal tasks, but he should keep his health status in mind. Thank God! I am not using a wheelchair neither have I spinal cord injuries. We can empathize with those victims who use wheelchairs and we know how difficult it is for them to wait for someone's help. May their family do these things with love and without pity, but it is difficult for the victims. I try to stand on my own feet as much as possible. Now is the time for the victim to try and take care of himself, medically and spiritually to do his personal affairs and stand in his own feet in the remaining years of life and not be dependent on different people or organizations. He does it, he asks God to help him and goes on."

#### 4.4. *Seeking Information*

Since being exposed to CWAs, victims look for information from various sources to identify their sickness and improve their self-care. One of the chemical burn victims expressed his experiences of seeking for information as follows:

"In the first year of being a veteran, I searched "chemical victim" on the Internet and then read the results. I got information from other chemical victims who were my friends and asked them what they did to improve their health status, their diet, where they lived, and what they did for their itchy skin. They were in contact to share knowledge."

"I talked to those who had a history of corneal transplant such as Mr. ....; I asked him for his opinion of the procedure. He said that the corneal transplant may be accepted or rejected. He had already done it three or four

times. I tried to expand my knowledge and information because it is said “capable is he who is wise”; more knowledge, more ability.”

Discussion: Results of the current study indicated that victims of chemical warfare try to improve their self-care through using protective behaviors. They suffer from physical and mental problems caused by the chemical warfare agents (CWAs) and try to implement self-care strategies. Setting activities, trying to adapt, trying to be independent, and seeking information are their common daily activities.

Self-care includes activities that people employ to live a healthy life style. Long-term self-care can prevent further debility, and meet social, mental, and spiritual needs (5).

Setting activities is one of the ways in which chemical warfare veterans cope with their health status. The term “setting activities” emerged during the first interviews and was repeated several times throughout the analysis. A study, which was conducted in 2012 and based on the phenomenological approach, evaluated the experiences of Iranian chemical victims living with fatigue. Results of this study showed that the nature of fatigue experienced by chemical victims is a chronic condition (24). Since fatigue is a phenomenon that affects quality of life and daily activities (24, 25), it seems that chemical victims always try to manage their activities to prevent such fatigue.

In a qualitative study entitled “Achieving A Balanced Life In The Face Of Chronic Illness” (26), 10 patients with chronic diseases were interviewed. The key concept of “balancing life and illness” was extracted from the experiences of participants; patients with chronic diseases stated that they had to make constant adjustments to their lives. This finding was compatible with the experiences of chemical victims regarding setting activities.

Another protective behavior strategy that chemical veterans follow to improve their self-care is trying to adapt to their circumstances. Living with a chronic disease is a self-management process, which includes performing skills and tasks associated with adaptation to the illness (27). In a study by Ebadi et al. (2010), “the sources of adaptation” was one of the elements of quality of life, from the viewpoint of a chemical victim (28). This coping strategy varies in different kinds of chronic illness (29, 30); it seems that what differentiates adaptation of chemical victims from other chronic disease patients is their deeper reliance on religious values and their patriotic motivation to cope with their health status (14).

In another study done by Ebadi et al. (2008), chemical victims’ sources of adaptation to the complications from their exposure to mustard gas were classified into 4 main categories, including “religious, nationalistic factors, social support, and attitude towards sickness” (14). In the cur-

rent study, the victims even cope with the complications from their chemical injuries by relying on divine inspiration and patriotism; hence, the mental aspects of self-care behaviors are improved. Another study (2008) supports the premise that chemical victims accepted the complications from their chemical injuries by reliance on religious beliefs (31). Hasankhani et al. (2010) also reported that participants indicated religious beliefs as a way to cope and adapt to the consequences of mustard gas poisoning (12). These findings were similar to those of the current study.

Trying to be independent is another protective behavior of chemical veterans. Participants of the current study try to be independent despite having chronic diseases and/or disabilities. Despite receiving support from families and healthcare service centers, the subjects try to perform their daily activities as independently as they can to avoid dependence on others. In a study based on the systematic review approach, the preferences of patients with chronic obstructive pulmonary disease (COPD) and asthma were evaluated (32). Out of 30 relevant published articles, only 1 article named the patients’ preferences regarding treatment. Results of the study showed a high tendency among participants toward having autonomy to make decisions and be aware of their treatment process (32). These findings were consistent with those of the current study. According to the results of a review article in (2007), autonomy and being recognized as an independent person are associated with personal dignity (33). Meanwhile, in the recent years, considering personal dignity and respecting it increased in research of health sciences (33, 34). Respecting a person’s dignity is also considered as a guiding principle for a global movement toward being healthy (34, 35); the chemical veterans try to maintain their dignity by maintaining their autonomy and subsequently improve their self-care behavior.

Chemical victims experience long-term chronic complications following their exposure to chemical weapons, especially mustard gas (13, 36, 37). Although one of the great considerations of healthcare providers in chronic disease is knowledge transfer and patient’s education (38, 39). A lack of knowledge regarding the medical management of acute and delayed conditions of poisoning with mustard gas still affects victims, and is a great challenge for healthcare providers and specialists (40).

There are some chemical victim databases available in Iran that provide information for identifying and coping with chemical injuries such as in the Tehran peace museum (41), the chemical victims’ caregiving center (42), and the Society for chemical weapons victims support (43).

Chemical victims who participated in the current study sought information about improving their self-care strategies and wanted to find answers to their questions

**Table 1.** Main Category and Sub-Categories of Self-Care Strategies in Mustard Gas Chemical Veterans

Primary Sub-Category	Sub-Categories	Main Category
Participation in daily and social activities	Setting activities	Using protective behaviors
Limited daily and social activities		
Trying to adapt to the work place	Trying to adapt	
Trying to adapt with stressful situation		
Trying to adapt to physical complications		
Trying to be independent		
Not dependent for doing things		
Trying to stand on own feet		
Trying not to depend on others for care giving		
Trying not to depend on the organization		
Trying to perform some daily living activities		
Commitment to own self-care		
Standing on his own feet for the rest of life		
Being self-reliant		
Trying not to be dependent on the oxygen		
Questioning the chemical weapon victim about his experience		
Looking for information on the Internet		
Trying to develop more abilities through more knowledge		
Trying to upgrade information		
Learning from doctors	Seeking information	
Learning from therapists after exposure to chemical weapons		
Studying educational issues about self-care behaviors in chemical weapon victims		

regarding chronic diseases. According to the experiences of these participants, information regarding chemical injuries was available from health care providers, their peers, the Internet, as well as published and library references. It seems that, despite the availability of educational resources for chemical victims to cope with complications of chronic diseases, educational requirements remain a crucial consideration.

The findings of the current study describe the protective strategies used by chemical victims to cope with the complications of their conditions and to improve their self-care behavior. Identifying such strategies can be considered as a fundamental framework for policy making as well as designing the protective programs to strengthen self-care of chemical warfare veterans. Since self-care is a multidimensional concept that depends on personal, social, cultural, and religious contexts, results of such studies also help to strengthen the context of performing self-care in chemically injured veterans.

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### Footnotes

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