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Social determinants and health behaviors: conceptual frames and empirical advances

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Health behaviors shape health and well-being in individuals and populations. Drawing on recent research, we review applications of the widely applied 'social determinants' approach to health behaviors. This approach shifts the lens from individual attribution and responsibility to societal organization and the myriad institutions, structures, inequalities, and ideologies undergirding health behaviors. Recent scholarship integrates a social determinants perspective with biosocial approaches to health behavior dynamics. Empirical advances model feedback among social, psychological and biological factors. Health behaviors are increasingly recognized as multi-dimensional and embedded in health lifestyles, varying over the life course and across place and reflecting dialectic between structure and agency that necessitates situating individuals in context. Advances in measuring and modeling health behaviors promise to enhance representations of this complexity.

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Introduction

At any given point, an individual's health and health behaviors reflect physical endowments in combination with a cumulated set of experiences and circumstances that have unfolded over time, in distinct social and physical contexts. This perspective, a blend of medical sociology, social demography, and social epidemiology, emphasizes the social milieu of health, or what is more commonly known as the *social determinants of health*. Over the past decade, scientific and policy interest in the social determinants of health has grown markedly, reflecting increasing consensus that overall health and health disparities are shaped significantly by nonmedical factors [1,2]. While these nonmedical factors include individual characteristics, such as education, income, and health beliefs, many others derive from an individual's social and physical contexts — families, schools, workplaces, neighborhoods, and the larger political-economic organization of society — 'upstream' factors that further enable or constrain health [3]. Other nonmedical factors include the institutional and ideational contexts that shape normative environments and contribute to ideas and identities [3,4,5•].

This emphasis on 'extra-individual' social factors is reflected in the recent 2020 *Healthy People* framework, published by the U.S. Department of Health and Human Services, which states:

'*health and health behaviors are determined by influences at multiple levels, including personal (i.e., biological, psychological), organizational/institutional, environmental (i.e., both social and physical), and policy levels…Historically, many health fields have focused on individual-level health determinants and interventions.*' [6]

Below we review recent research on social determinants with a focus on health behaviors. Health behaviors are conceptually and practically pivotal in research on health. Conceptually, they are recognized as key mediating mechanisms between more distal structural and ideological environments and individual health outcomes. Practically, health behaviors are estimated to account for about 40% of deaths in the U.S. annually [7]. We organize this review thematically, highlighting selected conceptual frames and empirical advances in sociology and related fields, with emphasis on research published since 2013.

Health behaviors — definitions and emerging concepts

Health behaviors, sometimes called health-related behaviors, are actions taken by individuals that affect health or mortality. These actions may be intentional or unintentional, and can promote or detract from the health of the actor or others. Actions that can be classified as health behaviors are many; examples include smoking, substance use, diet, physical activity, sleep, health care seeking behaviors, and adherence to prescribed medical treatments. Health behaviors are frequently discussed as individual-level behaviors, but they can be measured and summarized for individuals, groups, or populations. Health behaviors are dynamic, varying over the lifespan, across cohorts, across settings, and over time. With smoking in the U.S, for example, the likelihood of initiation varies with

age. Recent cohorts of adults are less likely to smoke than those in the mid-1900s, smoking prevalence is higher in the south than in the west, and smoking became less common after the Surgeon General's Report of 1964 [8–11].

Focused interest in health behaviors, and efforts aimed at changing them, emerged in the mid-twentieth century [12]. Narrowly defined biomedical approaches to health behavior research and interventions have been critiqued in recent years for an overemphasis on individual choice and personal responsibility; this individual focus is reflected in theories built around educating individuals to change health beliefs and actions [4]. A sociological approach expands the bounds of inquiry by emphasizing the need to examine individual actions in context, recognizing a role for structure as well as agency. Such an approach considers the place of constraints that limit choice, and the role of normative structures that shape the social values attached to activities, identities, and choices. It also engages themes of inequality and power in society.

Conceptual and methodological advances in defining health behaviors emphasize integrative and dynamic measurement. An important theoretical advance in the last decade is the concept of 'health lifestyles' [4,13]. Policies targeting health behaviors tend to focus on a single behavior, often finding that these behaviors are resistant to change. A health lifestyle approach instead views behaviors as occurring in sets and influencing each other, developing from deeply rooted identities arising from membership in social groups [14]. Thus, health lifestyles are enacted at the individual level but are shaped by the meso and macro levels. Understanding the interplay between health behaviors is seen as fundamental for successfully changing those behaviors [15]. Most of the limited empirical work has focused on adults [16,17], but research and policy is now targeting the early life course as well [5•,18]. For example, Mollborn *et al.* modeled U.S. preschoolers' predominant health lifestyles and the intergenerational processes that give rise to them, finding that they predicted school readiness in kindergarten [5•].

A significant methodological advance has been the collection of more refined data on health behaviors through intensive longitudinal data collection [19]. Innovations in technology allow for simultaneous and frequent data collection on social and spatial dimensions of activities in real time, creating enhanced opportunities to learn how individuals practice health behaviors as they unfold in usual social and spatial settings [20,21•,22]. In the Human Mobility Project, Palmer and colleagues tested the feasibility of administering dynamic, location-based surveys by asking participants to download an app and install it on their phones, thereby gathering data on the phone's positioning as participants moved through their daily routines and completed the surveys [23]. Others highlight the promise of health behavior interventions that provide frequent consistent reminders, monitoring, and rewards, through wearable devices, including monitors, [24,25], such as a pilot study that suggested that personally tailored text messaging about diabetes self-care to adolescents with type I diabetes was associated with greater glycemic control after three months [26].

A 'social determinants' approach to health behaviors

The interdisciplinary approach labeled 'social determinants' seeks to understand how the social world shapes people's health. One major pathway is through health behaviors. Health scholars distinguish between 'downstream' (individual, in the body) and 'upstream' (social structural, macro-level) causes of health behaviors [27]. Examples of the latter include institutions such as the health care system — which is changing rapidly in the U.S. due to the Affordable Care Act and is a target of ongoing research [28] — and the labor market — recession-based changes in this institution have spurred recent research on health implications [29–31]. For example, Kalousova and Burgard examined subjective and objective recessionary hardships, finding that they predicted problematic substance use in distinct ways [31]. Medical and psychological research focuses largely on downstream causes, while political, economic, and sociological research focuses more on the upstream [3]. The 'meso' level between these two extremes is also fundamental for understanding health behaviors [32]. This level focuses on the proximate settings in which people live their lives — neighborhoods, workplaces, families, and the like — as well as the interpersonal interactions that take place within these settings. For example, examinations of women's HIV risk in sub-Saharan Africa has traditionally focused on dynamics within sexual relationships, but more recent work recognizes the need to situate these relationships within the larger context of women's lives, including their kinship, caregiving, and family responsibilities, as it is the family and kinship system in which gender, economic vulnerability and HIV risk are embedded [33].

Cutting-edge research into social determinants is taking place at the meso level. The importance of place for people's health is increasingly acknowledged [34]. For example, the effects of neighborhoods on health behaviors [35–38], a longstanding focus of research, are becoming better understood by modeling neighborhoods dynamically, accounting for selection, and modeling spatial features of neighborhood environments [39,40]. Wodtke measured neighborhood poverty across childhood, finding that long-term exposure was positively associated with the likelihood of becoming a teen parent [41•]. The spread of health behaviors in people's social networks can now be modeled statistically [42], and scholars are working to disentangle causality from selection in understanding these processes of social contagion