CHAPTER 1

Social Determinants of Health

Highlights

- Social determinants of health (SDOH) are major drivers of health disparities.
- Addressing SDOH is essential to "create social, physical, and economic environments that promote attaining the full potential for health and well-being for all" (Healthy People 2030).
- Disparities in access and outcomes are pervasive in ophthalmology.
- Lower educational level, lower income, being from an underrepresented racial or ethnic group, and being uninsured or having nonprivate insurance have been shown to be associated with higher rates of self-reported visual impairment and decreased access to care in the United States.
- Ophthalmologists should assess the impact of SDOH in the diagnosis and treatment of patients as part of every clinical encounter.

Introduction

Health is not the absence of disease but the presence of wellness. As illustrated in Figure 1-1, health is the result of the complex interplay of individual (eg, genetics, behaviors, demographics) and population-level factors (health care systems and policies). *Social determinants of health (SDOH),* also known as social and physical determinants of health, are conditions in the environment in which people grow, live, learn, work, and age that affect health outcomes. Over the past few decades, increasing evidence has suggested that complex social, physical, and economic conditions have a greater impact than medical care on health outcomes and life expectancy. In a 2008 report, the World Health Organization (WHO) stated that "social justice is a matter of life and death. It affects the way people live, their consequent chance of illness, and their risk of premature death." The report calls for organized global action to address SDOH in order to achieve *health equity,* defined as the achievement of the highest level of health for all people regardless of socially determined circumstances.

Health inequities are avoidable, unjust, systematic differences in health status between different population groups that result in *health disparities*. Healthy People 2030, an initiative by the US Department of Health and Human Services, defines health disparities as "a particular type of health difference that is closely linked with economic, social, or environmental disadvantage. Health disparities adversely affect groups of people who have systematically

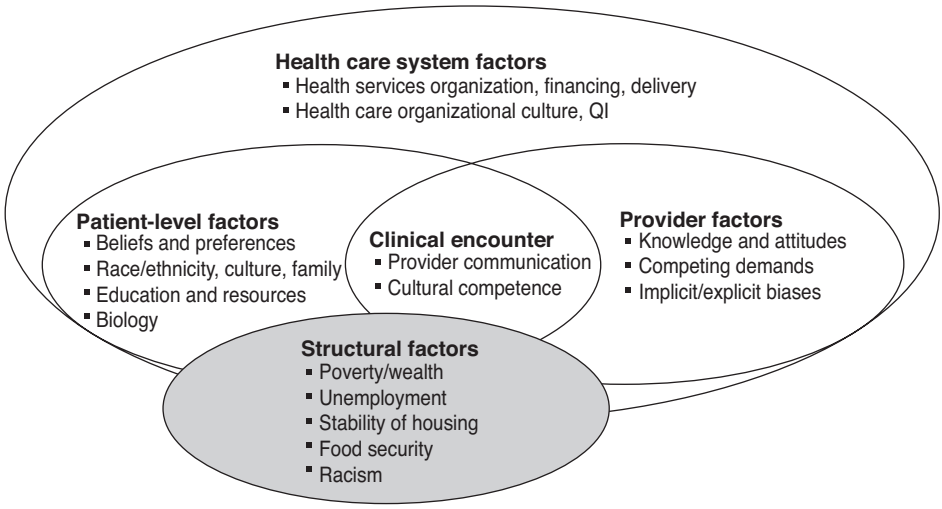

Figure 1-1 Key potential determinants of health and health care disparities. QI = quality improvement. *(From Bryant A. Racial and ethnic disparities in obstetric and gynecologic care and role of implicit biases. In:* UpToDate. *October 29, 2020. Used with permission from Kilbourne AM, Switzer G, Hyman K, Crowley-Matoka M, Fine MJ. Advancing health disparities research within the health care system: a conceptual framework.* Am J Public Health. *2006;96(12):2116. Copyright © 2006 American Public Health Association.)*

experienced greater social or economic obstacles to health based on their racial or ethnic group, religion, socioeconomic status, gender, age, or mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."

The pursuit of health equity requires a concerted societal effort to remove barriers such as discrimination and poverty and their many consequences. One of the 5 overarching goals of Healthy People 2030 relates specifically to SDOH, with the objective to "create social, physical, and economic environments that promote attaining the full potential for health and well-being for all." In 2020, the American Academy of Ophthalmology created the Taskforce on Disparities in Eye Care to address issues related to health inequity, including access to care, health literacy, and workforce diversity. The papers produced by this group are published in the October 2022 issue of *Ophthalmology* (full-length articles appear online, while the related commentaries appear in print and online). These articles cover and expand on many of the issues discussed in this chapter.

Elam AR, Tseng VL, Rodriguez TM, Mike EV, Warren AK, Coleman AL; for the American Academy of Ophthalmology Taskforce on Disparities in Eye Care. Disparities in vision health and eye care. *Ophthalmology.* 2022;129(10):e89–e113. https://doi.org/10.1016/j.ophtha.2022.07.010

Healthy People 2030. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Accessed May 19, 2022. https://health.gov/healthypeople/priority-areas/social-determinants-health

World Health Organization. Commission on Social Determinants of Health. *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report.* World Health Organization; 2008.

Categories of Social Determinants of Health

Recognizing the social, economic, and physical conditions that different populations experience because of their environments is fundamental to understanding and addressing SDOH, which can be grouped into various domains (Fig 1-2):

- health care system (eg, health insurance coverage, access to primary care)
- economic stability (eg, stable housing and employment)
- education (eg, access to high-quality education, language skills, health literacy)
- neighborhood and physical environment (eg, access to transportation, walkability, neighborhood safety, access to clean water and nonpolluted air)
- food (eg, food security, access to healthy options)
- community and social context (eg, community engagement, incarceration rates, discrimination)

Although discrimination can be classified in the SDOH domain of community and social context, there is a complex relationship between discrimination and all SDOH domains, as discussed in the section Discrimination and Social Determinants of Health.

Health Care System

There are significant barriers to accessing health care and receiving high-quality care in the United States. First, although the rates of uninsured Americans have decreased under the Affordable Care Act, approximately 10% of people in the United States remain uninsured. Vulnerable populations, such as underrepresented racial and ethnic groups and low-income individuals, are at highest risk of being uninsured. Second, inadequate health

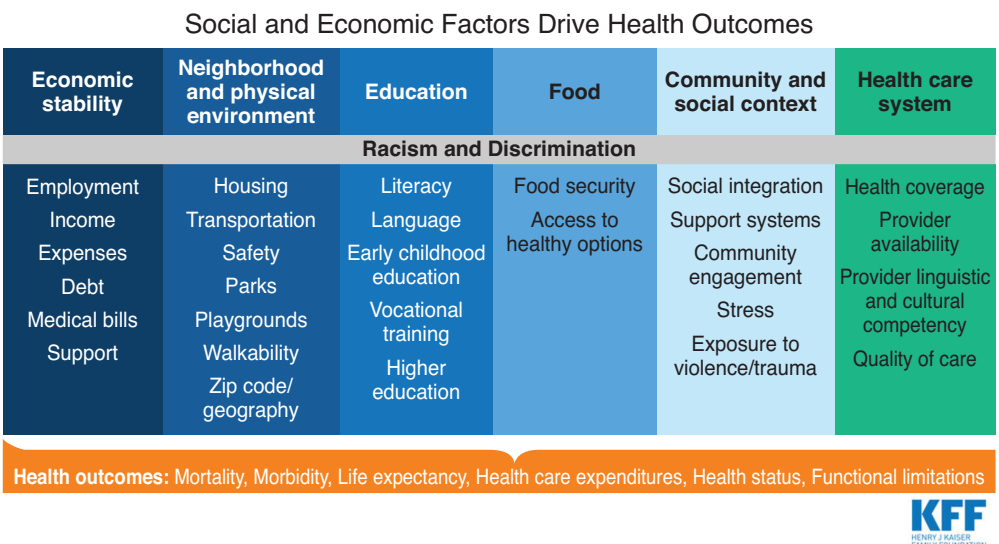

Figure 1-2 Social determinants of health. *(Reproduced with permission from Artiga S. Health disparities are a symptom of broader social and economic inequities. KFF. June 1, 2020. Accessed April 21, 2022. https://www.kff.org/policy-watch/health-disparities-symptom-broader-social-economic-inequities/)*

insurance coverage resulting in high out-of-pocket costs continues to be one of the largest barriers to health care access.

Geographic disparities in severe vision loss in the United States have also been well documented. Medically Underserved Areas and Health Professional Shortage Areas are geographic areas, populations, or facilities that have been designated by the federal government as having shortages in primary medical care, dental, or mental health services. Other barriers include poor access to transportation, limited health care resources, and poor physician-patient communication. Poor communication can be caused by several factors, including patient fear or lack of trust, lack of time, cultural and language barriers, and lower literacy levels. These social complexity risk factors have been associated with poorer outcomes with respect to preventive health care and management of chronic diseases.

Ophthalmic considerations Medicaid patients with a new diagnosis of primary open-angle glaucoma (POAG) receive substantially less glaucoma testing in the 15 months following initial diagnosis compared with patients who have commercial health insurance. This disparity is most striking in Black patients with Medicaid insurance, who have a 291% increased odds of not undergoing glaucoma testing compared with Black patients with commercial health insurance. Further, Black patients are more likely than White patients to go blind from POAG, highlighting the importance of efforts to improve the quality of glaucoma care for Medicaid recipients and underrepresented racial and ethnic groups.

Elam AR, Andrews C, Musch DC, Lee PP, Stein JD. Large disparities in receipt of glaucoma care between enrollees in Medicaid and those with commercial health insurance. *Ophthalmology.* 2017;124(10):1442–1448.

Priorities for addressing disparities in this domain include the following:

- expanding access to appropriate insurance coverage and to primary care and other health professionals
- focusing on preventive health care
- improving health communication between physicians and patients through training in cultural competency and by ensuring the availability of patient education material in various languages and at the appropriate educational level
- offering telehealth to improve services and expand access
- providing vision services in community health centers and vision outreach in underserved areas
- optimizing the electronic health records for screening and patient communication

Elam AR, Lee PP. High-risk populations for vision loss and eye care underutilization: a review of the literature and ideas on moving forward. *Surv Ophthalmol.* 2013;58(4):348–358.

Kirtland KA, Saaddine JB, Geiss LS, Thompson TJ, Cotch MF, Lee PP; Centers for Disease Control and Prevention (CDC). Geographic disparity of severe vision loss—United States, 2009–2013. *MMWR Morb Mortal Wkly Rep.* 2015;64(19):513–517.

Economic Stability

A substantial body of research has demonstrated the detrimental effects of low socioeconomic status and poverty on health outcomes. Economic stability is one of the most important SDOH, as it affects all other domains. Without stable employment, an individual may not be able to access health insurance and may also experience food insecurity, housing instability, and poor work environments, all of which have complex effects on many aspects of health. Among the goals of Healthy People 2030 is helping more people achieve economic stability through employment programs, career counseling, and provision of high-quality child care options, as well as through policies to assist individuals in securing quality food, stable housing, and access to health care and education.

Ophthalmic considerations Sociodemographic disparities are known to exist for ocular diseases such as refractive error, cataract, glaucoma, and diabetic retinopathy. In their analysis of disparity in visual impairment among adults in the United States based on race and socioeconomic status, Uhr and colleagues found that lower educational level, lower income, being a patient of color, and being uninsured or having nonprivate insurance were associated with higher rates of self-reported visual impairment and decreased access to care.

Uhr JH, Chawla H, Williams BK Jr, Cavuoto KM, Sridhar J. Racial and socioeconomic disparities in visual impairment in the United States. *Ophthalmology*. 2021;128(7): 1102–1104.

Education

Higher educational level is strongly associated with improved health outcomes, positive health behaviors, and increased life expectancy. Early childhood education and primary and secondary education are key determinants of future health; therefore, addressing disparities in educational access and quality as early as possible in life is critical.

Poor health literacy is associated with poor medical adherence, decreased utilization of preventive services, and increased mortality. Educational material provided to patients should be tailored to the health literacy level of the target population.

Ophthalmic considerations In medically underserved urban communities, patients with a high school education or less are significantly less likely to have had a recent eye examination than those with greater than a high school education. The former are also more likely to report difficulties with insurance, transportation, and lack of knowledge as barriers to eye care.

Goyal A, Richards C, Patel V, et al. The Vision Detroit project: visual burden, barriers, and access to eye care in an urban setting. *Ophthalmic Epidemiol.* 2022;29(1):13–24.

Neighborhood and Physical Environment

The neighborhood and physical or built environment in which individuals live, learn, work, and play have a direct impact on health and well-being. High rates of crime and violence; unsafe air or water; poor walkability; and limited access to healthful food options, parks, playgrounds, healthy work environments, or transportation are some of the numerous factors that can negatively affect health outcomes. The Area Deprivation Index (ADI) is a metric derived from 17 US census variables calculated based on zip code—including educational level, employment, income, household characteristics, and housing—to assess the level of socioeconomic disadvantage by neighborhood.

Ophthalmic considerations Living in more socioeconomically disadvantaged neighborhoods, as measured by the ADI, is associated with nonadherence to first-time ophthalmology referrals for diabetic retinopathy screenings.

Yusuf R, Chen EM, Nwanyanwu K, Richards B. Neighborhood deprivation and adherence to initial diabetic retinopathy screening. *Ophthalmol Retina.* 2020;4(5):550–552.

Food

Access to food, especially nutritious food, is a key SDOH that directly affects an individual's health. *Food insecurity,* defined as a lack of consistent access to enough food for an active, healthy lifestyle, affects 10.5% of American households. Food insecurity and poor nutrition are known to be risk factors for chronic illnesses such as obesity, diabetes, hypertension, and cancer.

Accessibility and availability of nutritious food choices are influenced by other SDOH such as economic stability, neighborhood and physical environment, and education.

Community and Social Context

Social, family, and community networks serve as important support systems for individuals and thus can significantly affect health outcomes. Factors such as civic participation, social cohesion, and community engagement can have positive health effects by reducing stress. Community engagement by health care providers may improve patient-provider relationships and build trust among patients. Research has shown that physician-patient concordance in gender, race and ethnicity, language, and culture is correlated with increased patient satisfaction and adherence.

Discrimination and Social Determinants of Health

Discrimination is a socially structured action resulting in the unfair treatment of individuals or groups based on their race or ethnicity, sex, gender identity, sexual orientation, age, disability, religion, socioeconomic status, or other factors and can significantly affect the health of vulnerable populations.

Race and Ethnicity

Racism, a type of discrimination based on race or ethnicity, results in significant disparities in health outcomes for patients of color. Racism exists in different forms (eg, internalized, interpersonal, systemic), can manifest in various ways (eg, stereotypes, beliefs), and can be intentional or unintentional. The US Census Bureau projects that underrepresented racial and ethnic groups will account for over half of the US population by 2045. In 2020, the American Medical Association adopted a policy that recognizes racism as a public health threat, and the organization made a commitment to work actively to dismantle racist policies and practices across all of health care.

The effects of racial and ethnic discrimination on SDOH are complex, multidimensional, and interrelated. For example, in the United States, communities of color are disproportionately affected by poverty. Individuals affected by poverty are more likely to have lower levels of education. They are also more likely to live in neighborhoods with high rates of crime and poor access to resources such as nutritious foods, safe outdoor spaces for exercise, and clean water. All of these factors adversely affect health, quality of life, and health outcomes.

O'Reilly KB. AMA: Racism is a threat to public health. American Medical Association. November 16, 2020. Accessed August 27, 2022. https://www.ama-assn.org/delivering-care/health-equity/ama-racism-threat-public-health

Ophthalmic considerations Compared with White patients, Black and Latino patients and other patients of color have higher rates of refractive error, diabetic retinopathy, cataract, and POAG. Despite being at higher risk for visual impairment and blindness, Black and Latino patients are less likely than White patients to be seen by an ophthalmologist or to receive a dilated examination.

Sex and Gender

It is important to define the difference between sex and gender in the context of discussing health care disparities. The WHO defines *sex* as the different biological and physiological characteristics of individuals that are defined by chromosomal composition and reproductive organs; sex is typically assigned at birth (male, female, or intersex). In contrast, *gender* is a social construct that refers to the roles and expectations attributed to men and women in society and evolves with time. The WHO recognizes that gender is an important factor affecting SDOH, as gender inequality leads to health risks for women globally, and unbalanced power relations between men and women affect health-seeking behavior and health outcomes.

Ophthalmic considerations A study investigating sex differences in the repair of retinal detachments in the United States found that women have a 34% reduced odds of receiving surgery for a retinal detachment diagnosis, and their detachments are repaired with different types of surgery. Future studies

are warranted to better understand the role of sex and gender disparities in ophthalmic care.

Callaway NF, Vail D, Al-Moujahed A, et al. Sex differences in the repair of retinal detachments in the United States. *Am J Ophthalmol.* 2020;219:284–294.

Sexual Orientation and Gender Identity

Gender identity is defined as an individual's personal sense of gender and includes male, female, transgender, and nonbinary classifications. Research has demonstrated that individuals who identify as lesbian, gay, bisexual, transgender, queer and/or questioning, and other sexual identities (LGBTQ+), experience health care disparities and have higher rates of mental illness and substance abuse disorder beginning in adolescence. Factors such as societal stigma and harassment, lack of cultural competency among health care providers, and low rates of insurance coverage contribute to the overall health burden in this population. LGBTQ+ individuals who are members of communities of color face even greater health disparities.

Age and Disability

Older adults and individuals with disabilities are particularly vulnerable to discrimination and its consequences. Older adults are more susceptible to illness and chronic disease with aging, and many face considerable barriers, such as limited income and physical and cognitive limitations in addition to discrimination. *Ageism* refers to stereotypes, prejudice, and discrimination against older adults and has been shown to lead to worse health outcomes. Adults with disabilities are more likely than those without disabilities to report their health to be fair or poor and to report higher rates of obesity, lack of physical activity, and smoking. Bias of health care professionals against individuals with disabilities may be a contributing factor to disparities in care.

Chang ES, Kannoth S, Levy S, Wang SY, Lee JE, Levy BR. Global reach of ageism on older persons' health: a systematic review. *PLoS One.* 2020;15(1):e0220857. doi:10.1371/journal.pone.0220857

Approaches to Addressing Social Determinants of Health

Ophthalmologists can play an important role in addressing SDOH in vulnerable patient populations. Various strategies can be used:

- *Assess the impact of SDOH on patients' lives as part of every patient encounter*. Similar to the way that the history of the present illness, medical/ocular history, and other types of patient information are obtained, ophthalmologists and their health care teams can assess the role of SDOH in the lives of their patients, how SDOH might affect patient health, and how health care can be provided more effectively. A suggested screening tool, provided by the American Academy of Family Physicians, is available (https://www.aafp.org/content/dam/AAFP/documents/patient_care/everyone_project/hops19-physician-form-sdoh.pdf).

- *Address biases in your practice.* How are people of a lower socioeconomic status or lower educational or literacy level viewed? By acknowledging potential biases, ophthalmologists and their staff members can work to mitigate the effects they may have on patient care. Consider taking an Implicit Association Test (implicit.harvard.edu) to illuminate your own unconscious biases and mandating implicit bias training for all office staff.
- *Provide patient-centered care based on the principles of empathy, curiosity, and respect.* Consider the patient's cultural values, beliefs, and family dynamics and decision making; traditions, customs, and spirituality; possible mistrust; preferred communication styles; and sociodemographic factors.
- *Integrate patient social support structures into your practice.* Empower other members of your team to identify and address SDOH. Provide support such as parking or transportation vouchers.
- *Improve access to care and quality of care.* This includes strategies such as improving patient-physician communication and patient health literacy and reducing cultural and linguistic barriers (see the section Health Care System). It may be helpful to do a quality assurance assessment of your practice to identify any disparities in the care being provided to patients.