

# Disaster Health Literacy of Middle-aged Women

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As disasters have been increasing in recent years, disaster health literacy is gaining more important for a population such as middle-age women. This is because they face developmental crises (menopause) and situational crisis (disaster). Due to the growing elderly population, it is imperative to seriously consider the issue of aging women's healthcare, and their educational needs relative to emergencies and disasters. The purpose of study was to clarify the importance of disaster health literacy for middle-age women. This study is a review of the literature using PubMed, ScienceDirect, Web of Science, Google Scholar, SCOPUS, OVID, ProQuest, Springer, and Wiley. Data was collected with keywords related to the research topic ("Women's health" OR "Geriatric health") AND ("Health literacy" OR "Disaster health literacy" OR "Disaster prevention literacy" OR "Risk knowledge" OR "Knowledge management") AND ("Disasters" OR "Risk" OR "Crises") in combination with the Boolean-operators OR and AND. We reviewed full text English-language articles published November 2011 November 2017. Additional references were identified from reference lists in targeted publications, review articles and books. This review demonstrated that disaster health literacy is critical for elderly women, because they may suffer from physical and psychological problems triggered by developmental crises such as menopause and situational crises such as disasters. Disaster literacy could enable them to improve resiliency and reduce disaster risk. Education has vital role in health promotion of middle-age women. Policymakers and health managers should be aware of the challenges of elderly women as a vulnerable group in disasters and develop plans to incorporate disaster health literacy for preparedness and prevention in educating this group. (**J Menopausal Med 2018;24:150-154**)

**Key Words:** Disasters · Health literacy · Middle aged · Risk management · Women's health

## Introduction

Being a woman or a man has a significant impact on health, as a result of both biological and gender-related differences. The health of women is of particular concern because, in many societies, they are disadvantaged by discrimination rooted in sociocultural factors. One of the socio-cultural factors that prevent middle-aged women from having the advantage of quality health services and attaining the best possible level of health are the social norms that

result in poor education and health literacy.<sup>1</sup> Middle-aged women have a lot of biopsychosocial changes. Menopause add physical and psychological problems. Depression, anxiety, osteoporosis and ischemic heart disease are some of the psychological and somatic problems. Therefore, the middle-aged women need to get education about the developmental crisis like menopause and situational crises such as emergencies and disasters. Since both being female and being old are known as vulnerabilities,<sup>2</sup> the improvement of women's health in crises is a key issue and within the scope of World

Received: July 29, 2018 Revised: September 11, 2018 Accepted: September 23, 2018

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Health Organization's Health Action in Crises<sup>1</sup> responsibilities. Inadequate preparation risks the ability of this group to independently obtain food, water, electricity<sup>3</sup> or access standard medical care in the post-disaster phase, which can result in previously managed chronic health conditions and cause significant medical problems that require hospitalization or lead into death. In addition the menopause may induce and exaggerate problems in disasters<sup>4</sup> and disaster has the potential to affect human health in many ways.<sup>5</sup> Disaster prevention training is intended to cultivate the skills and awareness needed to react positively and actively to disaster.<sup>6</sup> Therefore, disaster health literacy has a greater impact in the crises<sup>7</sup> and risk reduction.

Specifically, disaster literacy is defined as an individual's ability to read, understand, and use information to make informed decisions and follow instructions in the context of mitigating, preparing, responding, and recovering from a disaster.<sup>8</sup> Disaster health literacy is the ability to critically question health-related information, the health care system in general and then use this information to actively address the social, economic and environmental determinants of health.<sup>9</sup> It can play an effective role in sustainable development.<sup>10</sup> Educational and interventional programs about disaster health literacy are essential for middle-aged women.<sup>11</sup> That is because educated women showed a lower incidence of psychological and somatic symptoms.<sup>4,12</sup>

Disaster health literacy can be improved by asking stockholders to develop specific skills that increase the likelihood of using information sources and increase benefits.<sup>13</sup> Health literacy can establish link between individual's literacy skills and health outcomes or information.<sup>14</sup> Individuals have to develop disaster health literacy skills, face a variety of changes, and cultivate their abilities.<sup>15</sup> Low health literacy in older adults has increased mortality rates and burden of disease. Hence, health literacy is a vital factor in improving health.<sup>16</sup> An established goal of the Healthy People 2020 initiative is increasing the health literacy skill.<sup>8</sup> It includes knowledge, motivation and competence to access, understand, appraise and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, prevention and health promotion to maintain or improve quality of life. Low health literacy has also been associated with inappropriate use of emergency services, higher rates

of hospitalization, and increased health care costs.<sup>17,18</sup> Individuals with adequate literacy tend to more resilient.<sup>19</sup> These result show that negative outcomes in disasters and emergencies are more likely to be experienced by middle-aged women with low disaster literacy.

As inadequate disaster health literacy has been variously found to be a predictor of inappropriate health care. As a result, disaster literacy should be understood as a strategic priority inspiring the future shapes of the health care systems.<sup>18</sup> Health care professionals should assess clients' health literacy levels.<sup>20</sup> They also should provide information, advice, and support the client to cope with developmental changes (like menopausal symptoms) according to their needs and conditions. The assessment of menopausal health literacy may be also useful for developing crisis interventions to improve the coping behaviors of women with symptoms.<sup>21</sup> The Minimum Initial Service Package (MISP) is a series of crucial actions required to respond to reproductive health needs at the onset of every humanitarian crisis. MISP offers a plan for comprehensive sexual and reproductive health care, integrated into primary health care (PHC), as the situation permits. The goal of the MISP is to reduce mortality, morbidity and disability among populations affected by crises, particularly women. Some of the objectives and activities include: (1) To identify organizations and individuals to facilitate the coordination and implementation of the MISP; (2) To prevent sexual violence and provide appropriate assistance to survivors by ensuring systems and ensuring medical services including psychosocial support; (3) To reduce the transmission of human immunodeficiency virus by guaranteeing the availability of condoms; (4) To plan for the provision of comprehensive health services integrated into PHC.<sup>22</sup>

However, one of the problems in disaster health literacy is a lack of evidence-based practices for effectively disseminating messages to old populations.<sup>8</sup> There is a gap between the educational needs and skills to understand disaster risk. Therefore, this review can help to clarify the concept of disaster health literacy of the middle-aged women.

## Search Methods

This study was a review article. It was conducted from January 1, 2011 to November 2017 to assess published articles about disaster health literacy of middle-aged women. We searched databases including Google Scholar, Web of Science, ScienceDirect, PubMed, SCOPUS, OVID, ProQuest, and Springer, and Wiley. The data was collected with key words related to the research topic. Using Medical Subject Headings synonyms of the keywords were also extracted. Boolean-operators OR and AND were combined with keywords and entered in the search box of the databases as follows: (“Women’s health” OR “Geriatric health”) AND (“Health literacy” OR “Disaster health literacy” OR “Disaster prevention literacy” OR “Risk knowledge” OR “Knowledge management”) AND (“Disasters” OR “Risk OR “Crises”). We reviewed the full text English-language articles published between 2011 and 2017. Additional references were identified from reference lists in the targeted publications, review articles and books.

## Summary of Main Results

Recent disasters, and the likelihood of large-scale disasters in the future, make addressing and improving disaster literacy for the population, and in particular women, a pressing public health concern. Older adults at risk considered vulnerable are those who are at increased risk for adverse outcomes pre/during/post disasters due to a variety of factors that can include sensory and cognitive impairment, physical decline, and medical illness. In addition to preexisting medical conditions, other factors which are reported to negatively affect the ability to remain safe pre/during/post disasters include sex, age, social isolation, limited financial resources, low education, and low disaster literacy. Some factors are identified as important reasons for the development of literacy. Literacy can be improved through education and training, along with developing the ability to think about important questions, explain phenomena and use scientific evidence.

This review showed that disaster health literacy is important for middle-aged women because they may suffer from

physical and psychological problems caused by menopause as a developmental crisis and disasters as situational crises. Disaster literacy can help the middle-aged women to reduce disaster risk and to improve resiliency. Education has also an essential role in health promotion and disaster preparedness.

## Discussion

Nowadays, there are reports that show populations were inadequately prepared. Elderly women as a population that suffer from physical and psychological problems caused by menopause are vulnerable. They are susceptible to osteoporosis, heart disease, depression, post-traumatic stress disorder, sexually transmitted diseases such as acquired immune deficiency syndrome and hepatitis and so on. That is why disaster health literacy is important for them. Policy makers and managers have to find out resources on supporting and educating middle-aged women, or raising awareness among members of the particular health and safety concerns for older women in emergencies and disasters. Organizations responsible for disaster planning and educational programs have to routinely promote awareness about how to prepare for disasters, obtain safe shelter, cope with adverse events, initiate the recovery process, medical needs, mental health, education, food, nutrition and sanitation. Policy makers and managers have to pay attention to the specific needs of middle-aged women.<sup>23</sup> An urgent attempt is required for future policy development of the achievements of the Sustainable Development Goals to incorporate disaster health literacy, promoting a holistic approach to the empowerment of individuals specially women, families and communities.<sup>24</sup> Organizational and system factors can influence literacy, which in turn may affect acquisition of awareness and new knowledge.<sup>25</sup> Disaster risk reduction and its priority, “risk knowledge” can play an effective role in sustainable development. The inadequacy of disaster literacy research and development is disadvantageous to the safety of the middle-aged population. This article reviews the disaster health literacy of middle-aged women, proposes an attention for disaster literacy and emphasizes education and training for disaster risk reduction,

## Conclusion

Policymakers and managers should be aware of the problems of elderly women as a vulnerable group and have to plan programs to increase disaster health literacy and preparedness. Due to the growing elderly population, it is necessary for health organizations, especially in developing countries, to consider seriously the issue of elderly health-care and their educational needs in disasters.

## Acknowledgement

This study was a part of a PhD thesis supported by School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran (Grant No: IUMS/SHMIS\_1396.9323567001).

## Conflict of Interest

No potential conflict of interest relevant to this article was reported.

## References

- Garcia Moreno C, Reis C, Women's Health WHO/Geneva. Health in emergencies: Overview on women's health in crises. Geneva, CH: World Health Organization, 2005. [Cited by 2005 Jan 31]. Available from: <http://www.who.int/hac/techguidance/pht/womenshealth/en/>.
- Abbasi Dolatabadi Z, Seyedin H, Aryankhesal A. Policies on protecting vulnerable people during disasters in Iran: A document analysis. *Trauma Mon* 2016; 21: e31341.
- Cordero-Reyes AM, Palacios I, Ramia D, West R, Valencia M, Ramia N, et al. Natural disaster management: experience of an academic institution after a 7.8 magnitude earthquake in Ecuador. *Public Health* 2017; 144: 134-41.
- Jafari M, Seifi B, Heidari M. Risk assessment: Factors contributing to discomfort for menopausal women in work-place. *J Menopausal Med* 2017; 23: 85-90.
- Ghanizadeh G, Heidari M, Seifi B, Jafari H, Pakjouei S. The effect of climate change on cardiopulmonary disease: A systematic review. *J Clin Diagn Res* 2017; 11: IE01-4.
- Chou JS, Yang KH, Ren TC. Ex-post evaluation of preparedness education in disaster prevention, mitigation and response. *Int J Disaster Risk Reduct* 2015; 12: 188-201.
- Cai J, Song C. Do disaster experience and knowledge affect insurance take-up decisions? *J Dev Econ* 2017; 124: 83-94.
- Brown LM, Haun J. Literacy and disaster preparedness for seniors. In: Cefalu C, editor. *Disaster preparedness for seniors*. New York, NY: Springer; 2014. pp.249-60.
- Soellner R, Lenartz N, Rudinger G. Concept mapping as an approach for expert-guided model building: The example of health literacy. *Eval Program Plann* 2017; 60: 245-53.
- Kusmiadi A. Literacy for the 21st century: Promoting innovative literacy education in coping with natural disasters, Indonesia. Hamburg, DE: UNESCO, 2015. [Cited by 2018 Jun 4]. Available from: <https://uil.unesco.org/case-study/effective-practices-database-litbase-0/literacy-21st-century-promoting-innovative>.
- Koenig KL, Schultz CH. *Koenig and schultz's disaster medicine: Comprehensive principles and practices*. Cambridge, UK: Cambridge University Press; 2010.
- Kai Y, Nagamatsu T, Kitabatake Y, Sensui H. Effects of stretching on menopausal and depressive symptoms in middle-aged women: a randomized controlled trial. *Meno-pause* 2016; 23: 827-32.
- Suri VR, Majid S, Chang YK, Foo S. Assessing the influence of health literacy on health information behaviors: A multi-domain skills-based approach. *Patient Educ Couns* 2016; 99: 1038-45.
- Roundtable on Health Literacy, Board on Population Health and Public Health Practice, Institute of Medicine. *Implications of health literacy for public health: Workshop summary*. Washington, DC: National Academies Press; 2014.
- Shih BY, Chen CY, Chen CW, Hsin I. Using Lego NXT to explore scientific literacy in disaster prevention and rescue systems. *Nat Hazards* 2012; 64: 153-71.
- Sorensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health* 2012; 12: 80.
- Torres R, Nichols J. Health literacy knowledge and experiences of associate degree nursing students: A pedagogical study. *Teach Learn Nurs* 2014; 9: 84-92.
- Palumbo R, Annarumma C, Adinolfi P, Musella M, Piscopo G. The Italian health literacy project: Insights from the assessment of health literacy skills in Italy. *Health Policy* 2016; 120: 1087-94.
- Cook SB, Druger M, Ploutz-Snyder LL. Scientific literacy and attitudes towards American space exploration among

- college undergraduates. *Space Policy* 2011; 27: 48–52.
20. Jeong SH, Kim HK. Health literacy and barriers to health information seeking: A nationwide survey in South Korea. *Patient Educ Couns* 2016; 99: 1880–7.
  21. Suka M, Taniuchi A, Igarashi S, Yanagisawa H, Ishizuka B. Menopause-specific health literacy in Japanese women. *Maturitas* 2016; 91: 51–9.
  22. Women's Refugee Commission. Minimum initial service package (MISP) for reproductive health in crisis situations: A distance learning module. New York, NY: Women's Refugee Commission; 2011.
  23. Ahmadi A, Seyedin H, Fadaye-Vatan R. Towards age-friendly hospitals in developing countries: a case study in Iran. *Health Promot Perspect* 2015; 5: 42–51.
  24. UNESCO Institute for Lifelong Learning. Effective literacy and numeracy practices database. Hamburg, DE: UNESCO, 2018. [Cited by 2018 Jun 4]. Available from: <http://litbase.uil.unesco.org/?menu=14&programme=205>.
  25. Friedman DB, Tanwar M, Yoho DW, Richter JVE. Disaster preparedness information needs of individuals attending an adult literacy center: An exploratory study. *Community Lit J* 2010; 4: 55–73.