

TOPIC COLLECTION: TREATING OBESITY AND OTHER CONDITIONS IN UNDERSERVED PATIENTS

THE NEW ENGLAND JOURNAL OF MEDICINE

NEJM JOURNAL WATCH

Cardiology
Emergency Medicine
Gastroenterology
General Medicine
Hospital Medicine
Infectious Diseases
Neurology
Oncology and Hematology
Pediatrics and Adolescent Medicine
Physician's First Watch
Psychiatry
Women's Health

NEJM CAREERCENTER

NEJM KNOWLEDGE+

NEJM CATALYST

NEJM RESIDENT 360

Letter from the Editor

Systemic Racism, Healthcare Disparities, and the Social Determinants of Health

The national conversation about systemic racism on a broad societal level has direct corollaries in healthcare. The coronavirus pandemic has exacerbated what were known to be large disparities across society in health and healthcare. People of color are at least twice as likely as whites to experience infection, severe illness, hospitalization, and death from COVID-19.

The pandemic has emphasized the need for better understanding of the social determinants of health. How and where patients live and work, their access to safe and convenient transportation and child care, and the quality of their medical care have enormous impact on healthcare outcomes. Sociodemographic and economic factors have more influence on population-based health outcomes than even the most sophisticated medical care and technology.

A successful attempt to buffer some of the adverse effects of socioeconomic disadvantage was described recently in the *New England Journal of Medicine* article in this collection; 805 mostly Black, mostly low-income, obese patients (mean BMI, 37 kg/m²) were randomized on a clustered clinic basis to either intense lifestyle modification interventions or usual care. The intense intervention consisted of coaching and educational programs delivered weekly for 6 months and monthly for the next 18 months by trained healthcare educators embedded in primary care clinics. At 24 months of follow-up, the intense intervention group lost a mean of 4.99% of their body weight, compared to 0.48% of the usual care group.

Several recent studies summarized in this collection have also explored the health effects of socioeconomic disadvantage beyond COVID-19. Hunt and colleagues conducted a cross-sectional study that showed smaller hippocampal and cerebral volume in residents of more disadvantaged neighborhoods. Pantell and colleagues made a similar assessment via a longitudinal study showing increased risk for developing diabetes and hypertension in subjects with higher levels of social and behavioral stress. Gross and colleagues found that women of low socioeconomic status were less likely to be tested for genetic risks for breast cancer. Homeless individuals were found by Rosendale and colleagues to be more likely to have mental health or substance use disorders, and have more frequent hospitalizations for seizures or traumatic brain injury than individuals with housing. And, of course, they had less resources to care for themselves or to access care. I cared for a patient a few years ago with cellulitis who was ready for discharge to home intravenous antibiotics. "Home" was a cardboard box under a highway overpass. Finally, Laiyemo et al. attempted to improve screening rates for colorectal cancer by assigning a lay relative or friend to support disadvantaged patients in adherence to colonoscopy recommendations. Unfortunately, there was no or very little improvement in screening rates or bowel preparation.



**THE NEW ENGLAND
JOURNAL OF MEDICINE**

NEJM JOURNAL WATCH

Cardiology
Emergency Medicine
Gastroenterology
General Medicine
Hospital Medicine
Infectious Diseases
Neurology
Oncology and Hematology
Pediatrics and Adolescent Medicine
Physician's First Watch
Psychiatry
Women's Health

NEJM CAREERCENTER

NEJM KNOWLEDGE+

NEJM CATALYST

NEJM RESIDENT 360

The field of understanding and resolving healthcare disparities is heavy on “understanding” and light on “resolving” at this point. Physicians and other clinicians certainly have an obligation to recognize, understand, and assess the social and behavioral determinants that affect the health of their patients. Whether they should be truly responsible for their resolution is less clear. The last several months of public health failures, leading to unnecessary morbidity and incalculable excess mortality, have demonstrated the magnitude of this problem, affecting the health not only of patients but also of healthcare professionals themselves.

Thomas L. Schwenk, MD

Dr. Schwenk is Dean and Professor of Family and Community Medicine, University of Nevada, Reno School of Medicine; and Vice-President of Health Sciences, University of Nevada, Reno.

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

SEPTEMBER 3, 2020

VOL. 383 NO. 10

Weight Loss in Underserved Patients — A Cluster-Randomized Trial

Peter T. Katzmarzyk, Ph.D., Corby K. Martin, Ph.D., Robert L. Newton, Jr., Ph.D., John W. Apolzan, Ph.D., Connie L. Arnold, Ph.D., Terry C. Davis, Ph.D., Eboni G. Price-Haywood, M.D., Kara D. Denstel, M.P.H., Emily F. Mire, M.S., Tina K. Thethi, M.D., Phillip J. Brantley, Ph.D., William D. Johnson, Ph.D., Vivian Fonseca, M.D., Jonathan Gugel, M.D., Kathleen B. Kennedy, Ph.D., Carl J. Lavie, M.D., Daniel F. Sarpong, Ph.D., and Benjamin Springgate, M.D.

ABSTRACT

BACKGROUND

Evidence of the effectiveness of treatment for obesity delivered in primary care settings in underserved populations is lacking.

METHODS

We conducted a cluster-randomized trial to test the effectiveness of a high-intensity, lifestyle-based program for obesity treatment delivered in primary care clinics in which a high percentage of the patients were from low-income populations. We randomly assigned 18 clinics to provide patients with either an intensive lifestyle intervention, which focused on reduced caloric intake and increased physical activity, or usual care. Patients in the intensive-lifestyle group participated in a high-intensity program delivered by health coaches embedded in the clinics. The program consisted of weekly sessions for the first 6 months, followed by monthly sessions for the remaining 18 months. Patients in the usual-care group received standard care from their primary care team. The primary outcome was the percent change from baseline in body weight at 24 months.

RESULTS

All 18 clinics (9 assigned to the intensive program and 9 assigned to usual care) completed 24 months of participation; a median of 40.5 patients were enrolled at each clinic. A total of 803 adults with obesity were enrolled: 452 were assigned to the intensive-lifestyle group, and 351 were assigned to the usual-care group; 67.2% of the patients were Black, and 65.5% had an annual household income of less than \$40,000. Of the enrolled patients, 83.4% completed the 24-month trial. The percent weight loss at 24 months was significantly greater in the intensive-lifestyle group (change in body weight, -4.99% ; 95% confidence interval [CI], -6.02 to -3.96) than in the usual-care group (-0.48% ; 95% CI, -1.57 to 0.61), with a mean between-group difference of -4.51 percentage points (95% CI, -5.93 to -3.10) ($P < 0.001$). There were no significant between-group differences in serious adverse events.

CONCLUSIONS

A high-intensity, lifestyle-based treatment program for obesity delivered in an underserved primary care population resulted in clinically significant weight loss at 24 months. (Funded by the Patient-Centered Outcomes Research Institute and others; PROPEL ClinicalTrials.gov number, NCT02561221.)

From the Pennington Biomedical Research Center, Baton Rouge (P.T.K., C.K.M., R.L.N., J.W.A., K.D.D., E.F.M., P.J.B., W.D.J.), the Department of Medicine and Feist-Weiller Cancer Center, Louisiana State University Health Sciences Center, Shreveport (C.L.A., T.C.D.), and Ochsner Clinic Foundation, Center for Outcomes and Health Services Research (E.G.P.-H.) and Department of Cardiovascular Diseases, John Ochsner Heart and Vascular Institute (C.J.L.), Ochsner Clinical School—University of Queensland School of Medicine (E.G.P.-H., C.J.L.), the Department of Medicine, Division of Endocrinology and Metabolism (T.K.T., V.F.) and the Department of Medicine, Section of General Internal Medicine and Geriatrics (J.G.), Tulane University Health Sciences Center School of Medicine, Southeast Louisiana Veterans Health Care System (T.K.T., V.F.), the College of Pharmacy, Xavier University of Louisiana (K.B.K., D.F.S.), and the Department of Internal Medicine, Louisiana State University School of Medicine, and Program in Health Policy and Systems Management, Louisiana State University School of Public Health (B.S.), New Orleans — all in Louisiana. Address reprint requests to Dr. Katzmarzyk at the Pennington Biomedical Research Center, 6400 Perkins Rd., Baton Rouge, LA, 70808-4124, or at peter.katzmarzyk@pbrcc.edu.

This article was updated on September 8, 2020, at NEJM.org.

N Engl J Med 2020;383:909-18.

DOI: 10.1056/NEJMoa2007448

Copyright © 2020 Massachusetts Medical Society.

Neighborhood-Level Socioeconomic Status and Brain MRI Findings

Living in a disadvantaged neighborhood may affect cerebral volumes in cognitively unimpaired adults.

Socioeconomic factors may influence cognitive outcomes. For this study, researchers evaluated the effect of neighborhood advantage levels on the cerebral and hippocampal volumes in 951 cognitively unimpaired adult participants from two large cohorts in Wisconsin. Neighborhood disadvantage level was determined by a score derived from U.S. Census indices of poverty, education, employment, and physical environment. Cerebral and hippocampal volumes were determined by MRI. Cardiovascular risk also was obtained.

Those in the most disadvantaged neighborhood were more likely to be less educated and more likely to identify as Black or African American. After adjustment for covariates, living in the most disadvantaged neighborhoods was associated with lower hippocampal and cerebral volume. Males living in the most disadvantaged neighborhoods had lower hippocampal volumes than females. Neighborhood disadvantage was associated with higher cardiovascular risk. Cardiovascular risk was associated with lower total brain volume and statistically mediated the effects of neighborhood disadvantage on total brain volume, but not hippocampal volume.

COMMENT

This cross-sectional study shows intriguing evidence on the impact of environmental factors on brain morphology. Since cardiovascular risk factors statistically mediated the effects on neighborhood disadvantage on total brain volume but not hippocampal volume, the association between neighborhood disadvantage and hippocampal volume may be explained through a different mechanism. Further exploration of the impact of stress on brain morphology in those living in disadvantaged neighborhoods may also be informative. Longitudinal data are also needed to determine whether treating cardiovascular risk factors has long-term beneficial effects on total brain volume. — **Jennifer Rose V. Molano, MD**

Hunt JFV et al. Association of neighborhood-level disadvantage with cerebral and hippocampal volume. JAMA Neurol 2020 Jan 6; [e-pub]. (https://doi.org/10.1001/jamaneurol.2019.4501)

Social and Behavioral Determinants of Risk for Developing Hypertension and Diabetes

Numerous nonclinical factors are associated with excess risk.

Acknowledging growing interest in the social and behavioral determinants of disease development, investigators used survey data from a California health system to assess two groups of middle-aged patients: 18,000 who did not have hypertension at study entry and 36,000 who did not have diabetes. Eleven social and behavioral risk factors were evaluated, including race, financial worry, intimate partner violence, neighborhood poverty, and depressive symptoms.

During 3.5 years of follow-up, incidence of newly diagnosed hypertension ranged from 5.8% of patients with none of the specified

risk factors to 7.0% for those with ≥ 3 factors, and incidence of newly diagnosed diabetes ranged from 3.5% for patients with none of the risk factors to 5.0% for those with ≥ 3 factors. Several hazard ratios (adjusted for age, sex, race/ethnicity, and body-mass index) suggested significant associations. For example, financial worry conferred 29% higher risk for developing diabetes, and intimate partner violence conferred 68% higher risk. Patients who were widowed had 38% higher risk for developing hypertension than did married patients.

COMMENT

These results and many others reported in the study give a quantitative picture of how social determinants of health can be measured and related to risks for developing two common chronic diseases. Studies assessing the clinical effect of social and behavioral interventions would be appropriate. — **Thomas L. Schwenk, MD**

Pantell MS et al. Association of social and behavioral risk factors with earlier onset of adult hypertension and diabetes. JAMA Netw Open 2019 May 3; 2:e193933. (https://doi.org/10.1001/jamanetworkopen.2019.3933)

Why Aren't Enough Low-Income U.S. Women Receiving BRCA Testing?

Data from southeastern states document low prevalence of testing among eligible Medicare recipients.

Genetic testing for *BRCA* mutations allows identification of patients who may benefit from risk-reducing interventions. From a cohort of >84,000 patients receiving care at federally funded clinics in the southeastern U.S. and enrolled between 2002 and 2009, investigators identified women with breast or ovarian cancer diagnoses and Medicare coverage (eligibility for coverage of *BRCA* testing was based on family history, while tumor characteristics were based on cancer registry pathology reports).

Among 718 eligible women (62% Black; 33% white; mean age at cancer diagnosis, 64 [breast], 62 [ovarian]; 62% low-income), 92 met Medicare criteria for *BRCA* testing. Of these, 9% were tested during a median follow-up of 5 years. Medical record review found that <10% of treating physicians documented a need for genetic testing and none recorded referral to genetic counseling (GC).

COMMENT

As the authors note, the overall low rate of genetic testing may reflect issues including lack of priority among clinicians, limited interest among patients, and insufficient knowledge about — and inadequate availability of — GC. More companies are beginning to offer *BRCA* testing and GC services, resulting in lower prices but diminishing availability of community-based GC. Although many eligible women in the general population are not receiving appropriate genetic testing, this report documents that testing rates are disproportionately low among low-income women. Clearly, we need new strategies to facilitate GC and testing in eligible individuals.

— **Andrew M. Kaunitz, MD**

Gross AL et al. BRCA1 and BRCA2 testing in medically underserved Medicare beneficiaries with breast or ovarian cancer. JAMA 2018 Aug 14; 320:597. (https://doi.org/10.1001/jama.2018.8258)

Without Housing or Neurologic Health: A Distinctive Patient Group

Traumatic brain injuries and epilepsy are common in homeless people who have neurological disorders.

Individuals who are homeless are at elevated risk for neuropsychiatric disorders, which can cause — or result from — their poor living conditions. These researchers used a statewide California inpatient database to review the rate of homelessness in over 1 million adults hospitalized with a neurologic primary diagnosis from 2006 to 2011.

The 3983 homeless individuals were more likely than “housed” patients to be men (84% vs. 49%) and to be younger (mean age, 50 vs. 65). Homeless patients were more likely to have a mental health disorder (47% vs. 31%) or substance use disorder (68% vs. 11%). The most common indications for hospitalization among the homeless were seizure (19% vs. 8%) and traumatic brain injury (TBI; 32% vs. 9%). Homelessness was also associated with higher 30-day readmission rates. The researchers did not provide specific rates for schizophrenia or psychotic disorders.

COMMENT

Clinicians need to be aware of the neuropsychiatric sequelae of TBI and epilepsy in this vulnerable and underserved group. The finding that TBI is the most frequent cause for neurologic hospitalization in those who are homeless is not surprising. Being homeless, abusing substances, and having a chronic psychotic disorder might all be risk factors for TBI, and some data suggest that TBI is a risk factor for psychosis. In addition, this group might not have access to appropriate treatment for TBI. We can assume an even greater incidence of TBI in the psychiatrically hospitalized, homeless population. — **Jonathan Silver, MD**

Rosendale N et al. Hospital admission and readmission among homeless patients with neurologic disease. *Neurology* 2019 Jun 11; 92:e2822. (<https://doi.org/10.1212/WNL.0000000000007645>)

Can a Designated Social Contact Person Increase Screening Colonoscopy Rates Among Underserved Patients?

Compliance with screening colonoscopy was not improved by having a social contact person.

Patient navigation systems have been shown to effectively increase colorectal cancer (CRC) screening rates in underserved populations. They require sustained financial resources that may be prohibitive. Investigators studied whether a social contact designated by a patient scheduled for CRC screening could fulfill the role of navigator.

To test this hypothesis, investigators randomized 399 Black patients (mean age, 58; 53% female) who were scheduled for screening colonoscopy to nominate a social contact navigator or to usual care. Patients in the intervention group designated an adult (63.5% immediate family members, 11% other relatives, 25.5% friends) who was asked to serve as a navigator to remind the patient about bowel preparation and help with healthcare forms and transportation. Patients in the usual-care group also designated a contact, but this person was not contacted by research personnel. The results were as follows:

- About 65% of social contacts could be reached and agreed to be involved as navigators.
- The proportion of individuals in each group who underwent screening colonoscopy did not differ significantly (77.3% of the intervention group vs. 77.2% in the control group; relative risk, 1.01; 95% confidence interval, 0.91–1.12).
- The rate of adequate bowel preparation was modestly better in the social contact group (89.1% vs. 80.9%; RR, 1.10; 95% CI, 1.00–1.21).

COMMENT

Despite an overall increase in CRC screening rates during the past decade, the disparities between Blacks and whites have actually worsened (*Clin Gastroenterol Hepatol* Sep 16 2019; [e-pub]). This study reaffirms that sustained efforts are required to improve CRC screening rates in underserved minorities and shows that even a robust social support system is not a suitable alternative to specialized, adequately funded navigation systems. — **Charles J. Kahi, MD, MS**

Laiyemo AO et al. Using patients' social network to improve compliance to outpatient screening colonoscopy appointments among blacks: A randomized clinical trial. *Am J Gastroenterol* 2019 Sep 2; [e-pub]. (https://journals.lww.com/ajg/Fulltext/2017/10001/Using_Patients__Social_Network_to_Improve.293.aspx)