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Rethinking the relationship between socioeconomic status and health: Making the case for sociological theory in health inequality research

Emil Øversveen (1)

Håvard T. Rydland (1)

Clare Bambra (2)

Terje Andreas Eikemo (1)

(1) Department of Sociology and Political Science, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

(2) Institute of Health and Society, Faculty of Medical Sciences, Newcastle University, UK.

Corresponding authors: emil.oversveen@ntnu.no; havard.rydland@ntnu.no;

Abstract

Aim: To analyze previous explanations of social inequality in health, and argue for a closer integration of sociological theory in future empirical research. The explanations examined are the cultural-behavioural, materialist, psychosocial, life-course approaches, and the fundamental cause theory. Giddens' structuration theory and neo-materialist approaches inspired by Bruno Latour, Gilles Deleuze and Felix Guattari are proposed as ways of rethinking the causal relationship between socioeconomic status and health. *Conclusions:* much empirical research on health inequalities has tended to rely on explanations with a static and unidirectional view of the association between socioeconomic status and health, assuming unidirectional causal relationship between largely static categories. We argue for the use of sociological theory to develop more dynamic models, that enhance the understanding of the complex pathways and mechanisms linking social structures to health.

1. Introduction

During the last decades, a large body of evidence has accumulated demonstrating the significant differences in health between all socioeconomic levels of society, often referred to as the social gradient in health [1]. A key concept for explaining the gradient has been the social determinants of health, understood as the social and economic factors shaping health outcomes at the individual and population levels [2]. Interest in the social determinants of health can be traced back to the Report of the Working Group on Inequalities in Health, published by the United Kingdom Department of Health and Social Group in 1980 and commonly referred to as the Black Report [3]. The report showed that health inequalities had been widening since the establishment of the British National Health Service in 1948, and argued that health was fundamentally shaped by income, education, working conditions and other forms of socioeconomic factors located outside the healthcare system [4, 5]

Following the Black Report, researchers have distinguished between *downstream factors*, understood as individual behaviours, health policy and medical care, and *upstream factors* linked to the general socioeconomic structure of society [6, 7]. The argument is that upstream factors act as the "causes behind the causes" driving health inequality [8, p. 11], and that researchers and policy makers should focus on structural issues rather than factors located closer to the individual health outcomes [9, 10]. Structure impacts health directly and indirectly through creating mechanisms acting as social determinants of health, determinants which are distributed in a way reflecting the general socioeconomic stratification of society [11, p. 19]. Models showing the social determinants are generally layered and multi-levelled, often represented visually by graphics showing the determinants sorted by proximity to the individual's health (see Braverman, Egerter & Williams [12, p. 383] and Dahlgren & Whitehead [13, p. 11]).

While researchers have been able to demonstrate a powerful and enduring relationship between socioeconomic status (SES) and health, specifying the concrete pathways and mechanisms linking SES to health has proved elusive, posing problems for designing effective policy interventions to combat health inequalities [2, 14-17]. Some researchers have attributed this failure to conceptual weaknesses in the social determinants framework [18-21], echoing long-standing criticisms of social epidemiology for being theoretically underdeveloped [22-24].

In this article, we analyze social determinants as a conceptual framework, arguing that implicit presuppositions about the causality between SES and health has made it more difficult to identify causal mechanisms and pathways for researchers working within the social determinants framework. It is not in the scope of this article to sum up the research or empirical findings linked to social determinants in health, nor to give an exhaustive overview of the different theories and explanations of social inequality in health. Rather, our ambition is to pinpoint some weaknesses in the underlying conceptual framework informing public health research on social inequality in health, as well as suggesting some ways these weaknesses may be remedied by drawing on sociological theory.

Based on a critical analysis of Link and Phelan's Fundamental Cause Theory, the most prominent theorization of the social determinant perspective, we argue the need for rethinking the relationship between socioeconomic status and health, making the case for sociological theory as a valuable tool for such a rethinking. The article thus joins a tradition of arguments for a closer theoretical integration between public health research, social epidemiology and medical

sociology [22, 25, 26]. In the last part of the article, we present Giddens' theory of structuration and neo-materialist approaches as examples of how sociological theory may contribute to a common conceptual and theoretical framework specifically for the study of social determinants of health, possibly giving a more robust knowledge base for tackling health inequalities through policy interventions.

2. Theories of health inequalities

In the four decades since the Black report, the concept of 'social determinants' has often served as a general framework for researching social inequalities in health. The influential 'rainbow model' proposed by Dahlgren and Whitehead [27] identifies the main social determinants of health as access to essential goods and services (specifically water, sanitation and food); housing and the living environment; working conditions; and unemployment [27]. Because of its multi-level approach, the framework is capable of incorporating several different subset theories and explanations emphasizing areas as diverse as material resources, life-course, cultural factors, institutional settings, psychosocial factors and so on (see Mackenbach [28] for an overview). In the following, we will give a brief overview over some of these theories operating within the social determinant perspective, before moving on to considering Link and Phelan's fundamental cause theory in more detail.

2.1 Cultural-behavioural, materialist, psychosocial and life-course approaches

Bartley [29] refers to four commonly used approaches for studying the social determinants of health: cultural-behavioural, materialist, psychosocial, and life course.

The cultural-behavioural approach asserts that the link between socio-economic class and health is a result of differences between socio-economic class in terms of their health-related behaviour: smoking rates, alcohol and drug consumption, dietary intake, physical activity levels, risky sexual behaviour, and health service usage. Such differences in health behaviour, it is argued by some, are themselves a consequence of disadvantage, and unhealthy behaviours may be more culturally acceptable amongst lower socio-economic classes [5]. This is largely an intentionalist, agency based account of health inequalities.

The materialist explanation focuses on income, and on what income enables in terms of access to goods and services and the limitation of exposures to adverse physical and psychosocial risk factors. Materialist approaches give primacy to structure in their explanation of health and health inequalities, looking beyond individual level factors (agency) in favour of the role of public policy and services such as schools, transport and welfare in the social patterning of inequality [29, 30]. This is a structural account of health inequalities.

Psychosocial explanations focus on how social inequality makes people feel and the effects of the biological consequences of these feelings on health. Bartley describes how feelings of subordination or inferiority stimulate stress responses which can have long term consequences for physical and mental health especially when they are prolonged [29]. It is the way stress makes people feel that is important in relation to health outcomes rather than straightforward exposures to stressors. The psychosocial explanation thereby begins to integrate structure and agency approaches. The life course approach combines aspects of the other explanations, thereby allowing different causal mechanisms and processes, as well as structure and agency, to explain the social gradient in different diseases. Health inequality between socio-economic classes is therefore a result of inequalities in the accumulation of social, psychological, and biological advantages and disadvantages over time: “*the social is literally embodied; and the body records the past*” [31, p. 54]. The life-course explanation captures some of the complexity of the interrelationships between social position, society, and health by combining aspects of the materialist, psychosocial and behavioural-cultural approaches [32].

2.2 Fundamental cause theory

A highly influential attempt to clarify the relationship between SES and health has been Link and Phelan’s fundamental cause theory (FCT). When Bruce G. Link and Jo Phelan introduced the theory in the 1990s, it was as a response to ~~the~~-prevailing research on the social distribution of risk factors proximate to disease outcomes [33]. The FCT aims to explain how health inequalities at the societal level can persist or even increase despite general public health improvement by turning attention to the fundamental factors putting people at risk of risks [34, p. 85]. This contextualizing of risk factors could be seen as trying to formalize the interest for risk factors proximate to the disease outcome into a more sociological theory of health inequality. It turns

focus further “upstream”, and requires a closer examination of the societal forces generating social inequality.

Link and Phelan [34, p. 80] argue that both “classic” and “modern” schools of epidemiology merely see SES as “proxies for truer causes lying closer to disease in the causal chain”. Since focus is generally on these proximate causes, social epidemiologists risk losing sight of the association between social conditions and health which they originally sought to examine. Previous research also over-simplifies the connections between disease and social status, thereby neglecting the “the multifaceted and dynamic processes through which social factors may affect health and, consequently, may result in an incomplete understanding and an underestimation of the influence of social factors on health” [34, p. 81] (Link & Phelan, 1995: 81). Link and Phelan therefore introduce the notions of contextualizing risk factors and the idea of SES as a fundamental cause of disease. The latter is done with reference to a general discussion of sociological causality by Stanley Lieberman [35, p. 185]. He argues that continual “basic causes” work through changeable surface causes to generate empirical, observable outcomes; and it is the basic causes that should occupy social researchers’ attentions.

Similar to the distinction between upstream and downstream factors, Link and Phelan label SES as a fundamental cause driving health inequalities, generating disparities through multiple intervening risk factors mechanisms that will vary over time. Since SES acts as a meta-mechanism causing these intervening mechanisms, social inequalities in health cannot be understood through proximal risk factors alone, but must be addressed upstream, where the fundamental cause driving health inequalities lies.

The concept of resources plays a vital role in this model: High SES individuals have access to an array of flexible resources, which they use to avoid time- and place-specific health risks and reduce the consequences of disease if they get ill. These resources are broadly defined as money, knowledge, power, prestige and the access to social connections, which links to the materialist explanation [34, p. 87]. Therefore, the fundamental cause theory claims that inequalities in health will persist in spite of changing medical and societal circumstances as long as the general socioeconomic structure giving access to resources remains stable, thus explaining the persistence of the health gradient over time. Herein lies the theory’s biggest contribution to health inequality research: its ability to surpass the changing risk factors, and integrate them in a conceptual cohesion. The relationship between SES and the utilization of resources is given the

function of a meta-mechanism: it generates inequality through intervening, specific, proximate mechanisms. Past explanations of health inequality claimed that social status could only function as a placeholder for more proximate causes of disease not yet identified; is unable to have an independent causal relation to disease, and can thus only be a correlate and an indicator of 'true' causes. The FCT gives SES the status of a meta-mechanism as an answer to that notion [34, 36, p. 1327].

Compared to the social determinants perspective, the FCT represents a significant formalization of the relationship between SES and health outcomes. Since its introduction, the FCT has frequently been tested in empirical research, where findings in general have confirmed it. Masters, Link, and Phelan [37] group these findings into some overall "facts". Among these "facts" are the inverse association between SES and health being both strong and persistent over time, and how preventable and non-preventable mortality are shown to have different social gradients, both in strength and over time. It is still noted by these researchers that further research is needed to understand the specific relationships between risk, resources and health [37-40].

3. Discussion

The fundamental cause theory has provided a solid framework for thinking about health inequalities, directing our attention to the greater forces behind social inequality, and explaining how health inequalities may persist over time in spite of changing medical and social circumstances. In the following, we will give a critical analysis of the FCT, identifying some conceptual pitfalls in the theory, especially regarding the conceptualization of SES and health, and the presumed causality between them. We then move on to consider how these gaps may be bridged by connecting the social determinants perspective with two sociological theories which we find especially well-suited for exploring alternative forms of causality between agency and structure: Giddens' [41] structuration theory, and neo-materialist approaches inspired by Bruno Latour [42], Gilles Deleuze and Felix Guattari [43]. We also refer to previous attempts to integrate sociological theory with research on health and disease.

In our understanding, FCT interprets the relationship between SES and health as basically linear and unidirectional. SES influences health outcomes first through access to resources, which further determines the individual's ability to avoid risk and disease, i.e. the specific

mechanisms generating inequalities in health at a population level. As a result, SES is for all purposes moved outside the analysis, gaining status as a “first mover” with a one-way impact that does in itself not need to be explained. Because of the unidirectionality of the model, it also implies that SES is insusceptible to both the resources currently available as well as to health outcomes, an a priori assumption we find reason to question.

Difficulties connected to the distinction of concepts is also a part of our argument, here exemplified by the concepts of SES, resources, mechanisms, and health outcomes in FCT. Karen Lutfey and Jeremy Freese [36, 44] have on several occasions commented, challenged and expanded the FCT. One of their angles has been to criticise the ambiguous use of the term “resources” in the theory. On one hand, the concept of resources is sometimes stretched - put to use wherever it fits best, as in situations where little SES-related personal agency is required (e.g. wearing seatbelts and driving a car with airbags [40, p. 267]). This vagueness reflects a lack of conceptual clarity that some researchers have suggested characterizes research on health determinants as a whole [18]. By claiming that socioeconomic status acts as a basic cause influencing health through contingent resources and mechanisms, FCT depends on the possibility to distinguish analytically between SES, resources, mechanisms, and health outcomes in practical research. However, not all empirical phenomena fit easily into these categories. On the other hand, if the presentation of mechanisms and resource utilization is vaguer, “arguments may seem to lose the semantic content of a theory altogether” [44, p. 72]. An example of this ambiguity is how high-SES individuals are described as *harnessing* the benefit of health innovations, or *garnering* health advantages [45, p. 732, 46, p. 27]. Here, an inherent feature of the FCT comes to show: the tendency to tautological explanations of SES-health associations – i.e. “people of higher SES benefit more because they benefit more” [44, p. 72]. This way of explaining health inequalities by other inequalities may be interpreted as a mere restatement of the relationship between SES and health at the population level, reformulating the problem without coming any closer to specifying concrete pathways and mechanisms that can explain the health gradient [28].

3.1 Theory as a tool for research

In the following section, we argue that a well-considered application of sociological theory can be useful for clarifying some of the theoretical and methodological issues described above.

Before moving on to presenting this argument in detail, we should make clear what we mean when we talk about ‘theory’ in this context. While social theory is often thought of as a way of interpreting and generalizing observed social phenomena, theory also serves a more general function as conceptual frameworks for empirical research [47]. In the most general sense, sociological theory can be understood as providing basic ontological conceptions about the nature of human interaction and society, establishing analytical tools and categories for the systematic generation of social scientific knowledge [41, p. xvii]. Such conceptual frameworks are necessary because of the nature of human perception: Making any kind of observation or statement about the world involves making some sort of generalized inference from concrete phenomena to generalized concepts, which means that our perception of the world is already filtered by conceptual categories and presuppositions [48]. Since the same also applies to scientific observations, even the use of seemingly neutral scientific techniques in routine data collection is based on certain theoretical implications that fundamentally shapes the knowledge these techniques are able to generate [49]. Theory and empirical research should therefore not be seen as disconnected worlds, but rather as mutually interdependent processes that together allow for the creation of scientific knowledge. In this scheme, theory acts as the framework for generating the basic concepts, problematics and hypotheses that guide practical research, as well as establishing standards by which this research may be evaluated.

From a sociological point of view, the question of how the relationship between population health and social structure should be understood reflects a more general theoretical debate about the interaction between society and individual agency. Historically, social theory has been divided between two main forms of explanation, either focusing on social structure or the purposive actions of individual actors. The difference between the two forms of explanation is both epistemological and ontological in nature, often coming down to the question of whether society determines human action or vice versa [41, p. 2]. Even though the dualism between structure and agency has been much criticized in sociological theory, the health inequalities literature remains starkly divided between structuralist and actor-oriented approaches, exemplified by the selection-causation debate, which we will address later. Social theorists of health either tend to portray individual health behaviour as fully determined by social structure, or as existing in a vacuum free from social and cultural influences [50, p. 347]. As we stated previously, public health research has historically been criticized by medical sociologists for

being theoretically under-developed [24, 25, 51, 52]. Several authors have attempted to bridge the gap between medical sociology and sociological theory, applying such diverse perspectives as parsonian functionalism [53, 54], socio-cultural perspectives [55, 56] and institutional perspectives [57, 58], as well as approaches inspired by theorists Pierre Bourdieu [59, 60] and Michel Foucault [61, 62]. Of particular note has been the work of William Cockerham and Graham Scambler, who for decades have been advocating the development of medical sociological theory in their work as researchers and editors (see Scambler [26, 63] and Cockerham [64, 65]). In an article about the state of theory in research on health and illness, Cockerham [22] argues that theoretical development is flourishing, noting a growing preoccupation with the relationship between agency and social structure. In this article, we try to contribute to this development, focusing specifically on how public health research on the social determinants of health may be strengthened by a more sociological approach.

3.2 Reconciling structure and agency

Despite the theoretical advances made in medical sociology, models depicting social determinants in public health research still tends to view the relationship between structure and health as largely uni-directional, treating socioeconomic status and health as largely static concepts located in opposite ends of the causal chain [12, 19, 66]. As stated previously, attempts to overcome the dualism between agency and structure has been a central concern for post-war sociological theorizing [67]. An influential attempt is Anthony Giddens' theory of structuration. In *The Constitution of Society*, Giddens [41] establishes a general framework for understanding and studying the interaction between actor's practices, social systems and structure. Giddens starts by distinguishing between systems and structure, defining structure as a virtual order of rules that knowledgeable actors draw on to reproduce concrete social systems by engaging in social practices [41, p. 17]. Since rules are enforced through the employment of resources, structure is inherently tied to relations of power and domination [41, p. 18]. By drawing on structure in their daily social practices, human actors not only reproduce the social systems they exist within, but also reproduce and modify the structural order itself. This idea means that neither agency or structure is given causal primacy, but are rather seen as mutually interdependent processes shaping social life in a dialectical manner [41, p. 297].

Rather than conceptualising SES or social determinants as determining factors existing outside and prior to human action, empirical research on health inequalities could focus on how social determinants are produced by human practices structured by general patterns of power and inequality. Utilizing Giddens' structuration theory in empirical research entails paying attention to how people's practices produce and reproduce the environments in which they live and work, how these practices are embedded in nested social systems of varying size and complexity, and how they are enabled and constrained by virtual structural orders of rules and resources. In contrast, and as previously stated, the social determinant perspective rests on a distinction between upstream and downstream factors, the argument being that individual health-related behaviour should be seen as fundamentally determined by structure. This seems at least partly motivated by political reasons, as a common argument informing social determinants research is that policies aiming at reducing health inequalities should do so by targeting the general socioeconomic inequalities in society [9, 12]. We suspect this perspective to arrive from the debate between causation and selection, or material circumstances and behavior. Williams [68, p. 137] describes how the debate emerged after the release of the Black report in 1980s Britain. The societal and scientific climate at during the epoch of Thatcherism and class warfare lead to a hardening of positions, where selection and causation were perceived as political as well as scientific standpoints. This way of treating causality directions as mutually exclusive, could, in the words of Macintyre [5, p. 740], lead them to become "false antitheses". From the perspective of Giddens' structuration theory, however, the distinction between upstream and downstream factors becomes less important. Rather than trying to prove that socioeconomic status 'really' determines individual health-related behaviour, a giddensian view implies paying attention to how health inequalities are created by the interaction between individual action and social structure without necessarily giving causal primacy to one of the two.

Taking inspiration from Giddens' theory of structuration would also mean bringing in an institutional perspective which has been largely absent from research on social determinants in health [69]. This could lead to an overly naive view of the state, by tacitly assuming that the state only functions to reduce inequalities prior to and outside its own actions. By paying attention to how resources are coupled with structure, researchers could also tackle the question of how state institutions and health policy may actually widen or perpetuate inequality over time. Beckfield and colleagues [69] argue the need for a framework capable of integrating research on social

determinants in health with research on how welfare state institutions distribute health and illness through direct and indirect mechanisms. As a general theory for understanding how modern welfare states are constituted, as well as how this constitution shapes social practice and individual consciousness, structuration theory may be a valuable resource in developing such a framework for health research. Current research on the relationship between institutional factors and health often tend to be conducted at a fairly high analytical level, often comparing population health indicators between countries grouped according to welfare state regimes [70-73]. While results from these studies have been illuminating, we argue that they should be coupled with an attention towards how social policy is actually implemented in practice [74]. Knowledge about how social policies actually work could also enable researchers to design more effective policy changes and interventions, which have tended to be less effective than hoped [15, 16].

Motivated by the distinction between upstream and downstream factors, researchers have tended to downplay the role of health policy on individual health outcomes [18]. The conceptual choice to label health care as a downstream factor, and the rest of the institutional structure - social policy, economic policy, etc. - as an upstream determinant, may introduce an artificial distinction between the health care system and other social institutions. In a seminal sociological essay, Zola [75] argues that medicine functions as a generalized institution of social control with the power to determine what is considered healthy and deviant behaviour in society. Excluding the health care system from the analysis risks ignoring the way medical institutions themselves reflect and contribute to general structures of power and inequality in society, and that some of the mechanisms and pathways linking SES to health may be located within the health care system itself.

3.3 Rethinking SES, health and causality

At the broadest and most basic sense, social inequality in health means that social structures are reproduced in patterns of disease and mortality [76]. Several authors have noted an inconsistent use of measures of health and social status in research on health inequalities [66]. Treating SES as a fundamental and uncaused cause that does not itself need to be explained, has led to an under-theorization of social status in empirical research. Regidor [19] shows how theoretically deviating concepts like SES, socioeconomic position, social class, and social position are used

overlapping and interchangeably. In various FCT-based research, SES is seen as a sometimes multifaceted but almost always static measure. Education, poverty, occupational status, household and individual income are all operationalized as SES measures (see among others Link [77], Chang & Lauderdale [78], Phelan et al. [40]), often with little reflection on how use of different measures may affect findings [66]. Regidor argues that our understanding of these social structures affect analyses as well as policy implications, and requests a stronger theoretical conceptualization of SES and health [19, p. 896]. Recent empirical studies confirm this, showing how different patterning of health inequalities are depending on the measure of SES used [70-72].

Recently, sociological theorists have attempted to rethink the relationship between agency and structure through what has been described as neo-materialist approaches [79]. Generally inspired by philosophers Gilles Deleuze and Felix Guattari [43] and the actor-network theory associated with Bruno Latour [42], neo-materialist theory uses metaphors like assemblage and networks to conceptualise social phenomena as emerging from patterned networks made up of diverse and interacting materials [79, 80]. Neo-materialist theory thus combines the post-structuralist interest in studying the relationship between medical knowledge and power with a renewed attention to material factors and the biological body [79]. In contrast with the material theories currently informing research on the social determinants in health, neo-materialist approaches move away from the tendency to see social structure, resources and agency as fixed entities, and instead argue that these phenomena should be understood as emergent properties arising from the complex interaction between populations of diverse materials. A key proposition is that the nature of social aggregates such as groups, organizations and institutions should not be assumed in advance, but rather be mapped out during empirical research [42]. For research on social determinants in health, taking inspiration from neo-materialist theory would therefore imply moving away from static conceptions of SES, health and the causality between them, in favor of more dynamic and open-ended models.

A radical analytical move is the expansion of the concept of actors to include non-human agents such as technology, texts, geographical features, organization and other entities capable of influencing social life [80]. Medical sociologists working within an actor-network theory framework have taken an especially keen interest in medical technologies [55], studying medical technologies such as IT systems [81], clinical records [82], and asthma inhalers [83]. With

healthcare increasingly characterized by rapid technological innovation, a neo-materialist approach could be a valuable framework for investigating how health inequalities is shaped by the use and development of medical technology.

Neo-materialist approaches provide a framework for studying how multi-layered and complex interaction between human and non-human actors produce effects at different levels of social organization. This makes them well suited to capture the complex interaction between social structures and health. A key concept in neo-materialist approaches is the notion of emergence. Emergent entities appear when parts come together to form wholes that are irreducible to the sum of its components, the classic example being how hydrogen and oxygen atoms come together to form water [84]. In practice, this means a move away from linear causality and the distinction between cause and effect, instead seeing social phenomena as emerging from populations of interacting entities with no necessary causal primacy given to either agent [85, p. 12]. In this perspective, SES would not be conceptualised as a basic cause exercising itself through specific mechanisms, but an emergent property arising from patterned networks of social interaction. As mentioned, the idea of SES as a fundamental cause presupposes the ability to distinguish between social position and the resources this position gives access to, a distinction that is often difficult to make in practice. While education is often used as a measure of socioeconomic position, it could well be argued that education itself is a contingent mechanism given that access to education in many western countries precipitates certain economic or cultural resources, leading to a chicken-or-egg dilemma of what really determines what. From a neo-material perspective the problem of distinguishing between SES, resources, and mechanisms disappear, as it is assumed that SES is caused by an interplay rather than searching for a fundamental cause determining all others. The neo-materialist approach need not just be used for analyzing equity and medical technologies, but could be extended to the role of other social determinants.

In this perspective, the relationship between SES and health would not be assumed to be unidirectional and linear across the social gradient, but to function through multiple pathways operating at several different levels. An implication of conceptualising the relationship between SES and health as a gradient, is the assumption of a symmetric association where the same mechanisms are at play in all strata of the social structure. In a discussion of the Black report, Sally Macintyre [5] states that there is no a priori reason to suppose these inequality-generating

processes to work equally throughout the social structure. Approaching SES as an emergent phenomenon would also mean that it may make sense to speak about several co-existing structures of stratification rather than one general socioeconomic hierarchy.

4. Conclusions

In this article we have tried to explicate the underlying theoretical frameworks informing the social determinants of health and the fundamental cause theory. We have argued that the implicit understanding of socioeconomic status as a first and unmoved cause has led to an under-theorization of social inequality, potentially impeding practical research. The fundamental cause theory rests on a distinction between socioeconomic position, resources and mediating mechanisms, which can be difficult to discern in practical research. This poses problems for researchers concerned with identifying the specific pathways that link socioeconomic status and health. We have instead argued for the need for a conceptual and causal rethinking of socioeconomic status and population health, and that sociological theory could aid the development of more dynamic explanatory models and frameworks in public health research.

More theoretically founded models can have implications for both research and policy. In our usage, theory refers to the general conceptual frameworks and analytical tools informing empirical research. According to Braveman [12], a barrier to understanding how upstream factors influence health is the expectation that a single research study can encompass the entire causal pathway from social structure to individual health. We agree, and argue that the way forward is to advance knowledge by linking together results from different research based on a common framework ensuring consistencies between studies. By providing a conceptual glossary of workable definitions and analytical strategies, sociological theory may be a resource for empirical health research.

A sociological approach to health inequalities and public health research would mean suspending a priori notions about SES, health and causality. Rather than treating SES and health as static categories where the former always and necessarily determines the latter, they would be conceptualised as fluid entities existing in a mutually influencing relationship. While this may seem like a radical proposal, this perspective seems fundamentally consistent with the multi-level approach to health inequalities seen in the social determinants framework. The notion of emergence implies that SES and health emerges from the interaction between populations of

entities [85]. This could prove a good fit for the statistical methods often employed in social epidemiology, which are often better at showing associations between phenomena than establishing causal pathways [86]. Quantitative studies proving associations and correlations could then be combined with qualitative studies identifying the mechanisms and pathways between SES and health - something often requested in the literature (see Braveman [12]). In order to tackle health inequalities through effective policy interventions, we need to understand complex mechanisms and pathways connecting upstream and downstream factors over potentially long periods of time [12]. A thorough implementation of sociological theory in both methodology and empirical research is therefore required.

5. References

[1-27, 29-45, 47-50, 60, 66-72, 74-76, 78-82, 84-92]

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