Advancement for All? Sociodemographic Predictors of Treatment Receipt as Barriers to Equitable Care in Hodgkin Lymphoma

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Background

While therapies for Hodgkin lymphoma continue to improve, sociodemographic factors may still influence whether patients pursue treatment — shaping who benefits from these advances and who is left behind.

Objective

To examine social determinants of treatment receipt among patients with Hodgkin lymphoma.

Method

- **Data source: SEER database**
- Categorical variables: multinormal approximation of multinomial distributions — Hotelling's T^2 test & Mahalanobis d
- Ordinal variables (age, household income, year): Mann-Whitney U-test & Cliff's ∂
- Two-sided hypothesis tests, $\alpha = 0.05$
- Effect size interpretation (Cliff's ∂ / Mahalanobis d): 0.2 small • 0.5 medium • 0.8 large
- Multivariable logistic regression + average marginal comparisons for chemo & radiotherapy, reported as adjusted risk ratios/differences (aRR / aRD, 95% CI)

Study Flow

SEER Database
2004-2022

↓

35,913 Patients
diagnosed with Hodgkin lymphoma

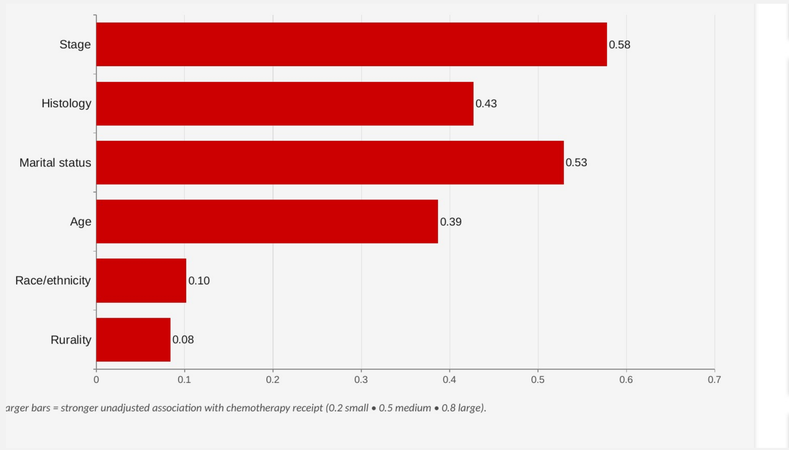
31,314 chemo	26,514 radio
4,599 no chemo	9,399 no radio

Results- Cohort

35,913
Patients diagnosed with Hodgkin lymphoma

31,314	25,514
Received chemotherapy	Received radiotherapy
4,559	9,399
Did not receive it	Did not receive it

Results — Unadjusted Disparities (Chemotherapy)



Larger bars = stronger unadjusted association with chemotherapy receipt (0.2 small • 0.5 medium • 0.8 large).

- No-chemotherapy group skewed: older, widowed, rural, Non-Hispanic Black
- Patients who did NOT receive radiotherapy were more likely: Hispanic or Non-Hispanic Black (0.124), widowed (0.154), rural (0.083)

Results — Adjusted Associations

Chemotherapy receipt: age, race/ethnicity, marital status, stage, histology, and year all remained significant after adjustment

- No-chemotherapy groups: older, Hispanic or Non-Hispanic Black, single or widowed
- **Radiotherapy receipt: sex, age, race/ethnicity, and marital status remained significant**
- Radiotherapy was less common among: females, older patients, Hispanic and Non-Hispanic Black patients, single patients
- *Household income was NOT significantly associated with either treatment*

Conclusion

Sociodemographic and psychosocial barriers — not just disease biology — shape who receives treatment for Hodgkin lymphoma. Identifying and addressing these barriers may improve treatment equity, outcomes, and patient satisfaction.

Take-Home Points

1. An equity gap in treatment receipt exists across race, marital status, age, and rurality.
2. These gaps persist after adjusting for stage, histology, and year of diagnosis.
3. Screening for psychosocial barriers may help close the gap in care.