

GLOBAL CLIMATE CRISIS AND NURSING*

Rabiye Güney¹

¹ University of Health Sciences Hamidiye Faculty of Nursing, Department of Pediatric Nursing, Istanbul, Turkey

**This topic was presented at the Fourth International Conference "Health Care – a Contribution to the Quality of Life" June 9-10, 2023*

Introduction

The climate crisis was defined one of the most dangerous factors in the history that has negative effect on human health [1]. However, its effects on human health were not noticed at first, and it was portrayed in the media as an environmental disaster affecting polar bears [2]. The greenhouse gases (carbon dioxide, water vapor, methane, nitrous oxide) accumulating in the atmosphere because of the excessive use of fossil fuels, industrialization and urbanization led to global warming and as a result, extreme weather events have begun to be seen more frequently today [3, 4, 5]. Greenhouse gases have the function of keeping the temperature on the earth and preventing it from leaving the earth. The increase of these gases leads to an increase in global temperature. This phenomenon is called the greenhouse effect. [5]. Eventually global warming produces an increase in air temperature, rise in sea and ocean levels, droughts, floods, and fires [6].

The sudden change in climate and its devastating effects on the world have attracted more attention in recent years. The effects of the global climate crisis on human health began to be talked about more. However, it is possible to say that a significant portion of health professionals still regard global climate change as an environmental problem and have difficulty in associating it with human health [2, 7, 8, 9]. For this reason, students from the field of health want the subject of "the effects of global climate change on health" to be added to the curriculum. Nursing students in particular are very enthusiastic to learn about global climate change during their nursing education. [8, 10].

Effects of Global Climate Change on Health

Global climate change is “an urgent and potentially irreversible threat to human societies and the planet” according to the 2015 Paris Agreement [11]. It may have a direct or indirect impact on human health [7]. In an international study, it was calculated that global climate change causes about 400,000 deaths per year today, and this number will rise to 700,000 in the coming years [12]. According to research by Rocque et al (2021), in their systematic review, the most important health consequences of climate change are: infections transmitted by vectors, water or food; diseases of the respiratory, cardiovascular and neurological systems; mental health problems, problems related to pregnancy and childbirth; nutritional disorders; skin diseases and allergies; employee diseases and injuries; increased use of the health system; deaths and other health problems (such as arthritis, diabetes, kidney diseases, cataracts, heat stress and exhaustion, non-occupational injuries and sleep disorders) [6].

In recent years, heat waves have caused the death of tens of thousands of people by indirectly causing environmental pollution as well as urgent health problems such as heat stroke, which they directly cause [13]. In addition, the risk of neural tube defects and other anomalies is higher in the children of pregnant women who are exposed to extreme heat [14]. During the periods of heat waves, increases are expected in dehydration, electrolyte disorders, respiratory disorders, mental illnesses, heat exhaustion, heat stroke, heat cramps, cardiovascular diseases, cerebrovascular diseases, acute renal failure, and neurologic conditions at emergency services [13].

The elderly, children, those with chronic diseases and those working outdoors are among the most affected individuals by extreme weather events [15]. The increase in humidity in the air makes the negative effects of hot weather more severe [13]. Global climate change also jeopardizes food security as it poses a significant obstacle to efficient agriculture. This leads to reduced access to healthy food. Inadequate and unbalanced nutrition, on the other hand, opens the door to health problems and even leads to deaths due to hunger [16]. Global climate change has important effects on mental health as well as physical health. These effects can be direct or indirect. Since children are still in the developmental period, they are at greater risk for mental health problems. Specifically, the brain development of children can be affected more during the climate change process [17].

Sudden weather events such as floods, heat waves or fires, or events such as long-term sea level rise or drought, have rapid or lasting effects on children's health. As a result of such climatic events, infectious diseases, gastrointestinal complaints, parasitic diseases, malaria, injuries, heat-related health problems such as heat stroke, exposure to environmental toxins, malnutrition and death are more common in children [16, 17]. Emotions such as anxiety and anger about climate change, exacerbation of existing psychiatric problems, problems such as depression, post-traumatic stress disorder caused by crises such as migration, war, etc. as a result of climate change, decreased access to mental health services are the main problems associated with child mental health [17].

Nursing Considerations

Like all citizens of the world, the first responsibility of nurses is to contribute to the measures to reduce greenhouse gases that cause global climate change [18, 19]. Because the health sector is one of the sectors that contribute significantly to greenhouse gas production. [20]. In terms of health, the first goal of nurses is to prioritize preventive health services, as in other health problems [18]. Another issue is that nurses should be sufficiently equipped and knowledgeable about climate change and enlighten the society on this issue. Nurses' messages on climate change and health can have a stronger impact on society [21, 22]. Additionally, the most important responsibility of nurses is to provide the best nursing care by following up-to-date information on health problems caused by climate change. Finally, the nurse's response to social problems caused by climate change should be taking a position in line with the principle of "health for everyone" [23, 24, 25].

Conclusion

Global climate change has a strong effect on almost every dimension of the life on earth. It is obvious that many problems that will threaten human existence in the future are waiting for us if precautions are not taken now. The most important of these problems are health problems. Nurses will continue to work for preventing and solving these problems. In this context, it is one of the most important interventions for nurses to provide training to the society for increasing awareness of health professionals. The fact that nurses usually work with the most vulnerable groups makes this responsibility even more important.

Keywords: *Climate change, global warming, environment, health, nursing*

References

5. Pemberton, E., Ng, I., Lee, K., Harold, L., & Williams, D. L. (2023). Changing perioperative practice in the time of climate crisis. *Perioperative Care and Operating Room Management*, 32, 100317.
6. Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. *Journal of Anxiety Disorders*, 74, 102263.
7. Ansah, E. W., Ankomah-Appiah, E., Amodu, M., & Sarfo, J. O. (2021). Climate change, health and safety of workers in developing economies: A scoping review. *The Journal of Climate Change and Health*, 3, 100034.
8. Zhao, Q., Yu, P., Mahendran, R., Huang, W., Gao, Y., Yang, Z., ... & Guo, Y. (2022). Global climate change and human health: Pathways and possible solutions. *Eco-Environment & Health*, 1(2), 53-62.
9. Sarofim, M. C., Saha, S., Hawkins, M. D., Mills, D. M., Hess, J., Horton, R., ... Juliana, A. St. (2016). Ch. 2: Temperature-related death and illness. Retrieved from <https://health2016.globalchange.gov/temperature-related-death-and-illness>
10. Rocque, R. J., Beaudoin, C., Ndjaboue, R., Cameron, L., Poirier-Bergeron, L., Poulin-Rheault, R. A., ... & Witteman, H. O. (2021). Health effects of climate change: an overview of systematic reviews. *BMJ Open*, 11(6), e046333.
11. Ammann, P., Dietler, D., & Winkler, M. S. (2021). Health impact assessment and climate change: A scoping review. *The Journal of Climate Change and Health*, 3, 100045.
12. Liao, W., Yang, L., Zhong, S., Hess, J. J., Wang, Q., Bao, J., & Huang, C. (2019). Preparing the next generation of health professionals to tackle climate change: are China's medical students ready?. *Environmental Research*, 168, 270-277.
13. Schwerdtle, P. N., Maxwell, J., Horton, G., & Bonnamy, J. (2020). 12 tips for teaching environmental sustainability to health professionals. *Medical Teacher*, 42(2), 150-155.
14. Álvarez-Nieto, C., Richardson, J., Navarro-Perán, M. Á., Tutticci, N., Huss, N., Elf, M., ... & López-Medina, I. M. (2022). Nursing students' attitudes towards climate change and sustainability: A cross-sectional multisite study. *Nurse Education Today*, 108, 105185.
15. Sanson, A. V., Van Hoorn, J., & Burke, S. E. (2019). Responding to the impacts of the climate crisis on children and youth. *Child Development Perspectives*, 13(4), 201-207.
16. M. McKinnon (2012). Climate Vulnerability Monitor: A Guide to the Cold Calculus of a Hot Planet, *Estudios Graficos Europeos, SA, Spain*, p. 331.
17. The Health Effects of Climate Change, HarvardX PH278.Ax, (N.d.). Retrieved from <https://www.edx.org/>

18. Van Zutphen, A. R., Lin, S., Fletcher, B. A., & Hwang, S. A. (2012). A population-based case-control study of extreme summer temperature and birth defects. *Environmental Health Perspectives*, 120(10), 1443-1449.
19. Sinclair WH, Crowe MJ, Spinks WL, Leicht AS. Pre-pubertal children and exercise in hot and humid environments: a brief review. *J Sports Sci Med*. 2007 Dec 1;6(4):385-92. PMID: 24149468; PMCID: PMC3794475.
20. Sanson, A. V., Van Hoorn, J., & Burke, S. E. (2019). Responding to the impacts of the climate crisis on children and youth. *Child Development Perspectives*, 13(4), 201-207.
21. Vergunst, F., & Berry, H. L. (2022). Climate change and children's mental health: a developmental perspective. *Clinical Psychological Science*, 10(4), 767-785.
22. Castro-Sánchez E. (2023). Nursing care towards the global challenges of the climate crisis: If not now, when?. *Enfermeria Clinica (English Edition)*, S2445-1479(23)00031-0. Advance online publication. <https://doi.org/10.1016/j.enfcl.2023.05.002>
23. Kalogirou, M. R., Dahlke, S., Davidson, S., & Yamamoto, S. (2021). How the hospital context influences nurses' environmentally responsible practice: A focused ethnography. *Journal of Advanced Nursing*, 77(9), 3806-3819.
24. Schwerdtle, P. N., Maxwell, J., Horton, G., & Bonnamy, J. (2020). 12 tips for teaching environmental sustainability to health professionals. *Medical Teacher*, 42(2), 150-155.
25. Butterfield, P., Leffers, J., & Vásquez, M. D. (2021). Nursing's pivotal role in global climate action. *BMJ*, 373.
26. McDermott-Levy, R., Jackman-Murphy, K. P., Leffers, J. M., & Jordan, L. (2019). Integrating climate change into nursing curricula. *Nurse Educator*, 44(1), 43-47.
27. Nicholas, P. K. (2019). The Economics of Climate Change and the Intersection with Conflict, Violence, and Migration: Implications for the Nursing Profession. *Nursing Economic\$,* 37(1).
28. Zang, S. M., Benjenk, I., Breakey, S., Pusey-Reid, E., & Nicholas, P. K. (2021). The intersection of climate change with the era of COVID-19. *Public Health Nursing*, 38(2), 321-335.
29. Salas, R. N. (2020). The climate crisis and clinical practice. *New England Journal of Medicine*, 382(7), 589-591.

Contact:

Rabiye Güney
Canakkale Lapseki State Hospital, Turkey.
E-mail: rabiye.guney@sbu.edu.tr