

The Interplay of Donor-Recipient Relationship and Donor Race in Living Liver Donation in the United States

BACKGROUND

Living liver donation improves survival of end-stage liver disease patients. Yet, it continues to represent a small proportion of U.S. liver transplantation with existing racial disparities.

Objective: We sought to better understand donor subgroups with no significant increase in living liver donation over the last decade that may serve as potential targets for future interventions.

METHODS

Study population: The study participants consisted of living liver adult donors donating between January 2012 and December 2022 in the United States who were reported to the Organ Procurement and Transplantation Network (OPTN).

A total of 4,407 living liver donors from 2012 to 2022 (median age [IQR], 36 years [28-44], 55% female, 83% White, 13% Hispanic, 4% Black donors).

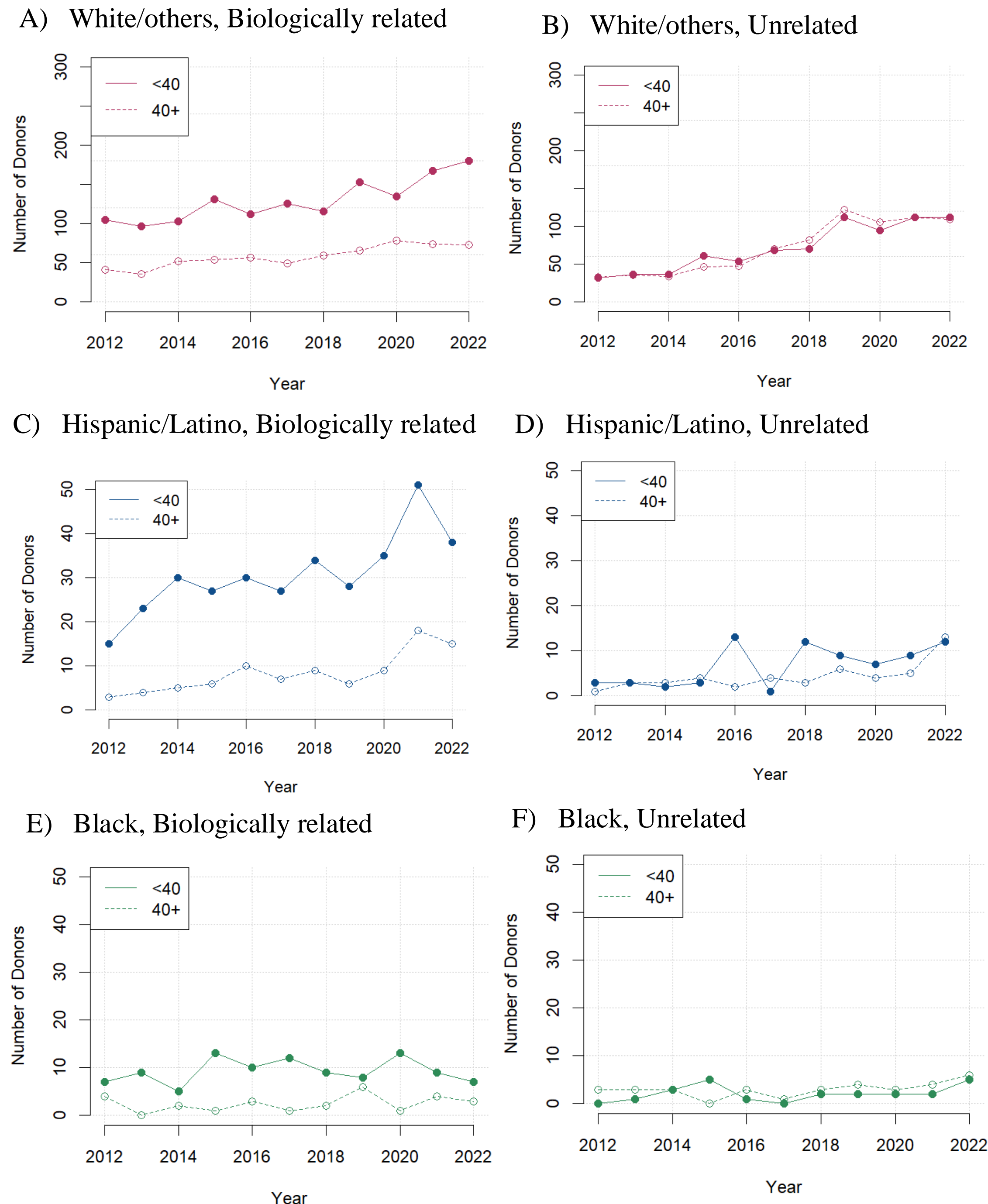
Methods: We used negative binomial regression models to estimate the change in the number of donors per 3-year increment (incidence rate ratio [IRR]), by donor-recipient relationship, race/ethnicity, and age.

We stratified our study population by donor type (biologically related or unrelated) due to significant historical trends in living donation in the United States that vary substantially by donor-recipient relationship.

Outcome: The outcome of interest was the change in the rate of living liver donation over time.

RESULTS

Observed Number of Living Liver Donors by Age, Stratified by Relationship with the Recipient and Race/Ethnicity in the United States from 2012-2022



Among biologically related donors from 2012 to 2022, the annual number of White donors increased from 146 to 253 (73% increase). Hispanic donors increased from 18 to 53 (194% increase). Black donors decreased from 11 to 10 (9% increase).

Among unrelated donors from 2012 to 2022, the annual number of White donors increased from 65 to 221 (240% increase). Hispanic donors increased from 4 to 25 (525% increase). Black donors increased from 3 to 11 (266% increase).

For every 3-year increment among biologically related donors aged <40 and ≥ 40 years, White donors increased by 18% and 22%, Hispanic donors increased by 25% and 54%, and Black donors did not change.

Likewise, for every 3-year increment among unrelated donors aged <40 and ≥ 40 years, White donors increased by 48% and 55%, Hispanic donors increased by 52% and 65%, and Black donors did not change.

CONCLUSION

While biologically related donors remain the majority of living liver donors, unrelated donors have risen, mainly among White donors. Although the increase in unrelated donations among Hispanic donors, the absolute numbers remain small (≤ 25 donors/year).

Educational interventions are needed to promote unrelated living liver donations in Hispanic and Black communities.

- Conflict of Interest: None.
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