TEMPORAL AND DEMOGRAPHIC TRENDS IN NON-HODGKIN LYMPHOMA MORTALITY IN YOUNG ADULTS: INSIGHTS FROM THE CDC WONDER DATABASE (1999–2023)

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Introduction

Non-Hodgkin lymphoma (NHL) ranks as the 6th leading cause of cancer-related mortality in the U.S., with incidence rising by 168% since 1975. Although overall survival has improved, young adults represent a vulnerable and often understudied group. This study investigates NHL mortality trends from 1999 to 2023 in U.S. patients aged 15–44, with an emphasis on demographic disparities.

Aim

To analyze national trends and demographic disparities in mortality from NHL among young adults in the U.S. between 1999 and 2023.

Objectives

- Evaluate temporal trends in age-adjusted mortality rates (AAMR) for NHL in young adults.
- Stratify mortality by sex, race, geographic setting, and U.S. census region.
- Identify high-risk subgroups for targeted public health intervention.

Methods

Mortality trends from 1999 to 2020 and 2018 to 2023 were analyzed using data from the CDC WONDER database. The study focused on deaths attributed to Non-Hodgkin lymphoma (ICD-10 code C85.90) among patients aged 15 to 44 years. Data were stratified by sex, race (Black vs. White), geographic location (metropolitan vs. non-metropolitan), and U.S. census region (Northeast, Midwest, South, and West). Temporal trends were assessed using the Mann–Kendall trend test, while t-tests were used to compare continuous variables. Statistical significance was set at $p < 0.05$.

Results

Overall Mortality:

- Total deaths: 19,145 (1999–2020) & 3,468 (2018–2023)
- AAMR decreased from 0.734 to 0.485
- Significant downward trend: $\tau = -0.919$, $p < .001$

Subgroup Trends (all $p < .001$):

- Sex: Male ($\tau = -0.877$), Female ($\tau = -0.856$)
- Race: White ($\tau = -0.883$), Black ($\tau = -0.807$)
- Region: Northeast ($\tau = -0.878$), Midwest ($\tau = -0.860$), South ($\tau = -0.845$), West ($\tau = -0.811$)
- Geography: Metro ($\tau = -0.965$), Non-Metro ($\tau = -0.965$)

Comparisons:

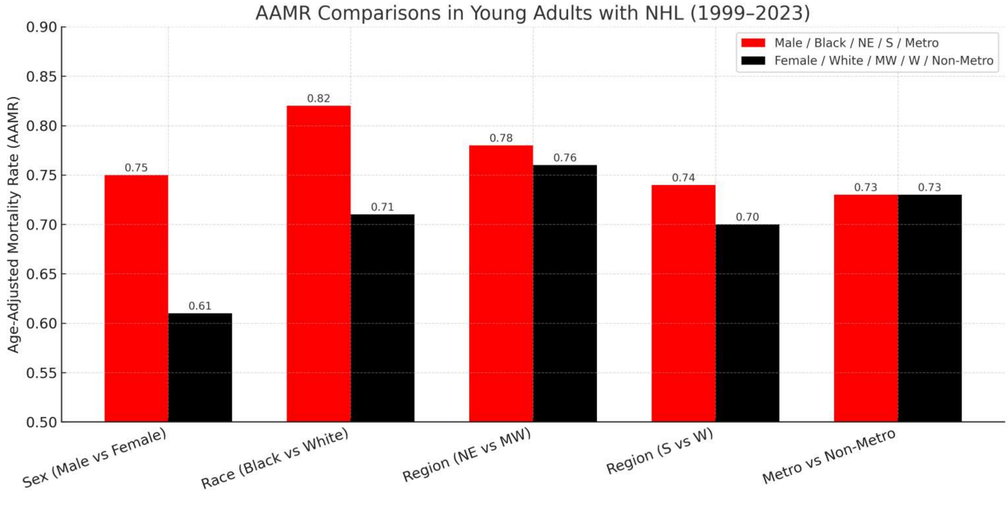
- AAMR higher in males vs. females ($p < .001$)
- AAMR higher in Black vs. White patients ($p < .001$)
- No significant AAMR difference by metro vs. non-metro ($p = 0.506$)

Summary

Age-adjusted mortality from NHL in young adults significantly decreased across all subgroups from 1999–2023. However, mortality remains disproportionately higher among males and Black patients.

Discussion

The declining mortality trend is encouraging, but persistent disparities by sex and race highlight systemic inequalities. These findings support the need for targeted interventions to reduce mortality in high-risk young adult populations and guide future public health strategies.



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