

Risk of mortality among people with schizophrenia during the 2021 heat dome

The 2021 heat dome was one of the deadliest weather events in Canadian history,¹ and during that period schizophrenia was associated with a higher risk of death than any other chronic disease.² There were 134 deaths among people with schizophrenia in BC during the hottest 8-day period. This represents approximately 8% of all deaths during the event, even though people with schizophrenia represent only approximately 1% of the BC population. When deaths during the heat dome were compared with deaths on the same days in previous years, having schizophrenia was associated with a three-fold increase in the risk of death.² Despite these striking results, people with schizophrenia are not usually at the forefront of public health messaging about extreme heat events.

There are several interrelated reasons why people with schizophrenia may be at higher risk from extreme heat [Figure]. First, they may lack insight into their own health or experience disorganized thinking; therefore, they may not recognize the threat posed by high temperatures. Second, schizophrenia can lead to social isolation and economic marginalization, both of which are independent risk factors for mortality during extreme heat.³⁻⁵ Third, schizophrenia may co-occur with other conditions such as substance use disorder, diabetes, and hypertension, which increase heat-related risks.³ Finally, some

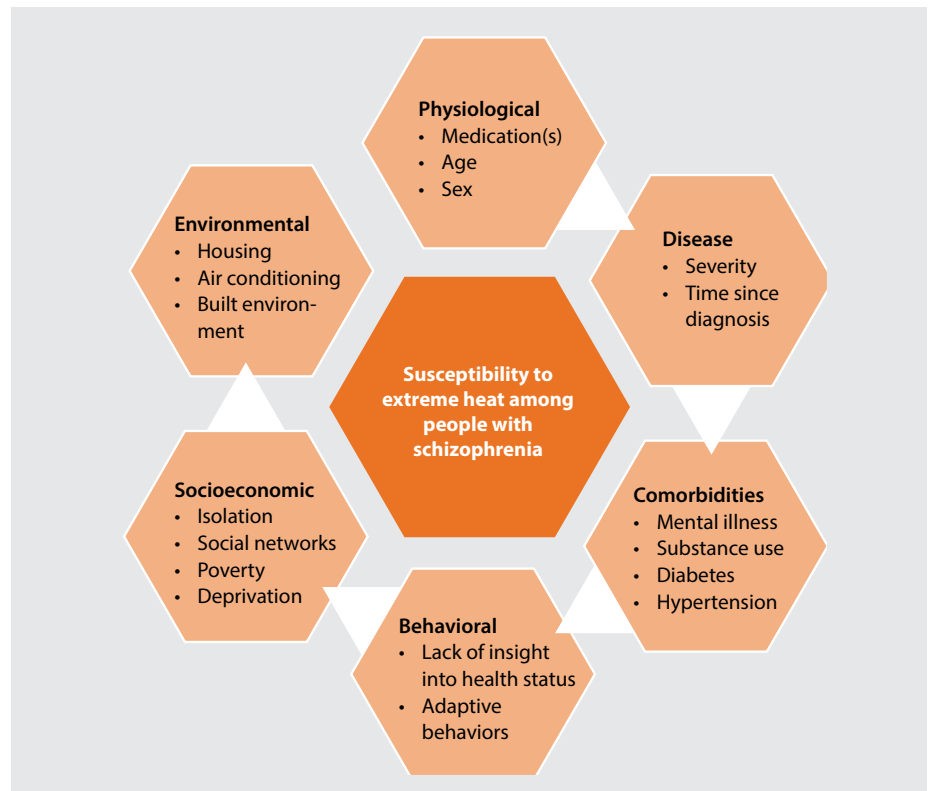


FIGURE. Intersecting risk factors for increased susceptibility to extreme heat among people with schizophrenia.

medications used to treat schizophrenia can affect thermoregulation and increase physiological susceptibility to heat.⁶ This is particularly true for antipsychotics with anticholinergic properties.

We used PharmaNet to identify medications dispensed to all people in BC with schizophrenia in the 90 days prior to the 2021 heat dome and compared dispensations among those who died and those who survived. Among those who died, 80% had been dispensed an antipsychotic medication, compared with 55% of those who survived.

We also found that 65% of those who died had seen a physician for a

schizophrenia-related visit in the preceding year. Clinicians are well positioned to communicate about extreme heat with patients who have schizophrenia and might be at high risk. A useful framework to protect patients can be found in *Current Psychiatry* (<https://cdn.mdedge.com/files/s3fs-public/CP02109027.pdf>)⁷ and a BC guide to prepare for extreme heat can be found at www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/severe-weather/extreme-heat.⁸ Clinicians may also have the opportunity to communicate with family, caregivers, and others who support people

This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.

with schizophrenia and can highlight the importance of health checks⁹ during hot weather. In-person or virtual checks can be used to assess how an individual is coping with extreme heat, encourage them to take protective cooling measures, and initiate assistance if needed.

People with schizophrenia are particularly susceptible to extreme heat, as demonstrated by the 2021 heat dome in BC. Although the side effects of antipsychotic medications can increase risk, the pathway between heat and health outcomes among people with schizophrenia is complex. Antipsychotic medications are lifesaving therapies, and they should not be discontinued or modified to reduce risk during extreme heat. Instead, those treating and supporting people with schizophrenia should focus on other risk factors associated with the condition, particularly social isolation and lack of access to air conditioning. By identifying, counseling, and checking in on those

at highest risk, we can reduce morbidity and mortality during future extreme heat events. ■

—**Shirley X. Chen, MPH**
Field Epidemiologist, Environmental Health Services, BCCDC and Public Health Agency of Canada

—**Michael J. Lee, PhD**
Epidemiologist, Environmental Health Services, BCCDC

—**David A. McVea, MD, PhD**
Public Health Physician, Environmental Health Services, BCCDC

—**Sarah B. Henderson, PhD**
Scientific Director, Environmental Health Services, BCCDC

References

1. Henderson SB, McLean KE, Lee M, Kosatsky T. Extreme heat events are public health emergencies. *BCMJ* 2021;63:366-367.
2. Lee MJ, McLean KE, Kuo M, et al. Chronic diseases associated with mortality in British Columbia, Canada during the 2021 Western North

America extreme heat event. *Geohealth* 2023; 7:e2022GH000729.

3. Ebi KL, Capon A, Berry P, et al. Hot weather and heat extremes: Health risks. *Lancet* 2021;398(10301): 698-708.
4. Stilo SA, Murray RM. Non-genetic factors in schizophrenia. *Curr Psychiatry Rep* 2019;21:100.
5. Liu J, Varghese BM, Hansen A, et al. Is there an association between hot weather and poor mental health outcomes? A systematic review and meta-analysis. *Environ Int* 2021;153:106533.
6. Löhmus M. Possible biological mechanisms linking mental health and heat—A contemplative review. *Int J Environ Res Public Health* 2018;15:1515.
7. Lim C, MacLaurin S, Freudenreich O. Preparing patients with serious mental illness for extreme HEAT. *Curr Psychiatr* 2022;21:27-28.
8. Government of British Columbia. Be prepared for extreme heat. Accessed 26 April 2023. www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/severe-weather/extreme-heat.
9. National Collaborating Centre for Environmental Health. Health checks during extreme heat events. 2022. Accessed 26 April 2023. <https://ncceh.ca/documents/guide/health-checks-during-extreme-heat-events>.

Attn: BC Doctors

PRACTICE CLOSURE



Retiring, Relocating,
Transitioning & Estates

RECORD SCANNING



Document Conversion -
Fully Searchable

RECORD STORAGE



Paper & EMR Record Storage
in accordance with CPSBC

RSRS 

www.RecordSolutions.ca
1.888.563.3732

WORKSAFEBC

Continued from page 156

References

1. Marrone J, Swarbrick MA. Long-term unemployment: A social determinant underaddressed within community behavioral health programs. *Psychiatr Serv* 2020;71:745-748.
2. Waddell G, Burton AK. Is work good for your health and well-being? London, UK: The Stationery Office; 2006.
3. Roelfs DJ, Shor E, Davidson KW, Schwartz JE. Losing life and livelihood: A systematic review and meta-analysis of unemployment and all-cause mortality. *Soc Sci Med* 2011;72:840-854.

SSC

Continued from page 157

—**Wendy Xu**

Department of Medicine, Faculty of Medicine, UBC

—**Jennifer Zhang**

Department of Medicine, Faculty of Medicine, UBC

—**Mei-ling Wiedmeyer, MD, CCFP**

Department of Family Practice, UBC



HDC Discover supports physicians and their Divisions to better understand healthcare needs in their community.

Dr. Julie Nguyen
Family Doctor, Vancouver



Scan to Learn More