1082

Neighborhood Resources & ARV Adherence Among Partnered U.S. GBMSM: Mediation by Social Determinants

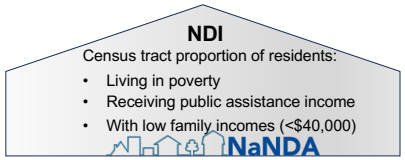
Loren M Dobkin, Luis A Parra, Alison R Walsh, Erin M Kahle
University of Michigan, Ann Arbor, Michigan, United States

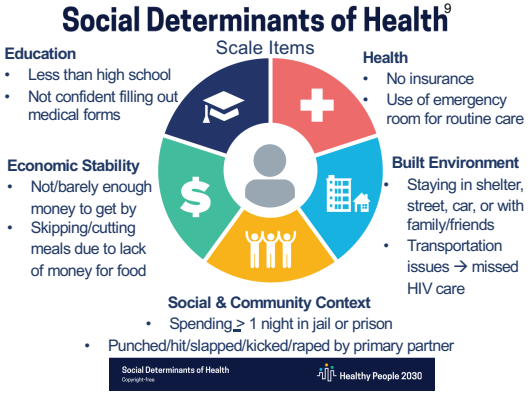
BACKGROUND & AIM

- Despite advances in antiretroviral (ARV) medications, most U.S. regimens require daily pill-taking to achieve HIV viral suppression.[1]
- Persistent geographic disparities in HIV transmission and outcomes point to neighborhood- and individual-level determinants of ARV adherence.[2]
- Gay, bisexual and other men who have sex with men (GBMSM) experience barriers to ARV adherence.[3]
- We examined for an association of neighborhood-level resources with ARV adherence mediated by individual-level social determinants of health (SDoH).

METHODS

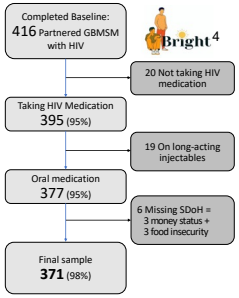
- Secondary baseline data from partnered GBMSM cohort[4]
- Zip codes → **Neighborhood Disadvantage Index (NDI)** from the National Neighborhood Data Archive (NaNDA)[5]
- **SDoH scale** adapted from 10-point Oregon Social Determinants of HIV Health Index[6]
- "Low" ARV adherence= <90% [7] by visual analog scale[8]
- Mediation analyses in R with probit link function





The effect of *neighborhood* resources on ARV adherence was indirectly linked through individual *social determinants*.

RESULTS

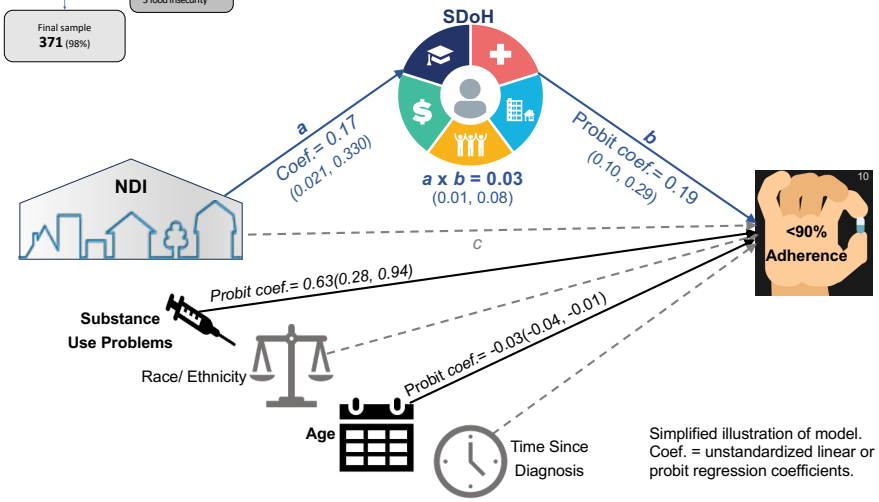


DESCRIPTIVE & BIVARIATE

- 14.6% reported taking their medication less than 90% ("low adherence")
- Greater NDI was grossly associated with low adherence ($p<0.05$)
- Dose response of individual SDoH score to low adherence ($p<0.001$)

MEDIATION MODEL

- After adjusting, greater neighborhood disadvantage → higher SDoH Score → increased risk of low adherence.
- Substance use & younger age also associated with low adherence.



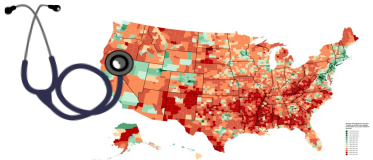
Simplified illustration of model. Coef. = unstandardized linear or probit regression coefficients.

DISCUSSION

- Supports recent evidence of strong relationship between **cumulative SDoH** and ARV adherence,[6] extending this to purposive sample of GBMSM.
- Sheds new light[11] on a **pathway from adverse neighborhood conditions to accumulation of adverse SDoH among individuals.**

CONCLUSIONS

- **Consideration of neighborhood context** and minimum adherence level required for HIV viral suppression[1] may help inform clinical ARV regimen selection.



Median Household Income per County 2021[12,13]

- **More research is needed** to understand if neighborhood indices may help target adherence support interventions.
- **Interventions** that strategically act on both neighborhood conditions and SDoH may help facilitate HIV viral suppression in highly impacted areas.

REFERENCES

1. Byrd KK, Hou JG, Hazen R, et al. Antiretroviral Adherence Level Necessary for HIV Viral Suppression Using Real-World Data. *J Acquir Immune Defic Syndr 1999*. 2019;82(3):245-251. doi:10.1097/QAI.0000000000002142
2. U.S. Department of Health & Human Services. Ending the HIV Epidemic (EHE) Priority Jurisdictions. December 20, 2023. Accessed September 24, 2024. https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/jurisdictions/phase-one
3. Jeffries WL, Dailey AF, Jin C, Carter JW, Scales L. Trends in Diagnosis of HIV Infection, Linkage to Medical Care, and Viral Suppression Among Men Who Have Sex with Men, by Race/Ethnicity and Age - 33 Jurisdictions, United States, 2014-2018. *MMWR Morb Mortal Wkly Rep*. 2020;69(38):1337-1342. doi:10.15585/mmwr.mm6938a1
4. Advancing Research in Identity and Sexuality, University of Michigan. Bright. Active Studies & Resources. Accessed February 25, 2025. https://www.sexualityandhealth.org/bright
5. Regents of the University of Michigan. National Neighborhood Data Archive (NaNDA): Updated Neighborhood Socioeconomic and Demographic Status Dataset. April 25, 2023. Accessed September 24, 2024. https://nanda.isr.umich.edu/2023/04/25/updated-neighborhood-socioeconomic-and-demographic-status-dataset/
6. Menza TW, Hixson LK, Lipira L, Drach L. Social Determinants of Health and Care Outcomes Among People With HIV in the United States. *Open Forum Infect Dis*. 2021;8(7):ofab330. doi:10.1093/ofid/ofab330
7. Pharmacy Quality Alliance. *PQA Quality Medication Use: PQA Measure Overview*.; 2024. Accessed October 29, 2024. https:// www.pqaalliance.org/assets/measures/pqa%20specialty%20measures%20core%20set %20081018.pdf
8. Giordano TP, Guzman D, Clark R, Charlebois ED, Bangsberg DR. Measuring adherence to antiretroviral therapy in a diverse population using a visual analogue scale. *HIV Clin Trials*. 2004;5(2):74-79. doi:10.1310/JFXH-G3X2-EYM6-D6UG
9. US Office of Disease Prevention and Health Promotion. Social Determinants of Health - Healthy People 2030. 2020. Accessed October 1, 2024. https://health.gov/healthypeople/priority-areas/social-determinants-health
10. Publicdomainvectors.org. Pill in hand. 2025. Accessed February 28, 2025. https://www.publicdomainvectors.org
11. Bensken WP, McGrath BM, Gold R, Cottrell EK. Area-level social determinants of health and individual-level social risks: Assessing predictive ability and biases in social risk screening. *J Clin Transl Sci*. 2023;7(1):e257. doi:10.1017/cts.2023.680
12. ChickenRobot1080p. Stethoscope Physician Clip Art - PNG - Download Free. FAVPNG.com. September 23, 2017. Accessed February 28, 2025. https://favpng.com/png_view/heart-stethoscope-physician-clip-art-png/KWEnsp74
13. USDA Economic Research Service at the U.S. Department of Agriculture. *Median Household Income per County as of 2021 According to the USDA Economic Research Service at the U.S. Department of Agriculture.*; 2023. Accessed February 21, 2025. https://commons.wikimedia.org/wiki/File:Median_Household_Income_per_County_as_of_2021_according_to_the_USDA_Economic_Research_Service_%283%29.png#file

ACKNOWLEDGMENT

Research reported in this poster was supported by the Predoctoral Fellowship Training Grant (T32 NR016914, Program Director: McCullagh) Complexity: Innovations in Promoting Health through Team Science. 8/26/2023—6/30/2027). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.