Social Determinants of Health & Health Education:
An Annotated Bibliography
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Introduction

Social determinants of health (SDOH) are the environment in which people are born, grow, live, work, and age (World Health Organization, 2017), including the factors that significantly influence the course of one’s health (Lewis, 2020). Some examples of SDOH include housing, employment, food security, education (Trust for America’s Health, 2020), transportation systems (Lewis, 2020), discrimination (Health Affairs Blog, 2020), loneliness and social isolation (The National Academies of Sciences, Engineering, and Medicine, 2020).

To provide an environment in which all people in the country can attain their maximum health status, SDOH were first formally introduced as part of the Healthy People 2020 Objectives for the Nation (US DHHS, 2010). Building on this foundation, the Healthy People 2030 Framework, recommended by the Secretary’s Advisory Committee, describes a process that can be accomplished through the evidence-based interventions that focus on policies and the SDOH (Secretary’s Advisory Committee for Healthy People 2030, 2018). The Committee also proposes that SDOH should be included among the measures for Healthy People 2030.

The impact of SDOH is increasingly recognized by health care systems, insurance companies, hospitals, and government agencies to improve health outcomes and manage health care costs (Trust for America’s Health, 2020). Organizations are striving to address the SDOH through comprehensive approaches involving research, program implementation, policy or legislative proposals, and other areas.
For example, Kaiser Permanente Washington Health Research Institute (KPWHRI) is addressing SDOH by investigating the effects of changing communities on residents’ long-term weight and blood sugar, and incorporating community resource specialists in primary care, team-based opioid management, and financial hardship (Lewis, 2020). The Center for Medicare and Medicaid Innovation’s Accountable Health Communities Model is assessing the potential for reduced health care costs and utilization by focusing on the health-related social needs of Medicare and Medicaid beneficiaries (Health Affairs Blog, 2020). Partnerships between community-based organizations (CBOs) and health systems to address SDOH also have made great progress. One such example is the Ability360, a center for independent living in Arizona, which has contracted with Medicaid to modify homes, provide state-of-the-art exercise facilities, and offer 2,300 personal care assistants to support independent living in the home and community of each person’s choice. (Health Affairs Blog, 2020). Other Medicare Advantage plans offer benefits to address SDOH such as loneliness and social isolation (Health Affairs Blog, 2020).

To reinforce this growing support to incorporate SDOH into individual and community health, the American College of Physicians encourages physicians, policymakers, communities, and individuals to recognize the importance of these factors (Daniel, Bornstein, & Kane, 2018). Among its nine recommendations, the leading physician organization calls for “Increased efforts to evaluate and implement public policy interventions with the goal of reducing socioeconomic inequalities that have a negative impact on health. Supportive public policies that address downstream environmental, geographical, occupational, educational, and nutritional SDOH should be implemented to reduce health disparities and encourage health equity.”

From a national policy perspective, “The Improving Social Determinants of Health Act of 2020,” (HR-6561) was introduced by Representative Nanette Diaz Barragán (CA-44) on April 21, 2020. The legislation calls for the Centers for Disease Control and Prevention (CDC) to award SDOH-related grants to the state, local, territorial, and Tribal health agencies and organizations as well as nonprofit organizations and institutions of higher education (Trust for America’s Health, 2020).
This annotated bibliography provides a selection of peer-reviewed articles pertinent to the SDOH, with a focus on how these factors relate to health education and promotion and health inequities. The selected peer-reviewed journal articles discuss access to healthy food, education, housing, transportation, and employment in relation to health and health outcomes. The literature review primarily includes articles published in health education and promotion journals during the last six years. SOPHE members have open access to articles published in Health Education & Behavior, Health Promotion Practice, and Pedagogy in Health Promotion: The Scholarship of Teaching and Learning as part of their SOPHE membership benefits. SOPHE also has a variety of taped webinars on this topic available in its Center for Online Resources and Education (CORE). A variety of other resources are available from CDC such as sources of data, research, tools, and policies that can assist health education researchers and practitioners (CDC, 2020).

We hope this annotated bibliography is useful for faculty strengthening their health education curriculum for undergraduate or graduate students, for practitioners in providing examples of innovative ways to address SDOH in their health care settings and communities, and for students who are considering future research or dissertation topics. To make progress in the health of this nation, health education specialists must reach out to other non-public health sectors to address SDOH and provide innovative pathways so that all people can live longer and healthier lives.
Access to Healthy Food


This study highlights the importance of access to healthy food in health promotion. In Springfield, Missouri, surveys were carried out among 1,392 households to assess the ease of purchase, availability, and affordability of certain food items. The article concludes that for policies surrounding the increase of healthy food intake, it might be effective to consider factors such as improvement in food access, social cohesion, walkability, and crime.


To improve food choices, strategies referred to as “nudges” are being increasingly used to improve the visibility and appeal of certain items to increase the frequency of selection of those items. These strategies nudge people toward a targeted choice without reducing the amount of options available. A survey about a nudge program was carried out among clients in six urban food pantries in Utah. This program focused on the strategies to increase the selection of certain food items. The results revealed that the nudge program helped to promote the selection of healthy food items among the clients who used these pantries. Thus, concluding that interventions like these could be utilized to increase nutritious diets among the population using food pantries.


Studies done in the past demonstrate an association between residents living in food deserts and less healthy diets and higher risk for obesity. One strategy utilized by policymakers focuses on the expansion of grocery stores in food deserts. The authors investigated the accessibility of WIC retailers for the low-income urban and low-income rural area residents in Washington state. The study concluded that the transportation options must be included in food accessibility research for it to be effective.

A systematic review of literature on the failure of grocery store interventions was carried out by the authors to examine the reasons grocery stores had been closed in food desert areas. The article mentions that generally, healthy food is more expensive than less nutritious food and is not easily affordable to people, affecting their food choices. The authors argue that interventions surrounding poverty reduction would be effective in sustaining the grocery stores in food deserts, helping to improve food choices among the residents in inner cities.


The study discusses a healthy eating program called Waupaca Eating Smart (WES) implemented in restaurants and supermarkets of a rural community in Midwest. Surveys, interviews, and literature reviews were utilized to assess the practicality and sustainability of this intervention. The study concludes that healthy eating interventions targeting restaurants as well as supermarkets might be promising to promote healthy eating choices in the rural areas.


Data from multiple surveys provide evidence of the difficulty faced by most people to pay their medical bills, resulting in little to no funds available for them to purchase food. The author utilizes person-level data on food insecurity before and after the Medicaid expansion, which reveals reduction in food insecurity in states that had adopted Medicaid expansion. The authors conclude that by increasing health care coverage for people in the United States, there is an opportunity to target food insecurity as a social determinant of health.


This article focuses on diabetes-related disparities in Inkster, a city in Wayne county.
Michigan. The partnership between multiple agencies was formed to focus on health promotion in the community through healthy eating and physical activity, connecting community members to available resources for health care, and developing ways to sustain community partnerships. Data were gathered to highlight policy changes related to healthier food choices at local businesses, modify community infrastructures, increase joint partnerships among community organizations, and utilize Community Health Workers to promote community health.

Parks, C. A., Stern, K. L., Fricke, H. E., Clausen, W., & Yaroch, A. L. (2020). Healthy Food Incentive Programs: Findings from Food Insecurity Nutrition Incentive Programs Across the United States. *Health Promotion Practice.* The article discusses how low intake of fruits and vegetables unevenly affects low-income populations and their increased risk of chronic diseases. Qualitative data on Healthy Food Incentive programs particularly from Food Insecurity Nutrition Incentive Grant Program (FINI) grantees across the United States was examined. The authors discuss findings from the study and highlight the positive impacts of FINI programs on reduction of food insecurity.

Shin, A., Surkan, P. J., Coutinho, A. J., Suratkar, S. R., Campbell, R. K., Rowan, M., ... Gittelsohn, J. (2015). Impact of Baltimore Healthy Eating Zones: An Environmental Intervention to Improve Diet Among African American Youth. *Health Education & Behavior, 42*(1_suppl), 97S-105S. Multiple interventions have been recommended and implemented to prevent youth obesity. However, most of these programs have focused on the school environment and not the community food environment. A nutrition intervention was carried out in Baltimore City, Maryland, which was successful in reducing children’s BMI percentile. This article shows how such interventions could help to promote healthy dietary choices in a low-income African American setting.

**Education**

Birch, D. A., & Auld, M. E. (2019). Public Health and School Health Education: Aligning Forces for Change. *Health Promotion Practice, 20*(6), 818–823. This article underscores the interdependent relationship between health and education. The authors include evidence from various studies to reveal how issues surrounding health among children and youth can impact their academic success.
The article also illuminates the positive association between higher levels of education and positive health outcomes. The Whole School, Whole Community, Whole Child model is discussed as a framework to make high-quality school health education accessible and its link to social determinants of health.


The article illuminates the evidence of a connection between the low health literacy and health disparities. Among the population at risk for low health literacy related disparities, Spanish speakers are affected the most. The authors suggest increased opportunities for health literacy among the Hispanic immigrants to address the gap in this area.


This article discusses the potential for a school-based health education to positively impact some aspects of oral health behavior among school-aged children. The intervention involved an evidence-based educational session provided to children, along with supplementary take-home educational materials. The pre- and post-intervention data were collected and analyzed, revealing the school-based health education program to be promising in influencing the health behaviors in children.


This article provides findings on the perspectives of barbers who were involved with Barbershop Talk with Brothers (BTWB) program, a community-engagement interventions program to promote HIV-risk reduction efforts among African American, heterosexual men in neighborhoods of Brooklyn. The barbers who were interviewed shared that participation in BTWB intervention provided a positive gain to them as well as the community. The authors suggest this program may be replicated in other settings such as beauty shops and could include various health
topics, including diabetes management.


The article discusses the lack of access to healthy foods in rural Lower Mississippi Delta as a factor contributing to the health inequity in this area. The authors carried out a six-month pre-post study to examine the effectiveness of the Mississippi Communities for Healthy Living (MCHL) nutrition intervention. Nutrition education sessions were provided to the participants, and results demonstrated the overall success of the nutrition education curriculum in improving participants' diet quality. The authors argue that for the nutrition education programs to be effective, factors such as the differences in educational level, household composition, and the weight status of the target population should be considered.


The authors reviewed data on adult literacy, infant mortality, and maternal education and identified that less than high school education among mothers was a risk factor for increased infant mortality. They performed a literature review of published studies on health literacy, which demonstrated that for the health education information to be effective, it should be appropriate to the cultural and literacy level, and easy to read. The authors also assessed the health information provided to pregnant women by various health agencies and discussed the evidence-based interventions carried out by Syracuse Healthy Start (SHS) programs involving health literacy. They concluded that tailoring the health education messages towards the specific audience could help increase the effectiveness of the health promotion activities.


This article describes a program created to train Community Health Workers (CHW)
in New Orleans, Louisiana to address root causes of health disparities. The CHWs were trained via participation in group activities, discussions, team activities, and some lectures, and completed a brief survey and pre- and post-test. The results showed significant increase in CHWs’ knowledge in five out of six sessions along with a high rating of each lesson and topic. The results suggest that training individuals in the community to focus on various aspects of social disparities could be beneficial to address social determinants of health.

Housing

Sleep-related infant injury is a leading cause of infant mortality in New York. There have been multiple instances in which cribs or bassinets were present in homes, yet, unsafe sleep surfaces were chosen by the parents. This study retrospectively reviewed cases of infant deaths caused by asphyxia or undetermined injuries in NYC. Factors such as size of the living space, presence of rodents/pests, access to adequate temperature setting, and overall poverty influenced the parents’ decisions to utilize unsafe sleep surfaces. The authors conclude that rather than being exclusively focused on health promotion efforts such as safe sleep techniques, it would be valuable to focus on social determinants of health, such as poverty and housing disparity.


Studies show that health and well-being of low-income populations could be positively influenced by improved housing quality. Data from National health Interview Survey linked to the US Department of Housing and Urban Development administrative records was used for this study. Improved health status and reduced possibility of severe psychological distress was reported by the individuals who entered public housing and multifamily housing. The authors argue that recognizing
the association between housing assistance and health would be valuable to policymakers and researchers to prevent mental health issues.


This article recognizes the tobacco-related disparity in the U.S. attributable to factors such as economic status, education, and housing type. The authors discuss the smoke-free policy that was implemented in subsidized public housing in El Paso, Texas. The results revealed that most residents wanted smoke-free housing as well as resources to help with smoking cessation. The article provides five key lessons learned during this study as the resources for practitioners.

**Transportation**


In this study, the authors utilized data from National Household Travel Survey (NHTS) to deduce that the residents with travel-limiting conditions in rural areas were less likely to decrease their overall travel time. The authors argue that the limited means of transportation could be the reason for this. Likewise, this population was more likely to regard the cost of travel as a top concern and less likely to consider the availability and accessibility as a bigger concern. Residents in rural areas face transportation-related challenges, including the access to health care. The authors conclude that health status, financial resources, and geographic location must be considered for effective transportation policies.


The article focuses on missed clinic appointments among the pediatric population in a Pittsburgh, Pennsylvania pediatric clinic. The authors reviewed electronic records to obtain demographic data and performed geospatial analyses to examine transportation characteristics. It was concluded that clinic non-arrivals were more
likely linked to longer travel times by bus or car from lower income Zip codes. This provides an opportunity to gear interventions toward reduction of the travel time and target other obstacles to pursuing health.

**Employment**


This study explores the relationship between employment status and physical health. Prior studies have shown an association between unemployment and poor health. To further explore this relationship, a systematic review of the longitudinal studies related to employment and physical health was performed by the authors. The results highlight the importance of developing interventions that target the population at risk for poor physical health due to employment status to address this social determinant of health.
References


