BMJ Global Health

Power analysis in health policy and systems research: a guide to research conceptualisation

Stephanie M Topp ,[1,2] Marta Schaaf ,[3] Veena Sriram,[4] Kerry Scott ,[5,6] Sarah L Dalglish ,[5,7] Erica Marie Nelson ,[8] Rajasulochana SR ,[9] Arima Mishra ,[10] Sumegha Asthana ,[11] Rakesh Parashar,[12] Robert Marten ,[13] João Gutemberg Quintas Costa,[14] Emma Sacks ,[5] Rajeev BR,[15] Katherine Ann V Reyes ,[16] Shweta Singh[17]

To cite: Topp SM, Schaaf M, Sriram V, *et al*. Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021;**6**:e007268. doi:10.1136/bmjgh-2021-007268

Handling editor Seye Abimbola

SMT, MS and VS are joint first authors.

Received 24 August 2021
Accepted 12 October 2021

For numbered affiliations see end of article.

Correspondence to
Dr Stephanie M Topp;
globalstopp@gmail.com

ABSTRACT

Power is a growing area of study for researchers and practitioners working in the field of health policy and systems research (HPSR). Theoretical development and empirical research on power are crucial for providing deeper, more nuanced understandings of the mechanisms and structures leading to social inequities and health disparities; placing contemporary policy concerns in a wider historical, political and social context; and for contributing to the (re)design or reform of health systems to drive progress towards improved health outcomes. Nonetheless, explicit analyses of power in HPSR remain relatively infrequent, and there are no comprehensive resources that serve as theoretical and methodological starting points. This paper aims to fill this gap by providing a consolidated guide to researchers wishing to consider, design and conduct power analyses of health policies or systems. This practice article presents a synthesis of theoretical and conceptual understandings of power; describes methodologies and approaches for conducting power analyses; discusses how they might be appropriately combined; and throughout reflects on the importance of engaging with positionality through reflexive praxis. Expanding research on power in health policy and systems will generate key insights needed to address underlying drivers of health disparities and strengthen health systems for all.

Summary box

- Analysing how power shapes health policy and systems is critical to identifying underlying factors driving health disparities, health systems challenges and societal inequities.
- Power is complex to explore conceptually, theoretically and methodologically, and explicit analyses of power in health policy and systems remain relatively infrequent.
- There is no consolidated resource that provides health policy and systems researchers with an empirical, theoretical and methodological starting point on power.
- We introduce a new framework for identifying and refining discrete areas of inquiry for power-focused health policy and systems research.
- Theoretical and conceptual understandings of power are summarised and linked to a selection of methodologies and methods for conducting analyses.
- Illustrative examples of combining theory and methodology to analyse different levels of power in health policy and systems research are provided.
- Expanding research on power in health policy and systems in all contexts will generate insights needed to address underlying drivers of health disparities and strengthen health systems for all.

INTRODUCTION

Power is defined as the ability or capacity to 'do something or act in a particular way' and to 'direct or influence the behaviour of others or the course of events'.[1] Relationships of power shape societies, and in turn, health policies, services and outcomes.[2] Power dynamics—or the relational power that manifests in the interaction among individuals and organisations—also influence health systems, or 'the organizations, people and actions whose primary intent is to promote, restore or maintain health'.[3] The universe of power dynamics that are pertinent to the study of health policies and systems includes diverse types and locations of policy, social, implementation and political processes. Power dynamics have also influenced health systems planning and research, by defining what is seen as a health system, and the translation or adaptation of health systems models across distinct geographic contexts over time.[4 5]

Studying power is thus a core concern of researchers and practitioners working in the field of health policy and systems research (HPSR), an interdisciplinary, problem-driven field focused on understanding and

strengthening of multilevel systems and policies.[6] Accelerating theoretical development and empirical research on power in this domain is crucial for several reasons. First, it provides a deeper, more nuanced understanding of the mechanisms and structures that lead to social inequities and health disparities.[7] Second, it reveals historical patterns entrenched in health and social systems, allowing contemporary policy concerns to be seen in a wider context and lessons to be drawn from these trends.[8] Third, analysing power can contribute to the (re)design or reform of health systems to redress imbalances and progress towards improved health outcomes.[9]

Studies incorporating examinations of power in public health and HPSR have gradually increased in number, including, for example, analyses of accountability, political prioritisation, commercial determinants of health, determinants of universal health coverage and state sovereignty in health agenda setting.[10–15] Nonetheless, explicit analyses of power in HPSR remain relatively infrequent.[7 16] Lack of a power-specific lens may reflect the continued dominance of biomedical and behaviouralist approaches in health research and funding, limitations stemming from the political economy of research funding and agendas, and reluctance among institutions and individuals to examine their own role in perpetuating existing power dynamics.[17 18] Power is also complex to examine conceptually, theoretically and methodologically. Seminal publications providing guidance on different aspects of power research include Erasmus and Gilson's[19] paper on investigating organisational power; the health policy analysis reader edited by Gilson *et al*,[20] and Loewenson *et al*'s[21] methods reader on participatory action research (PAR). Recent resources also provide conceptual overviews of power.[7 9 22] However, there remains no comprehensive resource that can serve as a theoretical and methodological starting point for aspiring power researchers, irrespective of disciplinary orientation or area of HPSR interest.[16]

This paper aims to fill this gap, building on the above-mentioned resources but providing a more consolidated guide to researchers wishing to consider, design and conduct power analyses of health policies or systems. Recognising the expansive and interlinked nature of power relations, we focus this article on the different ways to research power as it manifests in health policies and systems. We also engage with literature on the social determinants of health insofar as these determinants impact health policies and systems.

This project emerged from the Social Science Approaches for Research and Engagement in Health Policy and Systems (SHAPES) thematic working group of Health Systems Global. SHAPES members (SMT, VS, MS and KS) with interest and expertise in power analyses reached out to the wider network and requested other interested researchers and practitioners to join the project. Recognising that expertise can take many forms, no criteria were placed on participation other than an interest in the topic and willingness to contribute to the paper's development. The group was ultimately comprised of researchers from academic institutions, research organisations and multilateral agencies, in both the Global North (eight) and Global South (six) all of whom have experiential knowledge of assessing and negotiating power in health systems at various levels, and a number of whom have published in this area.

The process to develop this resource began in 2019. Members of the original group (SMT, VS, MS and KS) first prepared an outline of the paper via virtual and email discussions among group members. That outline was then divided into sections on theory, methodology and reflexivity, and section leads were appointed by a process of consensus. Group members volunteered to work on a section or sections based on experience and ability to input. Literature was sourced from database searches combined with expert guidance from group members. Working group leads organised the work of these sections and led drafting. Section drafts were reviewed by each group and then the full group, and two external researchers were invited to provide feedback on specific aspects of the paper. Online supplemental appendix 1 illustrates the iterative process by which the ideas were conceptualised, synthesised and agreed on at different stages of the paper drafting. All authors also read and commented on at least one version of the final paper. As a whole, the project was collaborative and worked from the logic of crowd-sourcing among a diverse set of authors engaged in HPSR.

DOING POWER ANALYSES IN HEALTH POLICIES AND SYSTEMS RESEARCH

This paper outlines key considerations and principles for power analyses in health policies and systems research throughout the research cycle. The paper is divided into three sections. The first section starts by discussing the identification of a research topic and presents three overarching empirical 'sites'–or discrete areas of inquiry–for power-focused HPSR. The empirical sites offer a starting point for study design by providing researchers with ways to reflect on and refine their research question. This section also highlights researchers' positionality and its influence on the whole research process. The second section provides an introduction to (and tabular summary of) theories useful for analysing power, demonstrating each theory's relationship to one or more of the empirical sites. Finally, the third section of the paper introduces a selection of methodologies, considers their usefulness in the context of different types of power analyses and discusses how they, too, must be selected with consideration for the research question, the researcher's positionality and alignment with theory. The ideas presented in this paper apply to all geographic contexts; however, we draw largely on HPSR literature from low-income and middle-income countries. This paper does not engage extensively with the use of specific data collection tools or methods (eg, interviews, observations and

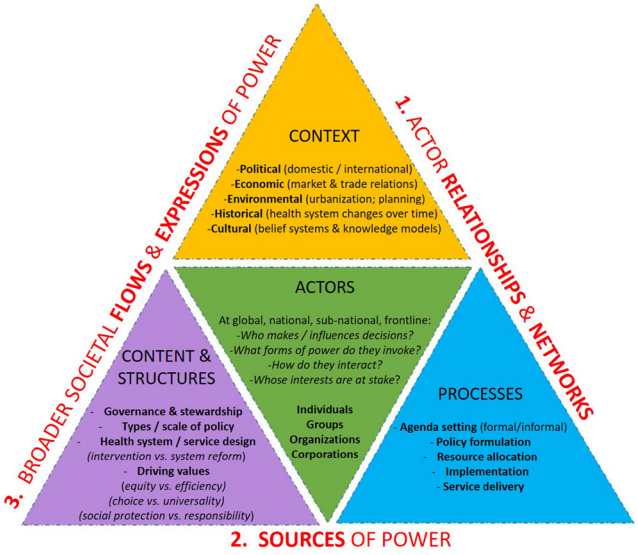


Figure 1 Three empirical sites of power research in health policy and systems.

document review) associated with a given methodology, as other resources address these topics in detail.[19 21 23 24]

Identifying a topic

Power is imposed, negotiated and contested in diverse ways in the context of health policy formulation and implementation and health systems functioning. Research into power in the field of HPSR generally focuses on how the 'expression' of power enables or blocks health system change or policy implementation and what types of power are implicated in the process.[16 20] From these two broad areas of focus, we discern three main sites of empirical work on power in the health policy and systems field, recognising that these three sites overlap significantly. These are: (1) actor relationships and networks; (2) sources of power and (3) societal flows and expressions of power.

In figure 1, we locate each of these empirical sites of power research around an adapted version of Walt and Gilson's[25] seminal Policy Triangle. This figure highlights that applied research on power cannot be conducted in isolation from the actors, context, content, structures and processes of the policy or system in focus. By demonstrating the link between actors, context, and structures and broad areas of power research, the three empirical sites are intended to provide a point of departure for the researcher to consider *what* is the issue or topic of interest. We expand on each of these empirical sites further below.

Empirical site 1: actor relationships and networks

The role and manifestations of power in *actor relationships and networks* comprise an important site of empirical research on power in HPSR. We list this site first because we understand health systems as *social systems*,[6] fundamentally shaped by the values, intentions and relationships of the human and organisational actors within them. As illustrated in the central green triangle in figure 1, questions about power relating to actor relationships and networks include foundational enquiries about which individuals and organisations make and influence (health) policy and system decisions, how they relate to one another and why.

Empirical site 2: sources of power

As outlined in Sriram *et al*[16] and Moon[22], a substantial body of theory is directed towards understanding how actors draw on power from particular sources.[16 22] Sources of power thus represent a second important grouping of research on power in HPSR. Some methodologies, particularly those based in political science and economic theory, can describe and problematise key sources of power, such as material capital; technical expertise; political and bureaucratic position and influence; and forms of cultural capital and power gained from title, education and knowledge. Resultant research can provide analyses regarding which actors are impacting processes, from where they derive their power and how their actions impact policy and systems. This empirical site focuses our attention on 'drivers of the drivers', surfacing the institutions, organisations and attributes that provide a fountainhead of power in HPSR.

Empirical site 3: societal flows and expressions of power

A third empirical site of power research in health policy and systems relates to the societal flows and expressions of power. Research on the exercise of power shows how power is expressed, leveraged and experienced to impact health policy and systems, and ultimately, health inequities. Reflecting the intersection among context, actors and structures, research related to flows and expressions of power can generate insights regarding how formal or informal institutions shape health policy-making and service delivery, or on the impact of prevailing ideologies regarding health policy on service delivery.[26 27] Researchers may focus on the ways that health policies and systems shape inequities[28] or the ways that different groups have accepted, adapted and subverted health systems, such as the dictates of colonial medicine[29 30] or neocolonial or internalised colonial forms of public health practice.[31 32]

ADDRESSING POWER WITHIN THE RESEARCH PROCESS: POSITIONALITY AND REFLEXIVITY

In the process of issue identification and throughout the research process, it is critical to recognise the contested relationships of power that shape research itself. The nature of evidence in the fields of global health and health policy and systems research is contested,[33–35] and the funding of evidence generation is politicised.[18 36] Researchers—whether investigating power or other aspects of health and society—must be willing to consider their own role as actors in a contested process. Health research broadly tends to reward—in professional status, resourcing and publishing–positivist and utilitarian

Table 1 Questions to guide reflections on power in health policy and systems research

Preliminary steps	► Why are you (or the group you are part of) interested in asking these research questions? ► Who do you expect will benefit from the outcomes of the research? ► Who is part of the research team and how have you engaged with issues of positionality, personal status, and diverse disciplinary backgrounds? ► Who are you intending to work with, and what individual, group, institutional or social dimensions of power may impact these partnership? ► What voices or perspectives, particularly those of individuals or communities with direct experience of your research topic, might you be missing? ► How will you address issues of representation in your work, whether in terms of study design or in terms of team composition?
Concurrent steps	► What are the mechanisms for capturing dissent or alternative views in the research process, both within the research team and with research participants and collaborators? ► When analysing data, how do you account for differences in power among and between research participants and researchers? ► What types of dialogue and consultations can you offer within the research team and/or partners and how frequently? ► Whose voices are loudest within the process and can you do anything to shift that dynamic? ► How are you building adaptive learning processes into the research to take into account diverse perspectives and modify your approach accordingly?
Concluding steps	► Who is included in the analytical process and are there opportunities to expand participation in 'meaning-making' work? ► How will you communicate and share the outcomes of your research, particularly with participants/respondents involved in the research? ► Are there mechanisms in place to broaden your reach beyond 'usual suspects' (ie, academic circles)? ► Have you put into place any process whereby data can be stored/archived in the places where it was gathered? ► Are equal opportunities given for authorship among the research team and/or with local collaborating institutions or individuals? ► What format will the publication(s) take and is there scope for writing in languages other than English and/or translation of results into other languages? ► What other formats may results be presented in other than peer-reviewed journal articles? ► If the work is going to be published in a peer-reviewed journal, will the resultant article(s) be open access?

approaches over humanistic and relativistic and/or interpretive ones,[36] Northern voices over Southern ones[37] and biomedical knowledge over other forms of knowledge.[38] Indeed the positionality of researchers is present in the many forms of power and privilege that can distance them from the issues they are analysing. Researchers' professional positionality in the political economy of global health, as well as their individual lived experiences and attributes relating to race, caste, gender, class, ability and more, can significantly influence the choice of questions and (as discussed further) theories and methodologies used to enact analysis of those issues.

How should researchers engage with these challenges? There is no straightforward mechanism by which to operationalise critical reflexivity. Instead, building on the work of Sultana,[39] Citrin,[40] Mafuta *et al*,[41] Abimbola[37] Keikelame and Swartz[42] and Pratt,[43] we offer a set of questions in table 1 to guide reflection on power as it impacts a given research project. Researchers should consider: for whom they are designing and conducting data collection and analysis and writing up findings? And, how does this influence 'bad habits' that pervade global health research?[44] However, discussions of power dynamics as they manifest in politics, social norms and otherwise is not a straightforward endeavour. Those who are brought in to collaborate in research processes, whether they be community members, health services representatives or funders, might be uncomfortable with an explicit focus on power relations. Shining a light on power asymmetries could create risks for collaborators or participants.

A conscious nurturing of critical reflexivity within all stages of a research process is a necessary component of ethical and rigorous praxis. However, analysing power while simultaneously maintaining awareness of the power relationships that structure the research endeavour itself is no easy feat. These questions and processes demand a more deliberative, bottom-up, time consuming approach to defining and answering research questions than is often enacted in HPSR. Prospective researchers of power should factor this time into their work. Since the political economy of global health and health policy and systems research can create incentives that undermine reflective, inclusive and transparent approaches to defining and answering research questions,[18] these considerations should be taken into account from this initial step through the dissemination of findings and beyond.

REFINING THE RESEARCH QUESTION WITH THEORY AND METHODOLOGY

The three empirical sites provide a launching pad for considering avenues for power inquiry for health policy and systems. In moving from a topic of interest to a more specific research question on power, and in conjunction with considerations of their own position and power, the researcher must consider their epistemological foundation (ie, what do we consider knowledge and how do we know it), the theories that provide a relevant analytical scaffolding, and concurrently, the methodologies that will enable appropriate collection, collation and analysis of data to that end.[45]

Thinking about theory

Theory helps to shape *what* we ask about power in HPSR. As a field, HPSR aims to generate research to inform policy and action[24]; this has implications for theory application, with the end goals of equity and justice often informing epistemological and theoretical positions.[16]

Some theories are foundational and address the nature of the state, society and human interaction; others are more operational in that they focus on discrete elements of the state, society and human interaction. As part of a process of reflexive research praxis, the entire research team should consider the guiding principles they wish to follow in their research and the implications that these choices have for theory choice and application. For example, researchers with applied interests may consider frameworks designed for this purpose, such as the PowerCube[46]; conversely, researchers seeking a deeper theoretical understanding of mechanisms driving power imbalances may consider foundational theories, such as Max Weber's sources of authority,[47]

HPSR as a field has developed in dialogue with theories of power from diverse disciplines from the social sciences and humanities, including philosophy, sociology, political science, anthropology, feminist theory, postcolonial and gender studies, history, and international relations, among others. Most of the foundational theories cited in peer-reviewed social science literature (eg, Marx, Gramsci, Bourdieu, Foucault and Haugaard; see ref 9) originated in high-income countries, reflecting and perpetuating the discursive and material power held by scholars and academic institutions in these contexts. Many of these theories were developed in the 19th and 20th centuries, and while they describe macro-level processes that are still salient, they were not developed with contemporary phenomena—such as the proliferation of mobile technology and social media—in mind. Some scholars developed critical theories to analyse and critique power structures from the point of view of the oppressed. Theories of domination originating from feminist, postcolonial, Marxist, queer or critical race theory, among others, have been used to describe structural determinants of health, health policy and healthcare, and healthcare-seeking behaviours.[48–50]

Many contemporary critical theories focus on the intersectionality of systems of subordination[51–53]; researchers have begun to suggest ways of applying these theories in health policy analyses.[54 55] Postcolonial literature and subaltern studies have not (yet) been applied extensively in HPSR[29] but have increasingly been cited in discussions about how to decolonise global health[37 42 56] and in recent scholarship on social inequities during the COVID-19 pandemic.[57]

Other frameworks used in HPSR, particularly those from public policy studies, draw insights from social science theories to explore power without necessarily invoking power explicitly, such as street-level bureaucracy theory[58] and diffusion theory.[22] In table 2, we provide an illustrative list and brief explanation of influential theories of power that have informed or been applied to studies assessing health determinants, health policy and health systems. We recognise that the approaches described in this paper do not capture the full breadth and complexity of this topic, and a more detailed version of this table can be found in online supplemental appendix 2.

Pairing theory with methodology

Different theories are better suited to analysing power asymmetries characterising each of the three empirical sites. With regards to empirical site 1, theories with potential for exploring actor relationships and networks may include Weber's three sources of authority[47]: street-level bureaucracy[58]; feminist standpoint theory,[50] critical race theory[48] and Bourdieu's fields.[59] Theories particularly relevant to examining the sources of power (empirical site 2) include Barnett and Duvall's taxonomy of power,[60] Bourdieu's 'fields',[59] Gramsci's concept of cultural hegemony[61] and feminist approaches.[50 62] Theories relevant to expansive questions regarding how power is expressed and manifest in society at large (empirical site 3) may include Foucault's concept of knowledge/power,[63] Veneklasen and Miller's 'expressions of power'[64] and Lukes' three faces of power.[65]

While theory helps to shape *what* we ask about power in HPSR, methodology shapes *how* we ask it and how we interpret the findings (figure 2). Below we provide an overview of 10 methodologies (broadly defined) that are of use in the context of the three empirical sites. The organisation of the methodologies under the empirical sites is merely illustrative. While some methodologies may be closely associated with a given empirical site (eg, social network analysis is associated with actor relationships and networks), many others are not. In conjunction with ongoing reflexive considerations of positionality, researchers choosing a methodology should consider their theoretical and epistemological position and the context of the research question, since the assumptions underlying the application of methodologies can be different (eg, the difference between an objectivist case study and an ethnography). Selection of methodologies should also consider for whom the research is being conducted, and whether the aim is to generate or further

Table 2 Select theorists and theories useful for research on power in health policy and systems

Theories useful for power analysis	*Key constructs/brief description*	*Core texts and examples of application*
	KEY THEORISTS and THEORIES	
Three faces and dimensions of power, Stephen Lukes	Influenced by Marx and Durkheim, Lukes claims power is exercised in three ways: (1) the power to decide, (2) the power not to decide (ie, to set the agenda and circumscribe the limits of debate), (3) the power to influence people's wishes and thoughts.	Lukes 2004[65] Buse and Hawkes 2014[120] Reynolds 2019[121]
Three sources of authority, Max Weber	Weber described political authority as legitimate domination, distinct from concepts of coercion and force. He defined three sources of political authority: traditional (derived from established customs and social structures), charismatic (derived from the individual leader's characteristics) and rational-legal authority (derived from the formal rules and laws of the state).	Weber 1948[47] Sriram *et al* 2018[122]
'Fields,' Pierre Bourdieu	Bourdieu proposed the concepts of fields – social domains characterised by specific logics and norms, and peopled by actors with varying levels of power. Actors in fields use forms of capital (economic, cultural, social or symbolic) to advance their self-interest and preferences.	Bourdieu 1990[59] Shiffman 2015[123] Behague *et al* 2008[124] Hanefeld and Walt 2015[125]
Biopower, Michel Foucault	Foucault's influential concept of 'power/knowledge' holds that rather than being an instrument of power, knowledge is constitutive and inseparable from it. In 'Discipline and Punish', Foucault discusses how modern institutions and techniques of control created systems of disciplinary power. He also contrasted older forms of 'sovereign' power, founded on violence, with modern 'biopower', which influences life by administration, optimisation and regulation.	Foucault 1978[126] Dalglish *et al* 2017[127] Sen *et al* 2020[14] Scott *et al* 2017[128]
Taxonomy of power, Michael Barnett and Raymond Duvall	Barnett and Duvall's framework seeks to understand how states negotiate policy processes in the international sphere. They differentiate between direct forms of power (*compulsory* power between actors, and *structural* relationships) and more diffuse forms (*institutional* power that favours some actors, and *productive* power over possession and distribution of resources).	Barnett and Duval 2004[60] Marten 2019[129] Moon 2019[22]
PowerCube, John Gaventa	Gaventa's PowerCube presents an operational model for the analysis of power. It depicts a dynamic relationship among three aspects of power – forms of power (based on Lukes' three faces of power) – visible, invisible and hidden power; spaces where power is exercised and claimed; and, levels of power – global, national or local.	Gaventa *et al* 2011[46] Nisbett *et al* 2014[130] McCollum *et al* 2018[131]
Expressions of power, Lisa VeneKlasen *et al*	The four categories of power in this framework include power over (authority over others), power to (individual powers to act on something), power with (to act with others or collaborations) and power within (the ability of a person to recognise their self-knowledge, abilities or a sense of self-worth).	Veneklasen and Miller 2002[64] McCollum *et al* 2018[131]
Cultural hegemony, Antonio Gramsci	Gramsci focuses on the concept of cultural hegemony, by which the state and the ruling classes use ideology, rather than violence, force, or economic modalities, to control and maintain capitalist power.	Gramsci 1999[61]; Worth 2002[132]
	THEORETICAL CONTRUCTS RELEVENT TO HPSR	
Feminist theories/domination	Although there are differences among various theories, feminist-informed theories broadly elevate important and previously underaddressed issues, most notably: the ways in which gender hierarchies shape health policies; what care is available; and the relationships among and between health sector employees and patients. In addition to exposing structures and manifestations of domination, feminist theories may be used as part of an approach that seeks to identify and foster empowerment and solidarity, both through research processes and results.	Young 2014[62] Morgan *et al* 2016[133] Theobald *et al* 2017[134] Parikh 2012[135]
Critical race theory	Critical race theory originated in US law schools in the 1980s as a way to understand how the law has been used to maintain white supremacy. Concepts and methods from critical race theory, including race conscious orientation, which require specific attention be paid to racism and its interpersonal and structural drivers, have been used to explore racial inequity in the context of health and health systems.	Borrell 2018[136] Hardeman *et al* 2020[137]
Necropolitics	Necropolitics builds on Foucault's idea of biopower as the state's ability to control and shape life, in contrast to the more traditional power of life and death over citizens. Necropolitics is the use of social and political power to control (differentially) how citizens live and die, with some (subjugated) bodies suspended between life and death, and has been used to understand inequities in health and the shortcomings of current global health governance and the pluralistic (ie, market infused or market dominated) sphere of public health.	Mbembe 2019[53] Lee 2020[138] Sandset 2021[57]
Subaltern studies/ postcolonialism/decolonisation	Subaltern people are those who are subordinated for reasons of class, caste, gender, race, language and culture; subaltern studies centres these people and the structures of subordination. Postcolonialism was initially developed in literary theory; it is concerned with narrative and representation and how this perpetuates hegemonic forms of knowledge and power. Decolonisation refers to the social science study of the process of decolonisation, as well as to a newer movement to 'decolonize global health' (and likely other fields and disciplines).	Spivak and Said 1988[139] Guha 1997[140] Caxaj 2015[141] Kingori and Gerrets[142] McPhail-Bell *et al* 2013[143 144]

Continued

Table 2 Continued

Theories useful for power analysis	*Key constructs/brief description*	*Core texts and examples of application*
	OPERATIONAL PUBLIC POLICY THEORIES	
Models of decision making in public policy	Various models of public policy decision making incorporate power in different ways. Buse *et al*, for example, list rational and incremental models of decision making, a mixed-scanning approach to decision making and the punctuated equilibrium model. Cairney *et al* developed a framework to study policy stability and change to explain differences among countries in tobacco control policy, as well as why policy did not reflect the public health evidence base. These approaches can be combined with other frameworks that interrogate power.	Etzioni 1967[145] Buse *et al* 2012[146 147] Dalglish *et al* 2019[147] Cairney *et al* 2011[148]
Political-economic determinants	Political-economic determinants of health highlight the power imbalances that emerge from the interplay between macroeconomic structures, ideas and policy.	Rushton and Williams 2012[149] Battams and Townsend 2019[150] Kentikelenis and Rochford 2019[151] Bump and Reich 2013[152]
Health and human rights	The right to an adequate standard of living and to medical services were included in the 1948 Universal Declaration of Human Rights; the right to health was included in the 1966 International Covenant on Economic Social and Cultural Rights. From the late 1980s, the field of 'health and human rights' coalesced as a way of understanding the human rights drivers and impacts of the HIV pandemic. Human rights provides a diagnostic or descriptive framework for research on the right to health, as well as solutions for how health and other government sectors should react to that research.	Mann 1996[153] Gruskin 2004[154] Freedman 2007[155] Yamin and Norheim 2014[156] Forman 2009[157]
Street-level bureaucracy	Initially developed by political scientist Michael Lipsky, the theory of street-level bureaucracy is concerned with state employees who interact with citizens in the everyday conduct of their tasks, such as police officers, local government officials and health providers. These bureaucrats have some degree of discretion in their interpretation and implementation of policies. From the perspective of community members, decisions and actions taken by street-level bureaucrats constitute government policy.	Lipsky 1980[58] Erasmus 2014[158] Walker and Gilson 2004[159]

HPSR, health policy and systems research.

refine a theory or produce more immediately actionable findings. A summary table of these methodologies may be found in online supplemental appendix 3.

To further make this point, table 3 provides illustrative examples of possible combinations of research question, theory and methodology. The inclusion in the table of two research questions at each of the different levels of health policy and systems function (micro, meso and macro) is intended to demonstrate (although incompletely) the breadth of potential inquiry as well as to showcase the specificity sometimes required to enable effective theoretical and methodological linkage. A key point made clear by the repeat

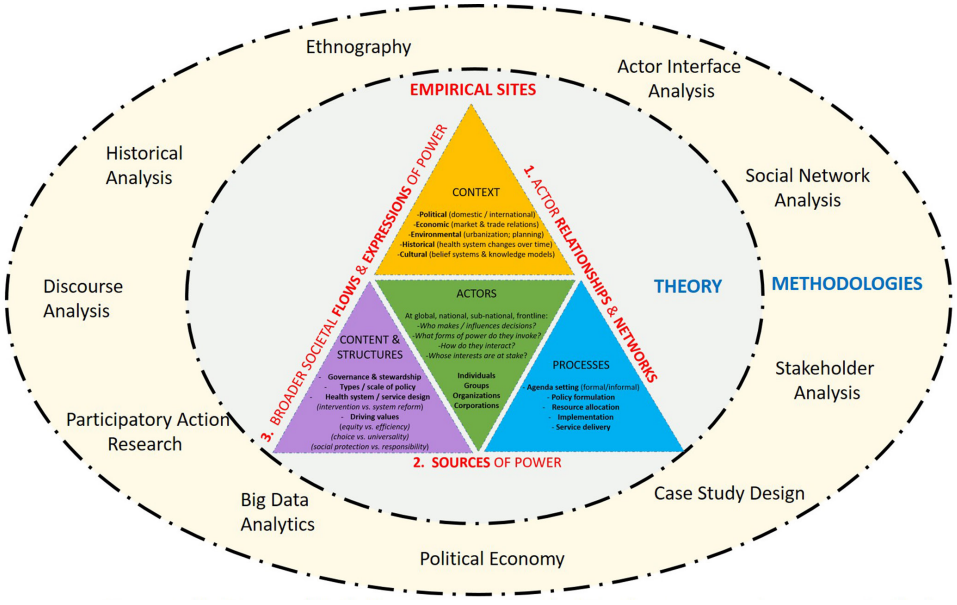


Figure 2 Linking empirical sites, theory and methodologies for research on power in health policy and systems research.

Table 3 Illustrative combinations of theory and methodology paired with research questions on power in HPSR

Socioecological level	Examples of research questions	Examples of potentially applicable theories	Examples of corresponding methodologies
EMPIRICAL SITE 1: ACTORS AND ACTOR NETWORKS			
Micro	*How does the degree of participatory leadership style among hospital and district health directors affect hospital staff roles in accountability processes?*	▶ Weber's three sources of authority. ▶ Lipsky's street level bureaucracy.	▶ Actor interface analysis. ▶ Case study.
	How does X peer communication and mentorship programme foster health advocacy and political capabilities within a racially diverse community of commercial sex workers?	▶ Gaventa's PowerCube. ▶ VeneKlasen *et al*'s expressions of power. ▶ Feminist theories. ▶ Intersectionality. ▶ Critical race theory. ▶ Subaltern theories. ▶ Health and human rights.	▶ Ethnography. ▶ Comparative case study. ▶ Actor interface analysis.
Meso	*In what ways do the social networks of public and private healthcare providers differ in terms of their relationships with state level health authorities and insurers? How might these differences affect the introduction of a regulatory regime for counterfeit antibiotics?*	▶ Bourdieu's fields. ▶ Policy transfer.	▶ Social network analysis. ▶ Historical analysis.
	How have the formal and informal channels of in-person communication regarding the liberalised abortion law shaped how the law is interpreted and practiced by health providers in rural areas of country X?	▶ Political systems. ▶ Lipsky's street level bureaucracy. ▶ Feminist theories. ▶ Health and human rights.	▶ Stakeholder analysis to develop line of enquiry methods. ▶ Actor interface analysis. ▶ Social network analysis. ▶ Case study. ▶ Ethnography.
Macro	*How did civil society representatives in country X leverage social and moral power conferred by their HIV status and other identities, to influence the country's proposal to the Global Fund to Fight AIDS, TB and Malaria?*	▶ Lukes' three faces of power. ▶ Bourdieu's fields. ▶ Foucault's power/knowledge. ▶ Gaventa's PowerCube.	▶ Actor interface analysis. ▶ Case study.
	What attributes of social networks among representatives of large corporations involved in the production, packaging and sale of food products, Ministers of Health, and Ministers of Trade, influence the role that Countries X, Y and Z played in WHO discussions regarding limitations on advertising of unhealthy food?	▶ Barnett and Duvall's taxonomy of power. ▶ Necropolitics. ▶ Postcolonial theory. ▶ Kentikelenis and Connor's power asymmetries in global governance for health. ▶ Rushton and Williams' frames, paradigms and power.	▶ Social network analysis. ▶ Actor interface analysis. ▶ Discourse analysis. ▶ Case study. ▶ Historical methods.
EMPIRICAL SITE 2: SOURCES OF POWER			
Micro	*In what ways does the discretionary power of frontline health workers influence the implementation of a new programme to provide home-based care for type 1 diabetes in country Y, and what are the determinants of how that power is exercised?*	▶ Lipsky's street level bureaucracy. ▶ Long's actor oriented perspective. ▶ Critical race theory.	▶ Ethnography. ▶ Case study.
	How do middle manager conceptions of biomedical expertise and primary healthcare shape the integration of community health workers into primary health centre teams?	▶ Critical race theory. ▶ Lipsky's street level bureaucracy. ▶ Feminist approaches. ▶ Intersectionality. ▶ Bourdieu's fields.	▶ Ethnography. ▶ Case study. ▶ Actor interface analysis.
Meso	*How do political authority, financial resources, cultural capital and technical expertise shape the performance of(health governance/research funding decisions) institutions in country X?*	▶ Bourdieu's fields. ▶ Weber's three sources of authority. ▶ Critical race theory.	▶ Historical methods. ▶ Ethnography. ▶ Case study. ▶ Political economy.
	How do conflicts of interest in the stewardship of public and private medical education shape the recruitment, distribution and competency of human resources for health in country X?	▶ Gaventa's power cube. ▶ VeneKlasen *et al*'s expressions of power. ▶ Grindle and Thomas' policy elites.	▶ Historical methods. ▶ Ethnography. ▶ Case study. ▶ Stakeholder analysis.

Continued

Table 3 Continued

Socioecological level	Examples of research questions	Examples of potentially applicable theories	Examples of corresponding methodologies
Macro	*How does the presence of supra-state, global trade institutions—such as the WTO or International Investment Agreements (IIAs)—differentially influence governments' capacity to control their health policy and programming?*	▶ Barnett and Duvall's taxonomy of power. ▶ Gramsci's cultural hegemony. ▶ Foucault's power/knowledge.	▶ Political economy. ▶ Discourse analysis. ▶ Case study research.
	What institutional and legal mechanisms can regulate tech companies developing artificial intelligence (AI) applications that collect and analyse real-time health data?	▶ New institutionalism. ▶ Rushton and Williams' frames, paradigms and power. ▶ Health and human rights.	▶ Political economy. ▶ Discourse analysis. ▶ Case study research.
EMPIRICAL SITE 3: SOCIETAL FLOWS AND EXPRESSIONS OF POWER			
Micro	*How do socioeconomic factors such as class, religion, ethnicity, gender and caste interact to shape the relative power dynamics of local-level health planning committees?*	▶ VeneKlasen *et al*'s expressions of power ▶ Gaventa's PowerCube. ▶ Critical race theory. ▶ Feminist theories/domination. ▶ Intersectionality.	▶ Ethnography. ▶ Case study research. ▶ Participatory action research.
	How do the relationships between health workers, their representative associations/unions and local politicians shape the practice of corruption, fraud and abuse at the facility-level, block-level and district-level?	▶ Ostrom's institutions for collective action. ▶ Street-level bureaucracy. ▶ Long's actor oriented perspective.	▶ Social network analysis. ▶ Ethnography. ▶ Case study.
Meso	*How do shifts in political parties or political regimes change explicit or implicit values driving sexual and reproductive rights and health policy?*	▶ Grindle and Thomas' policy elites. ▶ Gramsci's cultural hegemony. ▶ Necropolitics. ▶ Health and human rights.	▶ Discourse analysis. ▶ Historical methods. ▶ Case study. ▶ Political economy.
	How have colonial-era institutions, legislation and bureaucratic structures influenced health workforce policy at the national level in country Y?	▶ Max Weber's three sources of authority. ▶ Foucault's power/knowledge. ▶ Subaltern studies. ▶ Postcolonialism.	▶ Historical methods. ▶ Discourse analysis.
Macro	*How do multinational corporations strategise at the global and national-level to influence health policy in their interest? What countervailing forces or powers exist or form in opposition to this influence?*	▶ Rushton and Williams' frames, paradigms and power. ▶ Kentikelenis and Connor's power asymmetries in global governance for health. ▶ Gramsci's cultural hegemony. ▶ Policy transfer.	▶ Political economy. ▶ Discourse analysis. ▶ Case study research. ▶ Stakeholder analysis. ▶ Big data analytics.
	How is the foreign policy and geopolitical strategy of country 'Z" influencing the distribution of its COVID-19 vaccine supplies to other countries?	▶ Barnett and Duvall's taxonomy of power. ▶ Rushton and Williams' frames, paradigms and power. ▶ Kentikelenis and Connor's power asymmetries in global governance for health.	▶ Political economy. ▶ Case study research. ▶ Stakeholder analysis.

listings of theories and methodologies across the various questions in table 3 is that there are many valid combinations of theories and methodologies.

USEFUL METHODOLOGIES FOR EMPIRICAL SITE 1: ACTOR RELATIONSHIPS AND NETWORKS

Stakeholder analysis is an actor-oriented methodology useful for examining the power differentials of key policy and health system actors, ranging from frontline healthcare workers to national level policy makers.[20] Stakeholder analysis is most commonly used prospectively, as a tool for researchers and practitioners to understand the feasibility of a given policy and to develop responses to likely challenges in implementing that policy.[66] Stakeholder analysis can also be used retrospectively, as a stand-alone study or in combination with political economy and case study approaches. Stakeholder analysis is also commonly used to consider sources of power, described in further detail below.

Actor interface analysis focuses on understanding individual actors (rather than organisations), examines policy through the lens of power struggles between individuals and explores how this behaviour is embedded in actors' lived experiences and values, called actor *lifeworlds*.[67 68] When used to study health policy, actor interface analysis examines how interactions among different actors shape the implementation and outcomes of the policy. Where actors interact, collaboration, contestation or resistance can be identified and analysed. This methodology brings an actor-centric lens

to the study of power in policy implementation as compared with other (more institutionally focused) methodologies and helps to examine how policy-related decisions and action are shaped by the actors themselves.[67 69 70]

Social network analysis is the quantitative study of relationship patterns among actors, with actors being broadly defined to potentially include people, groups or organisations.[71 72] This methodology draws from sociology and mathematical foundations of graph theory to illuminate how the nature of actors and ties (eg, number, strength and type of tie, such as friendship, supervisory relationship and whether information, resources or beliefs were shared) enable expressions and tools of power (eg, money, pressure, influence and knowledge) to be concentrated, spread or blocked.[73] In the field of HPSR, social network analysis can be used to analyse the health system structure as it functions, including through informal personal relationships, rather than as it is formally defined.[74] This can inform policy makers about how ties among actors can influence the diffusion and implementation of health reforms and programmes; how social networks influence governance and financing structures; as well as informing the public about how policy makers may be using power to include or exclude certain actors.[71 75 76]

USEFUL METHODOLOGIES FOR EMPIRICAL SITE 2: SOURCES OF POWER

Case study design is a form of empirical inquiry characterised by an 'intense focus on a single phenomenon within its real-life context'[77] and is particularly useful in situations where boundaries between the phenomenon of interest and the context are blurred. In relation to power in HPSR, case study research has most commonly been used to produce exploratory and explanatory accounts focusing on different actors' expressions of power (formal and informal, overt and covert) to answer 'how?' and 'why?' certain health policy or system features exist and to assess efforts to change power dynamics.[20 78] By combining an interpretivist (seeking to understand individual and shared social meanings) and critical (questioning one's own and others' assumptions) analytical approach, researchers may use this methodology to consciously account for the ways in which broader social and political environments influence both macropower and micropower dynamics.[79 80] Comparative case studies can be used for theory building or theory testing.

Political economy analysis is a methodology used to identify and describe structures such as government and the law; resources (labour, capital, trade and production) and how they are distributed and contested in different country and sector contexts, and the resulting implications for policy and indicators of well-being.[81] Of relevance to HPSR, political economy can draw on both quantitative and qualitative methods to explore the nature of the political landscape through mapping the power and position of key actors. Political economy can also explore how the distribution of resources influence relationships and through this the feasibility and trajectory of policy reform over time.[81 82] Reflecting their roots in the comparatively more positivist paradigms of political science and economics, these methodologies have been used for purposes of explanation and hypothesis testing in HSPR, including in the context of evaluations and policy design. Consistent with HPSR's multidisciplinary orientation, political economy methodologies can nonetheless be developed and deployed in a way that accommodates—or even centres—interpretive goals.

Big data analytics examines high volume, biological, clinical, environmental and behavioural information collected from single individuals to large cohorts at one or several time points.[83] Big data analytics can uncover patterns in health outcomes and health behaviours[84]; health policy (eg, resourcing and implementation fidelity)[85]; and health system function (eg, provider behaviours).[86 87] When applied in conjunction with a power lens, big data analytics can reveal important and often masked trends or patterned experiences, prompting further explanatory work or evaluative action.[88] For example, Yu *et al*[89] use big data analytics to explore the influence of private medical providers in promoting unnecessary medical interventions.[89] Big data analytics may also help identify systemic issues such as discrimination, information asymmetry and patient-provider dynamics and their influence on care quality. Nonetheless, given its volume as well as its potential interest to profit seeking entities, big data presents unique challenges for ethics, boundaries and reflexivity. Researchers should carefully consider the potential misuses of the data, the extent to which the data accurately represents the factors of interest (construct validity) and which individuals and groups are overlooked in analyses that focus on the mean (or median).[90]

USEFUL METHODOLOGIES FOR EMPIRICAL SITE 3: SOCIETAL FLOWS AND EXPRESSIONS OF POWER

Discourse analysis entails close examination of the use of language in texts (such as laws, policies, strategy documents or news media articles) and oral communication (such as transcribed interviews, debates or speeches) to describe the ways in which communicative acts construct shared understandings of what is normal[91 92] and what is possible, legitimate, or true.[63] Discourse analysis should include the study of what is present in the text, as well as what is assumed or ignored, shedding light on often unacknowledged material asymmetries and social hierarchies that pervade health policy-making at all levels.[93 94] In this way, discourse analysis can expose and problematise dominant paradigms in global and domestic health policy-making, such as the ways that standard epidemiological risk factors obscure structural inequities,[95] the assumption that the private sector will act in the public interest[96] or that a primary function of government reproductive health programmes is to decrease the fertility rate, rather than enable reproductive autonomy.[97]

Ethnographers seek to understand how humans in groups interact, behave and perceive, and how meaning and value are established. Ethnography can build rich and holistic understanding of people's perspectives, practices and cultural context[98] and focuses on depth over breadth, immersive observation in natural settings (eg, non-experimental

conditions), exploratory (rather than hypothesis testing) research and describing the meaning and function of human action in context.[99 100] While ethnography has its origins in colonial conceptions of 'culture' and colonial motivations to study them and has thus been frequently used to 'study down',[101] ethnography has also been employed to research 'up, down and sideways'.[102] This includes work focusing on institutions and politics, political legitimacy, moral universes, tacit knowledge and discourses to provide insight into how power is constructed, solidified and wielded within and beyond health systems,[103 104] the development and normalisation of certain forms of knowledge[105] and the implicit or explicit privilege or denigration of individuals or marginalised groups accessing healthcare.[106]

Participatory action research (PAR) seeks to build new *understandings* of power while also *changing* power relations. PAR seeks to shift control over the construction of knowledge and truth from the historically privileged to the historically marginalised[107 108] and increase participant understandings of injustice (conscientisation)[109] in order to build solidarity[110] and transform systems and institutions. PAR explores and recognises different sources of power (eg, social position, nationality and cultural knowledge) and applications of power (eg, via citizen-led collective action[111]). This research methodology typically entails the use of tools, such as community meetings, resource mapping, problem identification, visioning and diaries that draw out the priorities and perspectives of the communities participating, rather than reflecting a priori theory. It is apt for exploratory questions, as well as for bringing stakeholders together to cocreate solutions to health systems challenges.[112]

Historical research aims to generate or regenerate explanatory narratives relating to past events, places or people. Historical evidence includes visual, audio and text-based materials (archival material, communications, policy documents and project reports) and first-person accounts (oral histories). The study of history can illuminate broad power-related themes that continue to be relevant, such as the interface between individual liberty and domestic governmental health objectives[113]; medical experimentation, social control and scientific racism[114 115]; corporate profit making, governmental interference and population health[116]; and global health as a vehicle for state-craft, diplomacy, population control and Western-centric conceptions of charity.[8 97 117–119] Historical studies also offer broader explanatory value as 'cases' for the development of theory related to power[27 28] and as case studies for contemporary policy debates. Insofar as traditional historical approaches can privilege written work, it may omit the perspectives of historically oppressed groups. To combat this tendency, alternative methods such as participatory oral historical or community-based sourcing of visual, audio and text-based records not located in 'official' repositories open up alternative analytical possibilities.

CONCLUSION

More research on power in health policy and systems is needed. Linking empirical inquiry with theory and methodologies, with attention to positionality strengthens the rigour of such research and can help improve the depth and breadth of knowledge regarding root causes of inequities in health. This paper guides readers through the multiple stages involved, and a range of theories and methodologies that may be used, in developing a study focused on power in health policy and systems. It also seeks to push the HPSR field to challenge the political economy of research and destabilise hierarchies of knowledge through greater honesty about how power dynamics influence the research endeavour itself. Through the analysis of power in health policies and systems, we encourage researchers to expand the boundaries of how we may address inequities of health, to surface new insights, theories and approaches pertaining to power and, ultimately, to contribute to a more just world.

Author affiliations
[1]College of Public Health Medical and Veterinary Sciences, James Cook University, Townsville, Queensland, Australia
[2]Nossal Institute for Global Health, University of Melbourne, Melbourne, Victoria, Australia
[3]Independent Consultant, Brooklyn, New York, USA
[4]School of Public Policy and Global Affairs and School of Population and Public Health, University of British Columbia, Vancouver, British Columbia, Canada
[5]Department of International Health, Johns Hopkins University Bloomberg School of Public Health, Baltimore, Maryland, USA
[6]Independent Consultant, Toronto, Ontario, Canada
[7]Institute for Global Health, University College London, London, UK
[8]Health and Nutrition Cluster, Institute of Development Studies, Brighton, UK
[9]Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, Tamil Nadu, India
[10]Azim Premji University, Bangalore, Karnataka, India
[11]Independent Consultant, New Delhi, India
[12]Oxford Policy Management, New Dehli, India
[13]Alliance for Health Policy and Systems Research, WHO, Geneva, Switzerland
[14]Independent Consultant, Geneva, Switzerland
[15]Society for Community Health Awareness Research and Action, Bangalore, Karnataka, India
[16]Alliance for Improving Health Outcomes Inc, Quezon City, Philippines
[17]Independent Consultant, Raipur, India

Twitter Stephanie M Topp @globalstopp, Marta Schaaf @martaschaaf, Veena Sriram @veena_sriram, Kerry Scott @kerfully, Sarah L Dalglish @Sarah_Dlish, Sumegha Asthana @sumeghaasthana, Rakesh Parashar @Ra_Parashar, Robert Marten @martenrobert, Emma Sacks @ersacks and Katherine Ann V Reyes @DrKathyReyes

Acknowledgements Walter Flores was part of discussions during which this paper was conceived. We would like to thank members of the Social Science Approaches for Research and Engagement in Health Policy and Systems (SHAPES) Thematic Working Group of Health Systems Global for their feedback on the initial concept note. We would like to thank Prachi Sanghavi (University of Chicago) and Michelle Friedner (University of Chicago) for their review of sections of the paper during development.

Contributors SMT, MS, VS and KS conceived of the paper. SMT, MS and VS led design of figures 1 and 2 and table 2 and coordinated drafting of different components of the paper. All authors contributed to methodological synthesis and drafting of text and all provided critical input to multiple drafts. SMT, MS and VS act as guarantor to this article.

Funding This collaborative project received no special funding. SMT holds a NHMRC Investigator Award (2020-24) GNT1173004.

Competing interests None declared.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

All data relevant to the study are included in the article or uploaded as supplementary information

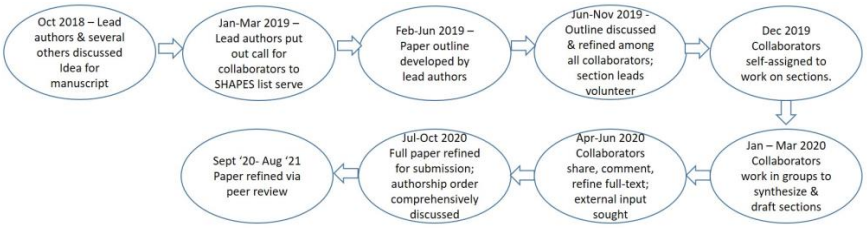
ORCID iDs
Stephanie M Topp http://orcid.org/0000-0002-3448-7983
Marta Schaaf http://orcid.org/0000-0002-7616-5966
Kerry Scott http://orcid.org/0000-0003-3597-9637
Sarah L Dalglish http://orcid.org/0000-0002-7218-5193
Erica Marie Nelson http://orcid.org/0000-0001-9161-4814
Rajasulochana SR http://orcid.org/0000-0003-3597-4991
Arima Mishra http://orcid.org/0000-0001-7218-932
Sumegha Asthana http://orcid.org/0000-0003-4186-2136
Robert Marten http://orcid.org/0000-0002-2416-2309
Emma Sacks http://orcid.org/0000-0003-0743-7208
Katherine Ann V Reyes http://orcid.org/0000-0002-2903-6571

REFERENCES

1 OED. OED, Power. In: *Oxford English dictionary*. UK: Oxford, 2021.
2 Shawar YR, Ruger JP. The politics of global health inequalities: approaches to studying the role of power. In: *The oxford handbook of global health politics*. Oxford, UK: Oxford University Press, 2020.
3 World Health Organization. *Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action*. Geneva, Switzerland: World Health Organization, 2007.
4 Gorsky M, Sirrs C. From «planning» to «systems analysis»: Health services strengthening at the World Health Organisation, 1952-1975. *Dynamis* 2019;39:205–33.
5 Manton J, Gorsky M. Health planning in 1960s Africa: international health organisations and the post-colonial state. *Med Hist* 2018;62:425–48.
6 Sheikh K, George A, Gilson L. People-centred science: strengthening the practice of health policy and systems research. *Health Res Policy Syst* 2014;12:19.
7 Gore R, Parker R. Analysing power and politics in health policies and systems. *Glob Public Health* 2019;14:481–8.
8 Packard R. *A history of global health: interventions into the lives of other peoples*. Baltimore, MD: Johns Hopkins University Press, 2016.
9 Harris P, Baum F, Friel S, *et al*. A glossary of theories for understanding power and policy for health equity. *J Epidemiol Community Health* 2020;74:jech-2019-213692–52.
10 Crane BB, Dusenberry J. Power and politics in international funding for reproductive health: the US global Gag rule. *Reprod Health Matters* 2004;12:128–37.
11 de Lacy-Vawdon C, Livingstone C. Defining the commercial determinants of health: a systematic review. *BMC Public Health* 2020;20:1022.
12 Pfeiffer J, Nichter M, Critical Anthropology of Global Health Special Interest Group. What can critical medical anthropology contribute to global health? A health systems perspective. *Med Anthropol Q* 2008;22:410–5.
13 Rizvi SS, Douglas R, Williams OD, *et al*. The political economy of universal health coverage: a systematic narrative review. *Health Policy Plan* 2020;35:364–72.
14 Sen G, Iyer A, Chattopadhyay S, *et al*. When accountability meets power: realizing sexual and reproductive health and rights. *Int J Equity Health* 2020;19:111.
15 Shiffman J. Knowledge, moral claims and the exercise of power in global health. *Int J Health Policy Manag* 2014;3:297–9.
16 Sriram V, Topp SM, Schaaf M, *et al*. 10 best resources on power in health policy and systems in low- and middle-income countries. *Health Policy Plan* 2018;33:611–21.
17 Inguane CA. Critical perspectives on global health partnerships in Africa. *Medicine Anthropology Theory* 2018;5:p. ii–vi.
18 Mumtaz Z, Ferguson A, Bhatti A, *et al*. Learning from failure? political expediency, evidence, and inaction in global maternal health. *Soc Sci Med* 2019;232:427–31.
19 Erasmus E, Gilson L. How to start thinking about investigating power in the organizational settings of policy implementation. *Health Policy Plan* 2008;23:361–8.
20 Gilson L, Orgill M, Shroff Z, eds. *A health policy analysis reader: the politics of policy change in low- and middle-income countries*. Geneva, Switzerland: Alliance for Health Policy and Systems Research and World Health Organization, 2018.
21 Loewenson R, Laurell A, Hogstedt C, eds. *Participatory action research in health systems: a methods reader*. Harare, Zimbabwe: TARSC, AHPSR, WHO, IDRC Canada, EQUINET, 2014.
22 Moon S. Power in global governance: an expanded typology from global health. *Global Health* 2019;15:74.
23 Dalglish SL, Khalid H, McMahon SA. Document analysis in health policy research: the read approach. *Health Policy Plan* 2021;35:1424–31.
24 Gilson L. *Health policy and systems research: a methodology reader*. Geneva, Switzerland: World Health Organization, 2012.
25 Walt G, Gilson L. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan* 1994;9:353–70.
26 Agyepong IA. Universal health coverage: breakthrough or great white elephant? *Lancet* 2018;392:2229–36.
27 Woolcock M, Szreter S, Rao V. How and why history matters for development policy. In: *History, historians and development policy*. Manchester University Press, 2020.
28 Szreter S. The Importance of Social Intervention in Britain's Mortality Decline *c* .1850–1914: a Re-interpretation of the Role of Public Health. *Social History of Medicine* 1988;1:1–38.
29 Anderson W. Making global health history: the postcolonial worldliness of biomedicine. *Social History of Medicine* 2014;27:372–84.
30 Sivaramakrishnan K. *Old Potions. New bottles: Recasting Indigenous medicine in colonial Punjab, 1945*. Orient Longman, 2006.
31 Cueto M, Palmer S. *Medicine and public health in Latin America: a history*. New York: Cambridge University Press, 2015.
32 Stepan N. *The hour of eugenics: race, gender, and nation in Latin America*. Ithaca, NY: Cornell University Press, 1991.
33 Adams V. Metrics of the global sovereign: numbers and stories in global health. In: *Metrics: what counts in global health*. Durham, NC: Duke University Press, 2016.
34 Parkhurst J. The politics of evidence: from evidence-based policy to the good governance of evidence. In: *Routledge studies in governance and public policy*. Abingdon, Oxon, UK.: Routledge, 2017.
35 Abimbola S. The uses of knowledge in global health. *BMJ Glob Health* 2021;6:e005802.
36 Storeng KT, Mishra A. Introduction. politics and practices of global health: critical ethnographies of health systems. *Glob Public Health* 2014;9:858–64.
37 Abimbola S. The foreign gaze: authorship in academic global health. *BMJ Glob Health* 2019;4:e002068.
38 Datta R. Decolonizing both researcher and research and its effectiveness in Indigenous research. *Res Ethics* 2018;14:1–24.
39 Sultana F. Reflexivity, positionality and participatory ethics: negotiating fieldwork dilemmas in international research. *ACME* 2007;6:374–85 https://www.researchgate.net/publication/228497658_Reflexivity_positionality_and_participatory_ethics_Negotiating_fieldwork_dilemmas_in_international_research
40 Citrin D, Mehanni S, Acharya B, *et al*. Power, potential, and pitfalls in global health academic partnerships: review and reflections on an approach in Nepal. *Glob Health Action* 2017;10:1367161.
41 Mafuta EM, Dieleman MA, Essink L, *et al*. Participatory approach to design social accountability interventions to improve maternal health services: a case study from the democratic republic of the Congo. *Glob Health Res Policy* 2017;2:p. 4.
42 Keikelame MJ, Swartz L. Decolonising research methodologies: lessons from a qualitative research project, Cape town, South Africa. *Glob Health Action* 2019;12:1561175.
43 Pratt B. Social justice and the ethical goals of community engagement in global health research. *J Bioeth Inq* 2019;16:571–86.

44 Jumbam DT. How *(not) to write about global health*. *BMJ Glob Health* 2020;5.
45 Crotty M. *Foundations of social research: meaning and perspective in the research process*. SAGE Publications, 1998.
46 Gaventa J, Pettit J, Cornish L. *Power pack, understanding power for social change*. Sussex, UK: Institute for Developmental Studies, 2011.
47 Weber M. The meaning of discipline. In: *Max weber: essays in sociology*. Imprint Routledge, 1948.
48 Ford CL, Airhihenbuwa CO. Commentary: just what is critical race theory and what's it doing in a progressive field like public health? *Ethn Dis* 2018;28:223–30.
49 Müller A. Beyond 'invisibility': queer intelligibility and symbolic annihilation in healthcare. *Cult Health Sex* 2018;20:14–27.
50 Sharma M. Applying feminist theory to medical education. *Lancet* 2019;393:570–8.
51 Crenshaw K. Mapping the margins: intersectionality, identity politics, and violence against women of color. *Stanford Law Rev* 1991;43:1241–99.
52 Larson E, George A, Morgan R, *et al*. 10 best resources on… intersectionality with an emphasis on low- and middle-income countries. *Health Policy Plan* 2016;31:964–9.
53 Mbembe A. *Necropolitics*. Durham, NC: Duke University Press, 2019.
54 Hankivsky O, Grace D, Hunting G, *et al*. An intersectionality-based policy analysis framework: critical reflections on a methodology for advancing equity. *Int J Equity Health* 2014;13:119.
55 Kapilashrami A, Hill S, Meer N. What can health inequalities researchers learn from an intersectionality perspective? understanding social dynamics with an inter-categorical approach? *Soc Theory Health* 2015;13:288–307.
56 Decolonising COVID-19. *Lancet Glob Health* 2020;8:e612.
57 Sandset T. The necropolitics of COVID-19: race, class and slow death in an ongoing pandemic. *Glob Public Health* 2021;16:1411–23.
58 Lipsky M. *Street-Level bureaucracy: dilemmas of the individual in public services*. New York: Russell Sage Foundation, 1980.
59 Bourdieu P. *The logic of practice*. Stanford University Press, 1990.
60 Barnett M, Duval R. *Power in global governance*. Cambridge: Cambridge University Press, 2004.
61 Gramsci A. *Selections from the prison notebooks*. London, UK.: The Electric Book Company, 1999.
62 Young S. *Changing the world: discourse, politics and the feminist movement*. Routledge, 2014.
63 Foucault M. The archaeology of knowledge and the discourse on language. In: *Pantheon books*, 1972.
64 Veneklasen L, Miller V. *A new weave of power, people & politics: the action guide for advocacy and citizen participation*. Oklahoma City, OK: World Neighbors, 2002.
65 Lukes S. *Power: a radical view*. Macmillan International Higher Education, 2004.
66 Abiiro GA, McIntyre D. Universal financial protection through national health insurance: a stakeholder analysis of the proposed one-time premium payment policy in Ghana. *Health Policy Plan* 2013;28:263–78.
67 Long N. *Development sociology: actor perspectives*. London, UK: Routledge, 2001.
68 Schutz A. *The problem of social reality*. The Hague: Mijhoff, 1962.
69 Lehmann U, Gilson L. Actor interfaces and practices of power in a community health worker programme: a South African study of unintended policy outcomes. *Health Policy Plan* 2013;28:358–66.
70 Parashar R, Gawde N, Gilson L. Application of "actor interface analysis" to examine practices of power in health policy implementation: an interpretive synthesis and guiding steps. *Int J Health Policy Manag* 2020. doi:10.34172/ijhpm.2020.191. [Epub ahead of print: 13 Oct 2020].
71 Blanchet K, James P. How to do (or not to do) a social network analysis in health systems research. *Health Policy Plan* 2012;27:438–46.
72 Hawe P, Webster C, Shiell A. A glossary of terms for navigating the field of social network analysis. *J Epidemiol Community Health* 2004;58:971–5.
73 Borgatti SP, Mehra A, Brass DJ, *et al*. Network analysis in the social sciences. *Science* 2009;323:892–5.
74 Oliver K. *Evaluating power, influence and evidence-use in public health policy-making: a social network analysis, in school of medicine*. University of Manchester, 2012.
75 Etemadi M, Gorji HA, Kangarani HM, *et al*. Power structure among the actors of financial support to the poor to access health services: social network analysis approach. *Soc Sci Med* 2017;195:1–11.
76 Wang G-X. Policy network mapping of the universal health care reform in Taiwan: an application of social network analysis. *J Asian Public Policy* 2013;6:313–34.
77 Yin R. *Case study research design and methods*. 5 edn. SAGE Publications, 2014.
78 Shiffman J, Smith S. Generation of political priority for global health initiatives: a framework and case study of maternal mortality. *Lancet* 2007;370:1370–9.
79 Doolin B. Power and resistance in the implementation of a medical management information system. *Information Systems Journal* 2004;14:343–62.
80 Rotarou ES, Sakellariou D. Neoliberal reforms in health systems and the construction of long-lasting inequalities in health care: a case study from Chile. *Health Policy* 2017;121:495–503.
81 Reich MR. Political economy analysis for health. *Bull World Health Organ* 2019;97:514.
82 Collinson S. *Power, livelihoods and conflict: case studies in political economy analysis for humanitarian action, overseas development Institute*. London, UK, 2003.
83 Auffray C, Balling R, Barroso I, *et al*. Making sense of big data in health research: towards an EU action plan. *Genome Med* 2016;8:71.
84 OECD. Unleashing the power of big data for alzheimer's disease and dementia research: main points of the OECD expert consultation on unlocking global collaboration to accelerate innovation for alzheimer's disease and dementia. *OECD Digital Economy Papers* 2014.
85 Schintler LA, Kulkarni R. Big data for policy analysis: the good, the bad, and the ugly. *Rev Policy Res* 2014;31:343–8.
86 Pastorino R, De Vito C, Migliara G, *et al*. Benefits and challenges of big data in healthcare: an overview of the European initiatives. *Eur J Public Health* 2019;29:23–7.
87 Shafqat S, Kishwer S, Rasool RU, *et al*. Big data analytics enhanced healthcare systems: a review. *J Supercomput* 2020;76:1754–99.
88 Kolkman D. The usefulness of algorithmic models in policy making. *Gov Inf Q* 2020;37:101488.
89 Yu N, Atteberry P, Bach P. Spending on prescription drugs in the US: where does all the money go? *Health Affairs Blog* 2018. URL.
90 Vayena E, Dzenowagis J, Brownstein JS, *et al*. Policy implications of big data in the health sector. *Bull World Health Organ* 2018;96:66–8.
91 Sacks HJefferson G, Schegloff E, eds. *Lectures on conversation*. vol 1 and 2. Cambridge: Blackwell's, 1995.
92 Steel EJ. The duplicity of choice and empowerment: disability rights diluted in australia's policies on assistive technology. *Societies* 2019;9:39.
93 Sieleunou I, Turcotte-Tremblay A-M, Fotso J-CT, *et al*. Setting performance-based financing in the health sector agenda: a case study in Cameroon. *Global Health* 2017;13:p. 52.
94 Yazdannik A, Yousefy A, Mohammadi S. Discourse analysis: a useful methodology for health-care system researches. *J Educ Health Promot* 2017;6:111.
95 Boyd R, Lindo E, Weeks L. *On racism: a new standard for publishing on racial health inequities*. Health Affairs Blog, 2020.
96 Gideon J, Unterhalter E. Exploring public private partnerships in health and education: a critique. *Journal of International and Comparative Social Policy* 2017;33:136–41.
97 Connelly M, Connelly MJ. *Fatal misconception: the struggle to control world population*. Cambridge, MA: Harvard University Press, 2009.
98 Hammersley M, Atkinson P. *Ethnography: principles in practice*. Psychology Press, 1995.
99 Agar MH. Ethnography: an overview. *Subst Use Misuse* 1997;32:1155–73.
100 Creswell J, Poth C. *Qualitative inquiry and research design: choosing among five approaches*. 4 edn. SAGE Publications, 2017.
101 Nyoka B. Bernard Magubane's critique of anthropology in southern Africa: an introductory essay. *Journal of Contemporary African Studies* 2019;37:169–90.
102 Stryker R, González R, eds. *Up, down, and sideways: anthropologists trace the pathways of power*. New York: Berghahn, 2014.
103 Hagene T. The power of ethnography: a useful approach to researching politics. *Forum Dev Stud* 2018;45:305–25.
104 Mishra A, Nambiar D. On the unraveling of 'revitalization of local health traditions' in India: an ethnographic inquiry. *Int J Equity Health* 2018;17:175.
105 Jain S, Jadhav S. Pills that swallow policy: *clinical ethnography of a community mental health program in northern India*. *Transcult Psychiatry* 2009;46:60–85.

106 Spangler SA. "To open oneself is a poor woman's trouble": embodied inequality and childbirth in South-Central Tanzania. *Med Anthropol Q* 2011;25:479–98.
107 Aryeetey GC, Jehu-Appiah C, Kotoh AM, *et al*. Community concepts of poverty: an application to premium exemptions in Ghana's National health insurance scheme. *Global Health* 2013;9:12.
108 Mathias K, Pillai P, Gaitonde R, *et al*. Co-production of a pictorial recovery tool for people with psycho-social disability informed by a participatory action research approach-a qualitative study set in India. *Health Promot Int* 2020;35:486–99.
109 Freire P. *Education for critical consciousness*. London, UK: Continuum, 1974.
110 Minkler M. Using participatory action research to build healthy communities. *Public Health Rep* 2000;115:191–7.
111 Hernández A, Hurtig A-K, Goicolea I, *et al*. Building collective power in citizen-led initiatives for health accountability in Guatemala: the role of networks. *BMC Health Serv Res* 2020;20:416.
112 Ozano K, Dean L, Adekeye O, *et al*. Guiding principles for quality, ethical standards and ongoing learning in implementation research: multicountry learnings from participatory action research to strengthen health systems. *Health Policy Plan* 2020;35:ii137–49.
113 Colgrove J. Public health Chronicles. *Public Health Rep* 2004;119:506–9.
114 Gutiérrez ER, Fuentes L. Population control by sterilization: the cases of Puerto Rican and Mexican-Origin women in the United States. *Latino(a) Research Review* 2009;7:85–100.
115 Reverby S. *Tuskegee's truths: rethinking the Tuskegee syphilis study*. UNC Press Books, 2012.
116 Reubi D, Berridge V. The Internationalisation of tobacco control, 1950-2010. *Med Hist* 2016;60:453–72.
117 Birn A-E. Backstage: the relationship between the rockefeller foundation and the world Health organization, part I: 1940s-1960s. *Public Health* 2014;128:129–40.
118 Chorev N. *The world Health organization between North and South*. Ithaca, NY: Cornell University Press, 2012.
119 Quevedo Velez E. La salud pública en Colombia: Seis siglos entre El interes Internacional Y El desinterés nacional. *Revista del Colegio Mayor de Nuestra Señora del Rosari* 2001;95:5–29.
120 Buse K, Hawkes S. Health post-2015: evidence and power. *Lancet* 2014;383:678–9.
121 Reynolds L. Not up for discussion: applying lukes' power model to the study of health system corruption comment on "we need to talk about corruption in health systems". *Int J Health Policy Manag* 2019;8:723–6.
122 Sriram V, Baru R, Hyder AA, *et al*. Bureaucracies and power: examining the medical Council of India and the development of emergency medicine in India. *Soc Sci Med* 2020;256:113038.
123 Shiffman J. Global health as a field of power relations: a response to recent commentaries. *Int J Health Policy Manag* 2015;4:497–9.
124 Béhague DP, Kanhonou LG, Filippi V, *et al*. Pierre Bourdieu and transformative agency: a study of how patients in Benin negotiate blame and accountability in the context of severe obstetric events. *Sociol Health Illn* 2008;30:489–510.
125 Hanefeld J, Walt G. Knowledge and networks - key sources of power in global health: Comment on "Knowledge, moral claims and the exercise of power in global health". *Int J Health Policy Manag* 2015;4:119–21.
126 Foucault M. An Introdcution. In: *History of sexuality*. New York: Random House, 1978.
127 Dalglish SL, Rodríguez DC, Harouna A, *et al*. Knowledge and power in policy-making for child survival in niger. *Soc Sci Med* 2017;177:150–7.
128 Scott K, George AS, Harvey SA, *et al*. Negotiating power relations, gender equality, and collective agency: are village health committees transformative social spaces in northern India? *Int J Equity Health* 2017;16:84.
129 Marten R. How states exerted power to create the millennium development goals and how this shaped the global health agenda: lessons for the sustainable development goals and the future of global health. *Glob Public Health* 2019;14:584–99.
130 Nisbett N, Gillespie S, Haddad L, *et al*. Why worry about the politics of childhood undernutrition? *World Dev* 2014;64:420–33.
131 McCollum R, Taegtmeyer M, Otiso L, *et al*. "Sometimes it is difficult for us to stand up and change this": an analysis of power within priority-setting for health following devolution in Kenya. *BMC Health Serv Res* 2018;18:906.
132 Worth O. Health for all? towards a neo-gramscian critique of the WHO. In: *Critical perspectives on international political economy*. London: Palgrave Macmillan, 2002: 139–58.
133 Morgan R, George A, Ssali S, *et al*. How to do (or not to do)… gender analysis in health systems research. *Health Policy Plan* 2016;31:1069–78.
134 Theobald S, Morgan R, Hawkins K, *et al*. The importance of gender analysis in research for health systems strengthening. *Health Policy Plan* 2017;32:v1–3.
135 Parikh SA. "They arrested me for loving a schoolgirl": ethnography, HIV, and a feminist assessment of the age of consent law as a gender-based structural intervention in Uganda. *Soc Sci Med* 2012;74:1774–82.
136 Borrell LN. Editorial: critical race theory: why should we care about applying it in our research? *Ethn Dis* 2018;28:215–8.
137 Hardeman RR, Karbeah J'Mag, Kozhimannil KB. Applying a critical race lens to relationship-centered care in pregnancy and childbirth: an antidote to structural racism. *Birth* 2020;47:3–7.
138 Lee CJ. The necropolitics of COVID-19 in Africa is a country, 2020. Available: https://africasacountry.com/2020/04/the-necropolitics-of-covid-19
139 Spivak RGGC, Said E. *Selected subaltern studies*. Oxford University Press, 1988.
140 Guha R. *A subaltern studies reader, 1986-1995*. University of Minnesota Press, 1997.
141 Caxaj CS. Indigenous Storytelling and participatory action research: allies toward decolonization? reflections from the peoples' international health tribunal. *Glob Qual Nurs Res* 2015;2:2333393615580764.
142 Kingori P, Gerrets R. The masking and making of fieldworkers and data in postcolonial global health research contexts. *Crit Public Health* 2019;29:494–507.
143 McPhail-Bell K, Fredericks B, Brough M. Beyond the accolades: a postcolonial critique of the foundations of the Ottawa charter. *Glob Health Promot* 2013;20:22–9.
144 Mignolo WD, Walsh CE. *Concepts On decoloniality:analytics, praxis*. Durham, NC: Duke University Press, 2018.
145 Etzioni A. *Mixed-scanning: a" third" approach to decision-making*, 1967: 385–92.
146 Buse K, Mays NB, Walt G. *Making Health Policy*. Open University Press, 2012.
147 Dalglish SL, Sriram V, Scott K, *et al*. A framework for medical power in two case studies of health policymaking in India and niger. *Glob Public Health* 2019;14:542–54.
148 Cairney P, Studlar D, Mamudu H. *Global tobacco control: power, policy, governance and transfer*. Springer, 2011.
149 Rushton S, Williams OD. Frames, paradigms and power: global health policy-making under neoliberalism. *Global Society* 2012;26:147–67.
150 Battams S, Townsend B. Power asymmetries, policy incoherence and noncommunicable disease control - a qualitative study of policy actor views. *Crit Public Health* 2019;29:596–609.
151 Kentikelenis A, Rochford C. Power asymmetries in global governance for health: a conceptual framework for analyzing the political-economic determinants of health inequities. *Global Health* 2019;15:70.
152 Bump JB, Reich MR. Political economy analysis for tobacco control in low- and middle-income countries. *Health Policy Plan* 2013;28:123–33.
153 Mann J. Health and human rights: broadening the agenda for health professionals. *Health Hum Rights* 1996;2:1–5.
154 Gruskin S. What are health and human rights? *Lancet* 2004;363:329.
155 Freedman LP. Health system strengthening: new potential for public health and human rights collaboration. *Reprod Health Matters* 2007;15:219–20.
156 Yamin AE, Norheim OF. Taking equality seriously: applying human rights frameworks to priority setting in health. *Hum Rights Q* 2014;36:296–324.
157 Forman L. What future for the minimum core? Contextualizing the implications of SouthAfrican socioeconomic rights jurisprudence for the international human right to health. In: *Global health and human rights: legal and philosophical perspectives*. Routledge, 2009.
158 Erasmus E. The use of street-level bureaucracy theory in health policy analysis in low- and middle-income countries: a meta-ethnographic synthesis. *Health Policy Plan* 2014;29 Suppl 3:iii70–8.
159 Walker L, Gilson L. 'We are bitter but we are satisfied': nurses as street-level bureaucrats in South Africa. *Soc Sci Med* 2004;59:1251–61.



Supplementary File 1: Iterative process of paper development over several years.

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

SUPPLEMENTARY FILE 2: Extended Summary of Theories Useful for Power Analysis in Health Policy and Systems Research

Theories useful for power analysis	Key constructs/brief description	Commonly used to study power in HPSR/HPA? - / + / ++	Examples of application
1. Theories on power from the social sciences			
Steven Lukes' three faces or dimensions of power	Influenced by Marx and Durkheim, the social theorist Steven Lukes, in his book *Power: A Radical View*, claims power is exercised in three ways: 1) the power to decide, 2) the power not to decide (i.e. to set the agenda, circumscribe the limits of debate), 3) the power to influence people's wishes and thoughts, even against their self-interest. The third face of power was partly inspired by Gramsci's notion of cultural hegemony (see below).	++	(Lukes, 2004); (Buse and Hawkes, 2014); (Reynolds, 2019)
Max Weber's three sources of authority and description of bureaucracy	The German sociologist Max Weber described political authority as legitimate domination, distinct from concepts of coercion, force, and power. He defined three sources of political authority: traditional (derived from established customs and social structures), charismatic (derived from the individual leader's characteristics), and rational-legal authority (derived from the formal rules and laws of the state). Weber's conceptualization of bureaucracy is also applied to the study of bureaucratic power.	-	(Weber, 1948); (Sriram et al., 2020)
Pierre Bourdieu's fields	The French sociologist Pierre Bourdieu proposed the concepts of fields. Fields are social domains characterized by specific logics and norms, and they are peopled by actors with varying levels of power. Global health might be considered a field. Actors in fields use forms of capital (economic, cultural, social, or symbolic) to advance their self-interest and preferences, such as professional prestige, saving lives, and funding successful programs.	+	(Bourdieu, 1990); (Shiffman, 2015); (Behague et al., 2008); (Hanefeld and Walt, 2015)
Foucault	Foucault's work on power evolved over his lifetime. His influential concept of "power/knowledge" holds that rather than being an instrument of power, knowledge is constitutive and inseparable from it. In "Discipline and Punish," Foucault discusses how modern institutions and techniques of control created systems of disciplinary power. In his work on external and internal controls on sexuality, Foucault claims that power is productive and built from the ground up (the 'microphysics' of power in a society), via a network of practices. He also contrasted older forms of "sovereign" power, founded on violence, with modern "biopower," which influences life by administration, optimization, and regulation, etc.	+	(Foucault, 1978); (Dalglish et al., 2017), (Sen et al., 2020); (Scott et al., 2017)
Haugaard	Haugaard's framework of seven ways of creating power and exercise of power in the policy systems is founded on the question of – 'what creates power in the society' and draws from multiple power theories. The first among	-	(Haugaard, 2012)

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

	the seven interrelated categories is the establishment of societal rule (power created by social order). These rules create legitimacies in the system (power created by system biases). Compatibility or conflict with these system biases then creates power differences (power created by systems of thought). Knowledge of actors about social orders, rules and thoughts makes them empowered or powerless (power created by tacit knowledge). A reification of some knowledge and creation of arbitrary social constructs can lead to new power dynamics in the society (power created by reification). Many routines in the systems prevent knowledge from becoming discursive, and these reinforce the existing order (power created by discipline). To maintain or change the exercise of power there could be incidences of violence, threats and coercion (power created by coercion).		
Taxonomy of power (Barnett and Duvall)	Barnett and Duvall, scholars of global governance, propose a framework to understand how states negotiate policy processes in the international sphere. They differentiate between direct forms of power (*compulsory* power between actors, and *structural* relationships) and more diffuse forms (*institutional* power that favors some actors, and *productive* power over possession and distribution of resources).	+	(Barnett and Duval, 2004); (Marten, 2019); (Moon, 2019)
PowerCube	John Gaventa's PowerCube framework, drawing from multiple theories, brings together an operational model for the analysis of power. It depicts an intersectional and dynamic relationship of three aspects of power. Three dimensions of the cube represent – 1. Forms of power (based on Luke's three faces of power) – visible, invisible and hidden power; 2. Spaces of power based on the participation of various actors, operationalized at open, closed and claimed spaces; and 3. Levels of power – global, national or local, based on where power is emanating from and where it is being exercised. The dimensions and elements of the PowerCube interact with each other (like the Rubik's cube) and analysts can approach the problem starting from any plane/dimension.	±	(Gaventa et al., 2011); (Nisbett et al., 2014); (McCollum et al., 2018).
Expressions of power	VeneKlasen et al's 'expressions of power' concept furthered the discourse of understanding power by departing from seeing power as an ability to influence others by domination or coercion or 'power over'. This categorization suggests that power could have positive meanings, and power could be exercised in more collaborative and constructive ways. The four categories of power in this framework include power over (authority over others), power to (individual powers to act upon something), power with (to act with others or collaborations) and power within (the ability of a person to recognize their self-knowledge, abilities or a sense of self-worth).	±	(Veneklasen and Miller, 2002); (McCollum et al., 2018).
2. General social science theories			
Gramsci	A Marxist political theorist, Gramsci's work on power centres on the concept of cultural hegemony, by which the state and the ruling classes use ideology, rather than violence, force, or economic modalities, to control and maintain capitalist power. Under this framework, the norms and ideas of the bourgeoisie become 'common sense,' and the working class identifies as good that which in fact benefits the state and the ruling class. Gramsci's work partly inspired Lukes' "third face" of power (see above).	-	(Gramsci, 1999); (Worth, 2002).

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Feminist theories / domination	There are many tensions and debates among feminist theories. Nonetheless, broadly, feminist-informed theories, including phenomenological feminist, radical feminist, socialist feminism, intersectional feminism, post-structuralism, and analytic feminist approaches raise important issues that theorists believe were previously under-addressed, most notably including the ways that gender hierarchies shape health status, health policies, the care available, the care received, and, relationships among and between health sector employees and patients. In addition to exposing structures and manifestations of domination, feminist approaches may endeavour to identify and foster empowerment and solidarity, both through research processes and results.	++	(Young, 2014); (Morgan et al., 2016); (Theobald et al., 2017); (Parikh, 2012)
Gender transformative/ socialist feminist evaluations	Gender-transformative/socialist feminist evaluations are based on an understanding of how gender and social relations of class, sexuality, caste, abilities, religion, etc., define the exercise of power in different institutional contexts. These evaluation frameworks help to study the contribution of a policy (or interventions), for changing such power relations in favor of the marginalized groups, in the context of the larger neoliberal paradigms. Such evaluations also explore changes, if any, in gendered and social norms of implementing organizations. The evaluation process ideally reflects a gender, rights and equity lens. These frameworks can be used to examine the political nature of evaluations, by breaking down the hierarchy and power relations between- who is evaluating, who is being evaluated and how are the results communicated (whose language and for whom).	+	(Chigateri and Saha, 2016)
Intersectionality	Initially a critique of hegemonic (white) feminism in the United States, intersectionality assesses the ways that gender hierarchies interact with other hierarchies, such as those related to race, caste, and ability. Both quantitative and qualitative approaches to exposing intersectionality surface the ways in which different hierarchies interact in different contexts.	+	(Crenshaw, 1991); (Cho et al., 2013); (Larson et al., 2016)
Critical race theory	Critical race theory originated in U.S. law schools in the 1980s and as a way to understand how the law has been used to maintain racial power (white supremacy), and the possibility of using the law to work towards racial emancipation. It has since been expanded for use in many other social science fields, and has been used particularly in the US-American public health literature to describe and understand racial disparities in health determinants, outcomes, and access to care.	+	(Borrell, 2018); (Hardeman et al., 2020).
Necropolitics	'Necropolitics' builds on Foucault's idea of 'biopower' or 'biopolitics' as the state's ability to control and shape life, in contrast to the more traditional power of life and death over citizens. Necropolitics is the use of social and political power to control (differentially) how citizens live and die, with some (subjugated) bodies suspended between life and death, and has been used to understand inequities in health and the shortcomings of current global health governance and the pluralistic (i.e. market-infused or market-dominated) sphere of 'public' health.	+	(Mbembe, 2019); (Lee, 2020).

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Subaltern studies / postcolonialism / decolonization	Building in part on Gramscian theory and growing attention to social history (as opposed to state centered history) subaltern studies developed as a field in the 1980s; many of the initial key thinkers wrote about India. Subaltern people are those who are subordinated for reasons of class, caste, gender, race, language and culture; subaltern studies centers these people and the structures of subordination. Postcolonialism was initially developed in literary theory; it is concerned with narrative and representation and how this perpetuates hegemonic forms of knowledge and power. Decolonization refers to the social science study of the process of decolonization, as well as to a newer movement to "decolonize global health" by questioning dominant paradigms and institutions from the Global North and, proposing an equitable, if not Southern based framework that engenders local innovation and diffusion, values and elevates theories stemming from the Global South, and ensures proportionate representation from people from the Global South.	+	(Spivak and Said, 1988); (Guha, 1997); (Caxaj, 2015); (Kingori and Gerrets, 2019); (McPhail-Bell et al., 2013); (Mignolo and Walsh, 2018).
3. Operational public policy theories with potential for power analysis			
Political systems	Political systems can be interrogated for how they distribute power among certain actors / groups both in terms of policy-making processes and in terms of the likely beneficiaries of valued goods. Buse et al (2012) list 5 political systems: 1) liberal-democratic, 2) egalitarian-authoritarian, 3) traditional-inegalitarian, 4) populist, 5) authoritarian-inegalitarian. Dahl (1957), in describing pluralistic systems, holds the state as a neutral referee adjudicating between competing demands. Analyses can focus on how health policy issues are shaped or determined given the specific characteristics of the political system in question.	+	(Dahl, 1957); (Buse et al., 2012); (Dalglish et al., 2015)
Models of decision making in public policy	A number of models of public policy decision-making are available, in which analyses of power can be incorporated in various ways. Buse et al list rational and incremental models of decision-making, a mixed-scanning approach to decision-making, and the punctuated equilibrium model. Some of these are more or less ripe for power analysis (e.g. the rational model considers that decisions are made primarily on evidence), though they can also be combined with other frameworks that interrogate power more specifically.	++	(Etzioni, 1967); (Cairney et al., 2011, Buse et al., 2012); (Dalglish et al., 2019)
Political-economic determinants	Two frameworks address the political-economic determinants of health, highlighting the power imbalances that emerge from the interplay between macroeconomic structures, ideas and policy. • Kentikelenis & Rochford – Power asymmetries in global governance for health: a conceptual framework for analyzing the political-economic determinants of health inequities • Rushton and Williams – Frames, paradigms and power: global health policy-making under neoliberalism.		(Rushton and Williams, 2012), (Kentikelenis and Rochford, 2019), (Battams and Townsend, 2019).
Health and Human Rights	The right to adequate standard of living and to medical services were included in the 1948 Universal Declaration of Human Rights; the right to health was included in the 1966 International Covenant on Economic Social and Cultural Rights. In the late 1980s and early 1990s lawyers, physicians, and activists coalesced the field of "health	++	(Mann, 1996); (Gruskin, 2004); (Freedman, 2007);

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

	and human rights," as they sought to address the human rights drivers and impacts of the HIV pandemic. While the law has been criticized as a manifestation and tool of those in power, health and human rights researchers argue that human rights law outlines obligations and points to steps governments could take to realize those obligations. In this way, human rights provides a diagnostic or descriptive framework for research, as well as solutions for how the health sector and governments more broadly should react to that research.		(Yamin and Norheim, 2014); (Forman, 2009).
Policy transfer and other international relations theories of policy diffusion	There are several strands in the policy diffusion literature. Policy transfer refers to the transfer of policies from what setting to another; this field of research focuses on the decision-making, motivation, and other mechanisms of transfer. Policy convergence is concerned with the role of structures – such as institutions and globalization processes – in the spread of policies. Policy translation looks at the ways that policies are modified or subverted when they are adopted. Power is integrated insofar as the actors in each of these paradigms have different degrees of power, potentially including donors, normative agencies (e.g. WHO), private sector actors, Ministries of Health, Ministries of Finance, and actors tasked with implementation.		(Brown et al., 2014); (Shiffman and Smith, 2007); (Parston et al., 2015); (Omachonu and Einspruch, 2010); (Moon, 2019).
Institutional processes and health policy agenda setting	Understanding how an issue ends up on the policy agenda is also explored through the lens of power. Walt (1994) described health policy as being about process and power, the process being driven by who are regarded as influencers and how these actors make the process happen. The role of policy actors was discussed by Walt and Gilson (1994) particularly how they influence the process from agenda setting to evaluation, and how they react to policies. The work of Shiffman and Smith (2007) articulated the role of actor power, ideas, political contexts, and issue characteristics in setting policy agenda as well as priority setting activities. This proposes the use of institutional framework to understand how an agenda is set according to institutional rules, norms, and behaviours about ideas that are regarded as important (i.e. policy agenda). This social constructivism (Shiffman 2009) can be considered when studying health policy agenda setting. Later on, the work by Walt and Gilson (2014) added that the role of the media should be emphasized due to their power in framing issues. The work by Grindle and Thomas (1989) on the role of policy elites in agenda setting is also be informative.	+	(Walt and Gilson, 1994); (Shiffman and Smith, 2007); (Shiffman, 2009); (Grindle and Thomas, 1989).
Street Level Bureaucracy	Initially developed by American political scientist Michael Lipsky, the theory of street level bureaucracy is concerned with the government employees who interact with citizens in the everyday conduct of their tasks, such as police officers, local government officials, and health providers. These bureaucrats have some degree of discretion. From the perspective of community members, the cumulation of decisions and actions taken by street level bureaucrats constitute governmental policy. Research using this theory can draw out the realities of everyday practice, including the ways in which frontline providers and officials implement or subvert policy and reinforce (or not) social and professional hierarchies.	+	(Lipsky, 1980); (Erasmus, 2014); (Walker and Gilson, 2004)

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

REFERENCES

BARNETT, M. & DUVAL, R. 2004. *Power in global governance,* Cambridge, Cambridge University Press.

BATTAMS, S. & TOWNSEND, B. 2019. Power asymmetries, policy incoherence and noncommunicable disease control-a qualitative study of policy actor views. *Critical Public Health,* 29**,** 596-609.

BEHAGUE, D. P., KANHONOU, L. G., FILIPPI, V., LEGONOU, S. & RONSMANS, C. 2008. Pierre Bourdieu and transformative agency: a study of how patients in Benin negotiate blame and accountability in the context of severe obstetric events. *Sociol Health Illn,* 30**,** 489-510.

BORRELL, L. N. 2018. Editorial: Critical Race Theory: Why Should We Care about Applying It in our Research? *Ethn Dis,* 28**,** 215-218.

BOURDIEU, P. 1990. *The logic of practice*, Stanford University Press.

BROWN, G. W., YAMEY, G. & WAMALA, S. (eds.) 2014. *The handbook of global health policy*: John Wiley & Sons.

BUSE, K. & HAWKES, S. 2014. Health post-2015: evidence and power. *Lancet,* 383**,** 678-9.

BUSE, K., MAYS, N. B. & WALT, G. (eds.) 2012. *Making Health Policy*: Open University Press.

CAIRNEY, P., STUDLAR, D. & MAMUDU, H. 2011. *Global tobacco control: power, policy, governance and transfer*, Springer.

CAXAJ, C. S. 2015. Indigenous Storytelling and Participatory Action Research: Allies Toward Decolonization? Reflections From the Peoples' International Health Tribunal. *Glob Qual Nurs Res,* 2**,** 2333393615580764.

CHIGATERI, S. & SAHA, S. 2016. A Resource Pack on Gender Transformative Evaluations. India.

CHO, S., CRENSHAW, K., XE, WILLIAMS & MCCALL, L. 2013. Toward a Field of Intersectionality Studies: Theory, Applications, and Praxis. *Signs,* 38**,** 785-810.

CRENSHAW, K. 1991. Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review,* 43**,** 1241-1299.

DAHL, R. A. 1957. The concept of power. *Behavioral Science,* 2**,** 201-215.

DALGLISH, S. L., RODRIGUEZ, D. C., HAROUNA, A. & SURKAN, P. J. 2017. Knowledge and power in policy-making for child survival in Niger. *Soc Sci Med,* 177**,** 150-157.

DALGLISH, S. L., SRIRAM, V., SCOTT, K. & RODRIGUEZ, D. C. 2019. A framework for medical power in two case studies of health policymaking in India and Niger. *Glob Public Health,* 14**,** 542-554.

DALGLISH, S. L., SURKAN, P. J., DIARRA, A., HAROUNA, A. & BENNETT, S. 2015. Power and pro-poor policies: the case of iCCM in Niger. *Health Policy and Planning,* 30**,** ii84-ii94.

ERASMUS, E. 2014. The use of street-level bureaucracy theory in health policy analysis in low- and middle-income countries: a meta-ethnographic synthesis. *Health Policy Plan,* 29 Suppl 3**,** iii70-8.

ETZIONI, A. 1967. Mixed-scanning: A" third" approach to decision-making. *Public administration review***,** 385-392.

FORMAN, L. 2009. What future for the minimum core? Contextualizing the implications of South African socioeconomic rights jurisprudence for the international human right to health. *In:* HARRINGTON, J. & STUTTAFORD, M. (eds.) *Global Health and Human Rights: Legal and Philosophical Perspectives.* Routledge.

FOUCAULT, M. 1978. *History of Sexuality, Volume 1: An Introdcution,* New York, Random House.

FREEDMAN, L. P. 2007. Health system strengthening: new potential for public health and human rights collaboration. *Reprod Health Matters,* 15**,** 219-20.

GAVENTA, J., PETTIT, J. & CORNISH, L. 2011. *Power pack, understanding power for social change,* Sussex, UK, Institute for Developmental Studies.

GRAMSCI, A. 1999. *Selections from the Prison Notebooks,* London, UK., The Electric Book Company.

GRINDLE, M. S. & THOMAS, J. W. 1989. Policy makers, policy choices, and policy outcomes: The political economy of reform in developing countries. *Policy Sciences,* 22**,** 213-248.

GRUSKIN, S. 2004. What are health and human rights? *Lancet,* 363**,** 329.

GUHA, R. (ed.) 1997. *A subaltern studies reader, 1986-1995*: University of Minnesota Press.

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

HANEFELD, J. & WALT, G. 2015. Knowledge and networks - key sources of power in global health: Comment on "Knowledge, moral claims and the exercise of power in global health". *Int J Health Policy Manag,* 4**,** 119-21.

HARDEMAN, R. R., KARBEAH, J. & KOZHIMANNIL, K. B. 2020. Applying a critical race lens to relationship-centered care in pregnancy and childbirth: An antidote to structural racism. *Birth,* 47**,** 3-7.

HAUGAARD, M. 2012. Power and truth. *European Journal of Social Theory,* 15**,** 73-92.

KENTIKELENIS, A. & ROCHFORD, C. 2019. Power asymmetries in global governance for health: a conceptual framework for analyzing the political-economic determinants of health inequities. *Global Health,* 15**,** 70.

KINGORI, P. & GERRETS, R. 2019. The masking and making of fieldworkers and data in postcolonial Global Health research contexts. *Crit Public Health,* 29**,** 494-507.

LARSON, E., GEORGE, A., MORGAN, R. & POTEAT, T. 2016. 10 Best resources on… intersectionality with an emphasis on low- and middle-income countries. *Health Policy Plan,* 31**,** 964-9.

LEE, C. J. 2020. The necropolitics of COVID-19. *Africa is a Country* [Online]. [Accessed 4 June 2021].

LIPSKY, M. 1980. *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services,* New York, Russell Sage Foundation.

LUKES, S. 2004. *Power: A radical view*, Macmillan International Higher Education.

MANN, J. 1996. Health and human rights: broadening the agenda for health professionals. *Health Hum Rights,* 2**,** 1-5.

MARTEN, R. 2019. How states exerted power to create the Millennium Development Goals and how this shaped the global health agenda: Lessons for the sustainable development goals and the future of global health. *Glob Public Health,* 14**,** 584-599.

MBEMBE, A. 2019. *Necropolitics,* Durham, NC., Duke University Press.

MCCOLLUM, R., TAEGTMEYER, M., OTISO, L., MUTURI, N., BARASA, E., MOLYNEUX, S., MARTINEAU, T. & THEOBALD, S. 2018. "Sometimes it is difficult for us to stand up and change this": an analysis of power within priority-setting for health following devolution in Kenya. *BMC Health Serv Res,* 18**,** 906.

MCPHAIL-BELL, K., FREDERICKS, B. & BROUGH, M. 2013. Beyond the accolades: a postcolonial critique of the foundations of the Ottawa Charter. *Glob Health Promot,* 20**,** 22-9.

MIGNOLO, W. D. & WALSH, C. E. 2018. *On decoloniality: Concepts, analytics, praxis,* Durham, NC., Duke University Press.

MOON, S. 2019. Power in global governance: an expanded typology from global health. *Global Health,* 15**,** 74.

MORGAN, R., GEORGE, A., SSALI, S., HAWKINS, K., MOLYNEUX, S. & THEOBALD, S. 2016. How to do (or not to do)... gender analysis in health systems research. *Health Policy Plan,* 31**,** 1069-78.

NISBETT, N., GILLESPIE, S., HADDAD, L. & HARRIS, J. 2014. Why worry about the politics of childhood undernutrition? *World Development,* 64**,** 420-433.

OMACHONU, V. K. & EINSPRUCH, N. G. 2010. Innovation in Healthcare Delivery Systems: A Conceptual Framework. *The Public Sector Innovation Journal*.

PARIKH, S. A. 2012. "They arrested me for loving a schoolgirl": ethnography, HIV, and a feminist assessment of the age of consent law as a gender-based structural intervention in Uganda. *Soc Sci Med,* 74**,** 1774-82.

PARSTON, G., MCQUEEN, J., PATEL, H., KEOWN, O. P., FONTANA, G., AL KUWARI, H. & DARZI, A. 2015. The Science And Art Of Delivery: Accelerating The Diffusion Of Health Care Innovation. *Health Aff (Millwood),* 34**,** 2160-6.

REYNOLDS, L. 2019. Not Up for Discussion: Applying Lukes' Power Model to the Study of Health System Corruption Comment on "We Need to Talk About Corruption in Health Systems". *Int J Health Policy Manag,* 8**,** 723-726.

RUSHTON, S. & WILLIAMS, O. D. 2012. Frames, paradigms and power: global health policy-making under neoliberalism. *Global Society,* 26**,** 147-167.

SCOTT, K., GEORGE, A. S., HARVEY, S. A., MONDAL, S., PATEL, G. & SHEIKH, K. 2017. Negotiating power relations, gender equality, and collective agency: are village health committees transformative social spaces in northern India? *Int J Equity Health,* 16**,** 84.

Topp SM, Schaaf M, Sriram V. *et al* Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

SEN, G., IYER, A., CHATTOPADHYAY, S. & KHOSLA, R. 2020. When accountability meets power: realizing sexual and reproductive health and rights. *Int J Equity Health,* 19**,** 111.

SHIFFMAN, J. 2009. A social explanation for the rise and fall of global health issues. *Bull World Health Organ,* 87**,** 608-13.

SHIFFMAN, J. 2015. Global Health as a Field of Power Relations: A Response to Recent Commentaries. *Int J Health Policy Manag,* 4**,** 497-9.

SHIFFMAN, J. & SMITH, S. 2007. Generation of political priority for global health initiatives: a framework and case study of maternal mortality. *Lancet,* 370**,** 1370-9.

SPIVAK, R. G. G. C. & SAID, E. 1988. *Selected subaltern studies*, Oxford University Press.

SRIRAM, V., BARU, R., HYDER, A. A. & BENNETT, S. 2020. Bureaucracies and power: Examining the Medical Council of India and the development of emergency medicine in India. *Soc Sci Med,* 256**,** 113038.

THEOBALD, S., MORGAN, R., HAWKINS, K., SSALI, S., GEORGE, A. & MOLYNEUX, S. 2017. The importance of gender analysis in research for health systems strengthening. *Health Policy Plan,* 32**,** v1-v3.

VENEKLASEN, L. & MILLER, V. 2002. *A New Weave of Power, People & Politics: The Action Guide for Advocacy and Citizen Participation,* Oklahoma City, OK, World Neighbors.

WALKER, L. & GILSON, L. 2004. 'We are bitter but we are satisfied': nurses as street-level bureaucrats in South Africa. *Soc Sci Med,* 59**,** 1251-61.

WALT, G. & GILSON, L. 1994. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan,* 9**,** 353-70.

WEBER, M. 1948. The meaning of discipline. *Max Weber: Essays in Sociology.* Imprint Routledge.

WORTH, O. 2002. Health for All? Towards a neo-Gramscian Critique of the WHO. *In: Critical Perspectives on International Political Economy* London: Palgrave Macmillan.

YAMIN, A. E. & NORHEIM, O. F. 2014. Taking equality seriously: applying human rights frameworks to priority setting in health *Human Rights Quarterly* 36**,** 296.

YOUNG, S. 2014. *Changing the wor(l)d: Discourse, politics and the feminist movement*, Routledge.

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

SUPPLEMENTARY FILE 3: Extended Summary of Methodologies for Studying Power in Health Policy and Systems Research

Methodology and methods	*Applicability to studying power in HPSR*	*Strengths*	*Methodological Considerations*
Ethnography The study of how humans in groups interact, behave, experience and perceive; and how meaning and value are established.	Ethnography seeks to build rich and holistic understanding of people's perspectives, practices, and cultural context (Hammersley and Atkinson 1995) and focuses on depth over breadth, immersive observation in natural settings (e.g., non-experimental conditions), exploratory (rather than hypothesis testing) research, and efforts to identify and analyse the meaning and function of human action in context (Creswell and Poth, 2017, Agar 1997). Ethnography can thus examine how power is manifested through, for example, the unequal distribution of resources, the privilege or denigration of individuals or sub-groups, and the development and normalization of forms of knowledge (Jain and Jadhav 2009).	Ethnography can expose power's function in key HPSR spheres, such as policymaking processes (Irwin and Smith 2019; Nambiar 2013), healthcare decision-making in the home (Nyamongo 2002), relationships among actors in healthcare settings (Kapilashrami and McPake 2013), and informal practices that shape the delivery and receipt of health care and other social services (Pigg 2013). Ethnography has been shown to enable research on political issues of legitimacy, moral universes, tacit knowledge, and local discourses (Hagene 2018). While ethnography has its origins in the colonial project and has been frequently used to "study down" (Nyoka 2019), more recently, ethnography has been employed to "up, down and sideways" (González and Stryker, 2014), wherein researchers focus on the practices and moral worlds of the powerful, providing insight into how power is constructed, solidified, and wielded (Mishra and Nambiar 2018).	Who gets 'to do' ethnographic research should also be recognised as a matter of power and position. In their analysis, researchers must also be attentive to whether people can choose to participate in ethnographic research, dispute the conclusions made, or influence how ethnographic research findings are shared and used.
Case study A form of empirical inquiry characterised by an "*intense focus on a single phenomenon*	Case studies are particularly useful in situations where boundaries between the phenomenon of interest and the context are blurred. In relation to power in	By combining an interpretivist (seeking to understand individual and shared social meanings) and critical (questioning one's own and others' assumptions) analytical approach researchers may use this methodology to consciously account for	Case studies are ubiquitous in public health, but are often a summary of a program, rather than the intended in-depth exploration of social

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

within its real life context" (Yin 2014)	HPSR, case study research has most commonly been used to produce explanatory accounts focussing on different actors' expressions of power (both formal and informal, overt and covert) to answer 'how?' and 'why?' certain health policy or system features exist, and to assess efforts to change power dynamics (L Gilson, Orgill, and Shroff 2018; Shiffman and Smith 2007). Since case studies typically draw on and triangulate between multiple sources of data, this approach may be equally useful for exploring sources of power (how power emerges) and dimensions of power (how power is channelled) within a health system or health policy sphere, including across time (Sriram et al. 2018).	the ways in which broader social and political environments influence both macro- and micro-power dynamics (Rotarou and Sakellariou, 2017, Doolin 2004). Comparative case studies can be usefully used for theory building or theory testing, especially when cases are selected for the purposes of comparing or contrasting across certain dimensions (Malajovich et al. 2012). Case studies may also be used for assessing causality using more objective formats such as process tracing (Blatter and Haverland 2014).	phenomena. Researchers seeking to employ case studies should be particularly attentive to aligning the purpose of enquiry with case selection, and ensuring rigor in examination of the case as well as in the application of the particular methods chosen (e.g. in-depth interviews or observation). It is also important to appropriately 'bound' the case in such a way that one can focus on the phenomenon at hand, but also understand the deeper mechanisms of power at play. Analysts should also ensure that there is sufficiently rigorous interpretive analysis (Yin 2014).
Discourse analysis The study of how language and structures of meaning -- whether written or spoken -- are used in social contexts.	This research method can illuminate the construction and communication of health systems "software", such as values, beliefs, and assumptions (Sheikh et al. 2011) through word choice, linguistic style, conversational codes (taking turns, interrupting, reacting) and non-verbal components of speech (pauses, tone of voice, gestures).	In closely examining the use of language in texts (such as laws, policy and national strategy documents, news media articles) and oral communication (such as transcribed interviews, debates or speeches) discourse analysis brings attention to the ways in which communicative acts construct shared understandings of what is normal (Steel, 2019, Sacks, 1995) and what is possible, legitimate, or true (Foucault 1972). Discourse analysis includes the study of omitted meanings and tracks contents and references that	Discourse analysis is often conducted together with other methods. While it produces important observations on the trajectories taken by conceptualizations, from inception to oblivion, and the central role they may play in shaping policies initiatives, Discourse analysis needs to be complemented (corroborated or invalidated) with observations of

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

		are kept hidden or are altogether avoided (Sieleunou et al. 2017; Yazdannik, Yousefy, and Mohammadi 2017). Discourse analysis can problematize dominant paradigms in global health, such as the ways that standard epidemiological "exposures" and factors can obscure the role of power asymmetries.	events and actual decisions and their impact. Illuminating and critiquing structures of power demands researchers reflect on their own status, assumptions, cultural perspective, and social identity (Hodges, Kuper, and Reeves 2008).
Political economy analysis An approach that focuses on power (state structures, government and the law) and resources (labour, capital, trade and production) how they are distributed and contested in different country and sector contexts, and the resulting implications for policy and development outcomes (Reich 2019).	Political economy can draw on both quantitative and qualitative methods to: i) explore the nature of the political landscape through mapping the power and position of key actors and ii) how the distribution of power and resources influence processes that sustain and transform patterns of relationships and through this, the feasibility of policy reform over time (Collinson 2003; Reich 2019). Political economy analyses may also be applied to strengthen policy processes by, for example, surfacing potential allies or opponents for policies and developing strategies to engage politically with key stakeholders (Reich 2019).	Political economy analysis is particularly appropriate for exploring the role of material and productive power in the development, implementation of (and interaction between) national and international health policies and systems (Reich, 2019), and for illuminating the intent behind particular policies (i.e., political power, financial motives, etc). Political economy analysis can reveal contradictions between political declarations and actual practices; as in the analysis of informal illegal fees charged to patients, that in some contexts are fundamental for the economy of the system, despite the official declared intentions to stop them (Croke 2012).	When using political economy to analyse power in health systems, researchers should be aware of the risk of an objectivist application of this methodology that could mask the researchers' own positionality. Researchers should also be aware of the tendency in global health to view issues as apolitical or ahistorical, and should seek to embed examination the historical and structural reasons behind inequity.
Participatory Action Research	PAR seeks fresh insight into injustice by positioning those	By exploring and recognising different sources of power (e.g. social position, cultural knowledge)	Applying PAR to study power demands that researcher /

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Aims to understand and improve the world by changing it; this is accomplished by overcoming the separation of researcher (subject) and people being studied (object).	affected by problems as both the primary sources of information and the primary actors in generating, validating and using knowledge for action (Loewenson et al. 2014). PAR can be used for studying power as a subject; however, its aim is to actively contribute to transforming power relations in the study of any topic in HPSR, and in other fields.	and applications of power (e.g. via citizen-led collective action (Hernández et al. 2020), PAR not only enables new *understandings* of power but can itself *change* power relations. This may be achieved by: (1) shifting control over the construction of knowledge and truth from the historically privileged to the historically marginalized (Aryeetey et al. 2013; Mathias et al. 2019) (2) increasing researcher / participant understandings of injustice (conscientization (Freire 1974) activism, and solidarity (e.g., (Minkler 2000); in pursuit of (3) transforming the relationships and power within systems and institutions.	participants grapple with questions of collectivism, community, and solidarity. This includes critically examining how 'community' is defined and bounded in a given setting, the relative risks and benefits borne by those involved, whether sufficient commitment and resources are in place for meaningful action, alignment of interests in terms of research and action outcomes, and whether researchers are genuinely able and willing to shift power (Khanlou and Peter 2005).
Actor Interface Analysis Focuses on individual actors and their power struggles, which are embedded in the often-neglected lived experiences of the policy actors (Long 2001; Schutz 1962).	When used to study health policy, Actor Interface Analysis examines how interactions between experiences among different types of actors and in the context of certain policies, shape the implementation and outcomes of the policy. Where actors interact, power struggles such as collaboration, contestation, conflict or resistance can be located and analysed.	This methodology brings an 'actor-centric' lens to the study of power in policy implementation as compared to other (more institutionally-focused) methodologies and helps to examine how policy related decisions and action are shaped by the actors' struggles or their power practices set against their lived experiences (Long 2001; Lehmann and Gilson 2013). This approach thus provides a robust conceptual as well as methodological entry point for the examination of the expressions of power (power dynamics), their underpinning elements, and their impacts on the policy process.	This methodology requires the researcher to develop a detailed understanding of the policy, and a deep understanding of the lived realities of all actors (not just their understanding and perspective on the policy issues). The very precise focus of analysis (specific actors, in specific relationships, reacting to specific policies) may limit analytic generalisation.
Stakeholder analysis Explores the positions, interests, relationships	Stakeholder Analysis is an actor-oriented methodology. This methodology is useful for	Stakeholder analysis is most commonly used *prospectively*, as a tool for researchers and practitioners seeking to understand the feasibility	Assessing power and interests of stakeholders requires 'interpretive judgements' (Lucy Gilson et al. 2012)

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

and power relations of different stakeholders in a particular policy or practice context.	examining the sources and power differentials of key policy and health system actors from frontline healthcare workers to national level policy makers (L Gilson, Orgill, and Shroff 2018).	and prospects of a given policy and develop responses to likely challenges in formulating or implementing that policy (Abiiro and McIntyre 2013). Both qualitative and quantitative methods, including network analysis (Heydari et al. 2018) can be used, and it can be useful for examining power struggles, for example, when trying to understand who will contest or oppose a policy (Lucy Gilson et al. 2012; Schmeer 1999).	which require a strong understanding of the context and analyst positionality. This method has less of a focus on identifying or explaining specific 'interfaces' than in Actor Interface Analysis.
Big data analytics Examines high volume, high diversity, biological, clinical, environmental, and behavioural information collected from single individuals to large cohorts at one or several time points (Auffray et al. 2016)	Big data analytics can demonstrate patterns in health outcomes, decision making and behaviours (OECD 2014), health policy (e.g. resourcing, implementation fidelity and outcomes (Schintler and Kulkarni 2014) and health system function (e.g. patient and provider behaviours) (Pastorino et al. 2019; Shafqat et al. 2020)	When applied in conjunction with a power lens big data analytics can reveal important (and often masked) trends or patterned experiences, prompting further explanatory work or evaluative action (Kolkman 2020). For example, Yu et al (2019) use big data analytics to explore the influence of private medical providers in promoting unnecessary medical interventions (Yu et al, 2019); while Santana show how health insurance data can be modelled as a social network to reveal the role of physician networks in referral decisions (Santana et al. 2018). Big data analytics could also help identify systemic discrimination, information asymmetry, patient-provider dynamics and their influence on care quality and responsiveness. Galetsi et al observe their potential for traditional decision making within the doctor-patient relationship (Galetsi et al., 2019). Shah et al , too demonstrate how	Given its volume and velocity, as well as its potential interest to profit seeking entities, big data presents unique challenges for ethics, boundaries, and reflexivity. In particular, researchers should consider the potential mis-uses of the data, the extent to which the data manipulated accurately represents the factors of interest (construct validity), and which individuals and groups are overlooked in analyses that focus on the mean (or median), a challenge that is inherent to most quantitative analyses (Vayena et al. 2018). Adaptations of the objectivist life-cycle of big data research (*formulate question / data collection / data*

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

		analysis of online physician reviews (OPRs) could promote inclusion of patient 'voice' and preferences in otherwise largely quantitatively driven process-evaluations of healthcare quality (Shah et al. 2020).	*storage & transfer / data analysis / report & visualization / evaluation*) include Socio-Technical Systems (STS) perspectives (Muhammad, Teoh, and Wickramasinghe 2012) and Actor Network Theory (ANT) (Iyamu and Mgudlwa 2018).
Social network analysis The quantitative study of relationship patterns among actors, i.e., people, groups or organizations (Blanchet and James 2012; Hawe, Webster, and Shiell 2004)	This methodology draws from sociology and mathematical foundations of graph theory to examine the structure and patterns (Borgatti et al. 2009). Social network analysis can enable the study of power by illuminating how the nature of actors and connections (number, strength, type) enable forms of power such as money, pressure, influence, and knowledge to be concentrated, spread, blocked or engaged. In addition to helping understand the nature of relations between and among actors in a system, social network analysis supports examination of how relationships influence the structure of a system (Borgatti et al. 2009).	The value of SNA lies in its ability to illuminate underlying structures and networks that formally and informally influence practices, policy and programs (Blanchet and James 2012). Examples of the application of SNA to investigate power include understanding health sector reforms (Wang 2013), identifying institutional networks and their involvement in the devolution of financial resources (Etemadi et al. 2017) and exploring the relative importance of personal relationships as compared to formal hierarchical positions (Shearer, Dion, and Lavis 2014).	Quantifying relationships can be resource intensive and mask nuances in the relationships and dynamics between actors. Reflexivity in conducting social network analysis demands that researchers are self-critical and transparent about their decisions on boundaries for which actors they will include and exclude and how they choose to measure and define connections (Laumann et al., 1989).
Social epidemiology A subfield of epidemiology concerned with the relationships	Techniques from epidemiology are productively applied to questions of power in health systems by	For example, research into the impact of the U.S. Civil Rights Act revealed how elevated maternal mortality rates among Black women in the U.S. south was due in part to hospitals denying them	The use of epidemiological methods to study power requires careful thought about how constructs are defined and measured, such as, for

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

between social factors, including social hierarchies and social phenomena, and health.	examining the impact of health and social policy on health status. Indicators of health status are the primary outcomes of interest, and can be used to explore and highlight policy priorities for health system actors such as health service coverage, financial protection, and inter-personal quality of care (Berkman, Kawachi, and Glymour 2014).	entry (Almond and Chay 2006). Other quantitative and mixed methods research has shown how insurance, user fees, fee exemptions and other mechanisms for payment influence inequities in health care access and utilization (Atchessi, Ridde, and Zunzunegui 2016; De Allegri et al. 2015).	example, making "experience of caste-ism" or "experience of racism" as the exposure of interest, rather than caste or race (O'Brien et al. 2020). Moreover, it is important to avoid "black-box epidemiology" which detects associations between exposures and outcomes, without adequate theorizing and measurement of the mechanisms and explanation for these outcomes (Jackson and Arah 2020; Wemrell et al. 2016).
Historical research Historical research aims to generate systematic explanatory narratives relating to past events, places or people. Historical evidence includes visual, audio and text-based materials (archival material, communications, policy documents and project reports) and first-person accounts (oral histories). Principles from case study research such as process tracing,	The inclusion of historical methods can surface underlying structures and systems of power as they have developed over time. In the context of HPSR, social historians may focus on the ways that health and other social policies and systems shape inequities (Szreter 1988) or, the ways that different groups accepted, adapted, and subverted the dictates of colonial medicine (Anderson 2014; Sivaramakrishnan 2006) or neo-colonial or internal colonial forms of public health practice (Cueto and Palmer, 2015; Stepan, 1991. Economic and political historians trace the impact	The study of history can illuminate broad power-related themes that continue to be relevant, such as the interface between individual liberty and domestic governmental health objectives (e.g. Colgrove, 2004); medical experimentation, social control, and scientific racism (Gutiérrez and Fuentes 2009; Reverby 2012); corporate profit-making, governmental interference, and population health (Reubi and Berridge 2016); and global health as a vehicle for state-craft, diplomacy, population control, and Western-centric conceptions of charity (Birn 2014; Chorev 2012; Connelly and Connelly 2009; Packard 2016; Quevedo Velez 2001). Such themes have immediate relevance as they shape phenomena such as how vaccination and	Using a power lens in the approach to archival research requires a consideration of "how attentions were trained and selectively cast" in the storing and cataloguing of material remains (Stoler, 2009, p. 1); relationships of power shape what is saved in official archives versus what is lost or destroyed. Insofar as traditional historical approaches can privilege written work, it may elide the perspectives of historically oppressed groups. To combat this tendency, alternative methods such as participatory oral historical or community-based sourcing of visual, audio and text-based records not

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

discourse analysis, and other methodologies and methods delineated here could inform how the material is both sourced and analysed.	of policy and political changes on health status (e.g. as a social determinant of health), or on the development of institutions (including formal institutions, such as WHO, and institutions as 'rules of the game') on the consolidation of prevailing assumptions and approaches to health policy and service delivery (Agyepong 2018; Woolcock, Szreter, and Rao 2020).	family planning interventions are perceived by those groups who have been on the receiving end of past state-sanctioned abuses. They also offer broader explanatory value as 'cases' for the development of theory related to power (Szreter and Woolcock 2004) and as case studies for contemporary policy debates.	located in 'official' repositories, would open up alternative analytical possibilities. Finally, the tendency in global health to extract "lessons" from history or to use history to justify certain courses of political action, can obfuscate the dynamics of power that shape the creation of historical narratives and their translation into HPSR debates.

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

References

Abiiro, Gilbert Abotisem, and Di McIntyre. 2013. "Universal Financial Protection through National Health Insurance: A Stakeholder Analysis of the Proposed One-Time Premium Payment Policy in Ghana." *Health Policy and Planning* 28 (3): 263–78. https://doi.org/10.1093/heapol/czs059.

Agyepong, Irene A. 2018. "Universal Health Coverage: Breakthrough or Great White Elephant?" *The Lancet* 392 (10160): 2229–36. https://doi.org/10.1016/S0140-6736(18)32402-4.

Almond, Douglas, and Kenneth Chay. 2006. "The Long-Run and Intergenerational Impact of Poor Infant Health: Evidence from Cohorts Born During the Civil Rights Era," January.

Anderson, Warwick. 2014. "Making Global Health History: The Postcolonial Worldliness of Biomedicine." *Social History of Medicine* 27 (2): 372–84. https://doi.org/10.1093/shm/hkt126.

Aryeetey, Genevieve C., Caroline Jehu-Appiah, Agnes M. Kotoh, Ernst Spaan, Daniel K. Arhinful, Rob Baltussen, Sjaak van der Geest, and Irene A. Agyepong. 2013. "Community Concepts of Poverty: An Application to Premium Exemptions in Ghana's National Health Insurance Scheme." *Globalization and Health* 9 (1): 12. https://doi.org/10.1186/1744-8603-9-12.

Atchessi, Nicole, Valéry Ridde, and Maria-Victoria Zunzunegui. 2016. "User Fees Exemptions Alone Are Not Enough to Increase Indigent Use of Healthcare Services." *Health Policy and Planning* 31 (5): 674–81. https://doi.org/10.1093/heapol/czv135.

Auffray, Charles, Rudi Balling, Inês Barroso, László Bencze, Mikael Benson, Jay Bergeron, Enrique Bernal-Delgado, et al. 2016. "Making Sense of Big Data in Health Research: Towards an EU Action Plan." *Genome Medicine* 8 (1): 71. https://doi.org/10.1186/s13073-016-0323-y.

Berkman, LF, I Kawachi, and MM Glymour. 2014. *Social Epidemiology*. Second. Cambridge, MA: Oxford University Press.

Birn, A.-E. 2014. "Backstage: The Relationship between the Rockefeller Foundation and the World Health Organization, Part I: 1940s-1960s." *Public Health* 128 (2): 129–40. https://doi.org/10.1016/j.puhe.2013.11.010.

Blanchet, Karl, and Philip James. 2012. "How to Do (or Not to Do) ... a Social Network Analysis in Health Systems Research." *Health Policy and Planning* 27 (5): 438–46. https://doi.org/10.1093/heapol/czr055.

Blatter, Joachim, and Markus Haverland. 2014. "Case Studies and (Causal-) Process Tracing." In , 59–83. https://doi.org/10.1057/9781137314154_4.

Chorev, N. 2012. *The World Health Organization between North and South*. Ithaca, NY: Cornell University Press.

Collinson, S. 2003. "Power, Livelihoods and Conflict: Case Studies in Political Economy Analysis for Humanitarian Action." HPG Report 13. London, UK: Humanitarian Policy Group, Overseas Development Institute.

Connelly, M, and MJ Connelly. 2009. *Fatal Misconception: The Struggle to Control World Population*. Cambridge, MA: Harvard University Press.

Creswell, JW, and CN Poth. 2017. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications.

Croke, Kevin. 2012. "The Political Economy of Child Mortality Decline in Tanzania and Uganda, 1995–2007." *Studies in Comparative International Development* 47 (4): 441–63. https://doi.org/10.1007/s12116-012-9120-9.

De Allegri, Manuela, Justin Tiendrebéogo, Olaf Müller, Maurice Yé, Albrecht Jahn, and Valéry Ridde. 2015. "Understanding Home Delivery in a Context of User Fee Reduction: A Cross-Sectional Mixed Methods Study in Rural Burkina Faso." *BMC Pregnancy and Childbirth* 15 (1): 330. https://doi.org/10.1186/s12884-015-0764-0.

Etemadi, Manal, Hasan Abolghasem Gorji, Hannaneh Mohammadi Kangarani, and Kioomars Ashtarian. 2017. "Power Structure among the Actors of Financial Support to the Poor to Access Health

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Services: Social Network Analysis Approach." *Social Science & Medicine* 195 (December): 1–11. https://doi.org/10.1016/j.socscimed.2017.10.026.

Freire, P. 1974. *Education for Critical Consciousness*. London, UK: Continuum.

Gilson, L, M Orgill, and ZC Shroff. 2018. "A Health Policy Analysis Reader: The Politics of Policy Change in Low- and Middle-Income Countries." Alliance for Health Policy and Systems Research and World Health Organization.

Gilson, Lucy, Ermin Erasmus, Jo Borghi, Janet Macha, Peter Kamuzora, and Gemini Mtei. 2012. "Using Stakeholder Analysis to Support Moves towards Universal Coverage: Lessons from the SHIELD Project." *Health Policy and Planning* 27 Suppl 1 (March): i64-76. https://doi.org/10.1093/heapol/czs007.

Gutiérrez, Elena R, and Liza Fuentes. 2009. "Population Control by Sterilization: The Cases of Puerto Rican and Mexican-Origin Women in the United States." *Latino(a) Research Review* 7 (3): 85–100.

Hagene, Turid. 2018. "The Power of Ethnography: A Useful Approach to Researching Politics." *Forum for Development Studies* 45 (2): 305–25. https://doi.org/10.1080/08039410.2017.1366360.

Hammersley, M, and P Atkinson. 1995. *Ethnography: Principles in Practice*. Routledge.

Hawe, Penelope, Cynthia Webster, and Alan Shiell. 2004. "A Glossary of Terms for Navigating the Field of Social Network Analysis." *Journal of Epidemiology and Community Health* 58 (12): 971–75. https://doi.org/10.1136/jech.2003.014530.

Hernández, Alison, Anna-Karin Hurtig, Isabel Goicolea, Miguel San Sebastián, Fernando Jerez, Francisco Hernández-Rodríguez, and Walter Flores. 2020. "Building Collective Power in Citizen-Led Initiatives for Health Accountability in Guatemala: The Role of Networks." *BMC Health Services Research* 20 (1): 416. https://doi.org/10.1186/s12913-020-05259-6.

Heydari, Majid, Hesam Seyedin, Mehdi Jafari, and Reza Dehnavieh. 2018. "Stakeholder Analysis of Iran's Health Insurance System." *Journal of Education and Health Promotion*. Wolters Kluwer Medknow Publications.

Hodges, Brian David, Ayelet Kuper, and Scott Reeves. 2008. "Discourse Analysis." *BMJ* 337 (August).

Irwin, Rachel, and Richard Smith. 2019. "Rituals of Global Health: Negotiating the World Health Assembly." *Global Public Health* 14 (2): 161–74. https://doi.org/10.1080/17441692.2018.1504104.

Iyamu, Tiko, and Sibulela Mgudlwa. 2018. "Transformation of Healthcare Big Data through the Lens of Actor Network Theory." *International Journal of Healthcare Management* 11 (3): 182–92. https://doi.org/10.1080/20479700.2017.1397340.

Jackson, John W, and Onyebuchi A Arah. 2020. "Invited Commentary: Making Causal Inference More Social and (Social) Epidemiology More Causal." *American Journal of Epidemiology* 189 (3): 179–82. https://doi.org/10.1093/aje/kwz199.

Jain, Sumeet, and Sushrut Jadhav. 2009. "Pills That Swallow Policy: Clinical Ethnography of a Community Mental Health Program in Northern India." *Transcultural Psychiatry* 46 (1): 60–85. https://doi.org/10.1177/1363461509102287.

Kapilashrami, Anuj, and Barbara McPake. 2013. "Transforming Governance or Reinforcing Hierarchies and Competition: Examining the Public and Hidden Transcripts of the Global Fund and HIV in India." *Health Policy and Planning* 28 (6): 626–35. https://doi.org/10.1093/heapol/czs102.

Khanlou, N., and E. Peter. 2005. "Participatory Action Research: Considerations for Ethical Review." *Social Science & Medicine (1982)* 60 (10): 2333–40. https://doi.org/10.1016/j.socscimed.2004.10.004.

Kolkman, Daan. 2020. "The Usefulness of Algorithmic Models in Policy Making." *SocArXiv*. https://doi.org/doi:10.1016/j.giq.2020.101488.

Laumann, Edward, Peter Marsden, and David Prensky. 1983. "The Boundary Specification Problem in Network Analysis." *Applied Network Analysis: A Methodological Introduction* 61 (January).

Lehmann, U., and L. Gilson. 2013. "Actor Interfaces and Practices of Power in a Community Health Worker Programme: A South African Study of Unintended Policy Outcomes." *Health Policy Plan* 28: 358–66.

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Loewenson, R, AC Laurell, C Hogstedt, L D'Ambruoso, and Z Shroff. 2014. "Participatory Action Research in Health Systems: A Methods Reader." Harare, Zimbabwe: TARSC, AHPSR, WHO, IDRC Canada, EQUINET.

Long, Norman. 2001. *Development Sociology: Actor Perspectives*. London, UK: Routledge.

Malajovich, Laura, Maria Antonieta Alcalde, Kelly Castagnaro, and Carmen Barroso. 2012. "Budget Transparency on Maternal Health Spending: A Case Study in Five Latin American Countries." *Reproductive Health Matters* 20 (39): 185—195. https://doi.org/10.1016/s0968-8080(12)39607-9.

Mathias, Kaaren, Pooja Pillai, Rakhal Gaitonde, Kakul Shelly, and Sumeet Jain. 2019. "Co-Production of a Pictorial Recovery Tool for People with Psycho-Social Disability Informed by a Participatory Action Research Approach—a Qualitative Study Set in India." *Health Promotion International* 35 (3): 486–99. https://doi.org/10.1093/heapro/daz043.

Minkler, M. 2000. "Using Participatory Action Research to Build Healthy Communities." *Public Health Reports (Washington, D.C. : 1974)* 115 (2–3): 191–97. https://doi.org/10.1093/phr/115.2.191.

Mishra, Arima, and Devaki Nambiar. 2018. "On the Unraveling of 'Revitalization of Local Health Traditions' in India: An Ethnographic Inquiry." *International Journal for Equity in Health* 17 (1): 175. https://doi.org/10.1186/s12939-018-0890-1.

Muhammad, Imran, S. Teoh, and N. Wickramasinghe. 2012. "Why Using Actor Network Theory (ANT) Can Help to Understand the Personally Controlled Electronic Health Record (PCEHR) in Australia." *InnovaInt. J. Actor Netw. Theory Technol. Innov.* 4: 44–60.

Nambiar, Devaki. 2013. "India's 'Tryst' with Universal Health Coverage: Reflections on Ethnography in Indian Health Policymaking." *Social Science & Medicine (1982)* 99 (December): 135–42. https://doi.org/10.1016/j.socscimed.2013.08.022.

Nyamongo, I.K. 2002. "Health Care Switching Behaviour of Malaria Patients in a Kenyan Rural Community." *Social Science & Medicine* 54 (3): 377–86. https://doi.org/10.1016/S0277-9536(01)00036-3.

Nyoka, Bongani. 2019. "Bernard Magubane's Critique of Anthropology in Southern Africa: An Introductory Essay." *Journal of Contemporary African Studies* 37 (2–3): 169–90. https://doi.org/10.1080/02589001.2019.1662892.

O'Brien, Rourke, Tiffany Neman, Nathan Seltzer, Linnea Evans, and Atheendar Venkataramani. 2020. "Structural Racism, Economic Opportunity and Racial Health Disparities: Evidence from U.S. Counties." *SSM - Population Health* 11 (March): 100564–100564. https://doi.org/10.1016/j.ssmph.2020.100564.

OECD. 2014. "Unleashing the Power of Big Data for Alzheimer's Disease and Dementia Research." https://www.oecd-ilibrary.org/content/paper/5jz73kvmvbwb-en.

Packard, Randall. 2016. *A History of Global Health: Interventions Into the Lives of Other Peoples*. Baltimore, MD: Johns Hopkins University Press.

Pastorino, Roberta, Corrado De Vito, Giuseppe Migliara, Katrin Glocker, Ilona Binenbaum, Walter Ricciardi, and Stefania Boccia. 2019. "Benefits and Challenges of Big Data in Healthcare: An Overview of the European Initiatives." *European Journal of Public Health*.

Pigg, Stacy Leigh. 2013. "On Sitting and Doing: Ethnography as Action in Global Health." *Social Science & Medicine (1982)* 99 (December): 127–34. https://doi.org/10.1016/j.socscimed.2013.07.018.

Quevedo Velez, E. 2001. "La Salud Pública En Colombia: Seis Siglos Entre El Interes Internacional y El Desinterés Nacional." *Revista Del Colegio Mayor de Nuestra Señora Del Rosari* 95 (588): 5–29.

Reich, Michael R. 2019. "Political Economy Analysis for Health." *Bulletin of the World Health Organization* 97 (8): 514–514. https://doi.org/10.2471/BLT.19.238311.

Reubi, David, and Virginia Berridge. 2016. "The Internationalisation of Tobacco Control, 1950-2010." *Medical History* 60 (4): 453–72. https://doi.org/10.1017/mdh.2016.97.

Reverby, SM. 2012. *Tuskegee's Truths: Rethinking the Tuskegee Syphilis Study*. UNC Press Books.

Rotarou, Elena S., and Dikaios Sakellariou. 2017. "Neoliberal Reforms in Health Systems and the Construction of Long-Lasting Inequalities in Health Care: A Case Study from Chile." *Health Policy (Amsterdam, Netherlands)* 121 (5): 495–503. https://doi.org/10.1016/j.healthpol.2017.03.005.

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Santana, Vagner Figueredo de, Ana Paula Appel, Luis Gregorio Moyano, Marcia Ito, and Claudio Santos Pinhanez. 2018. "Revealing Physicians Referrals from Health Insurance Claims Data." *Big Medical/Healthcare Data Analytics* 13 (September): 3–10. https://doi.org/10.1016/j.bdr.2018.03.002.

Schintler, Laurie A., and Rajendra Kulkarni. 2014. "Big Data for Policy Analysis: The Good, The Bad, and The Ugly." *Review of Policy Research* 31 (4): 343–48. https://doi.org/10.1111/ropr.12079.

Schmeer, K. 1999. "Guidelines for Conducting a Stakeholder Analysis." In . Abt Associates.

Schutz, A. 1962. *The Problem of Social Reality*. The Hague: Mijhoff.

Shafqat, Sarah, Saira Kishwer, Raihan Ur Rasool, Junaid Qadir, Tehmina Amjad, and Hafiz Farooq Ahmad. 2020. "Big Data Analytics Enhanced Healthcare Systems: A Review." *The Journal of Supercomputing* 76 (3): 1754–99. https://doi.org/10.1007/s11227-017-2222-4.

Shah, Adnan Muhammad, Xiangbin Yan, Samia Tariq, and Salim Khan. 2020. "Listening to the Patient Voice: Using a Sentic Computing Model to Evaluate Physicians' Healthcare Service Quality for Strategic Planning in Hospitals." *Quality & Quantity*, June. https://doi.org/10.1007/s11135-020-00999-3.

Shearer, Jessica C., Michelle Dion, and John N. Lavis. 2014. "Exchanging and Using Research Evidence in Health Policy Networks: A Statistical Network Analysis." *Implementation Science* 9 (1): 126. https://doi.org/10.1186/s13012-014-0126-8.

Sheikh, K, L Gilson, I.A. Agyepong, K. Hanson, F. Ssengooba, and S. Bennett. 2011. "Building the Field of Health Policy and Systems Research: Framing the Questions." *PLoS Medicine* 8: 1001073.

Shiffman, J., and S. Smith. 2007. "Generation of Political Priority for Global Health Initiatives: A Framework and Case Study of Maternal Mortality." *The Lancet* 370: 1370–79.

Sieleunou, Isidore, Anne-Marie Turcotte-Tremblay, Jean-Claude Taptué Fotso, Denise Magne Tamga, Habakkuk Azinyui Yumo, Estelle Kouokam, and Valery Ridde. 2017. "Setting Performance-Based Financing in the Health Sector Agenda: A Case Study in Cameroon." *Globalization and Health* 13 (1): 52. https://doi.org/10.1186/s12992-017-0278-9.

Sivaramakrishnan, K. 2006. *Old Potions. New Bottles: Recasting Indigenous Medicine in Colonial Punjab, 1945*. Orient Longman.

Sriram, Veena, Stephanie M Topp, Marta Schaaf, Arima Mishra, Walter Flores, Subramania Raju Rajasulochana, and Kerry Scott. 2018. "10 Best Resources on Power in Health Policy and Systems in Low- and Middle-Income Countries." *Health Policy and Planning* 33 (4): 611–21. https://doi.org/10.1093/heapol/czy008.

Steel, EJ. 2019. "The Duplicity of Choice and Empowerment: Disability Rights Diluted in Australia's Policies on Assistive Technology." *Societies* 9 (39).

Szreter, Simon. 1988. "The Importance of Social Intervention in Britain's Mortality Decline c.1850–1914: A Re-Interpretation of the Role of Public Health1." *Social History of Medicine* 1 (1): 1–38. https://doi.org/10.1093/shm/1.1.1.

Szreter, Simon, and Michael Woolcock. 2004. "Health by Association? Social Capital, Social Theory, and the Political Economy of Public Health." *International Journal of Epidemiology* 33 (4): 650–67. https://doi.org/10.1093/ije/dyh013.

Vayena, Effy, Joan Dzenowagis, John S. Brownstein, and Aziz Sheikh. 2018. "Policy Implications of Big Data in the Health Sector." *Bulletin of the World Health Organization* 96 (1): 66–68. https://doi.org/10.2471/BLT.17.197426.

Wang, Guang-Xu. 2013. "Policy Network Mapping of the Universal Health Care Reform in Taiwan: An Application of Social Network Analysis." *Journal of Asian Public Policy* 6 (3): 313–34. https://doi.org/10.1080/17516234.2013.850229.

Wemrell, Maria, Juan Merlo, Shai Mulinari, and Anne-Christine Hornborg. 2016. "Contemporary Epidemiology: A Review of Critical Discussions Within the Discipline and A Call for Further Dialogue with Social Theory." *Sociology Compass* 10 (2): 153–71. https://doi.org/10.1111/soc4.12345.

Woolcock, Michael, Simon Szreter, and V Rao. 2020. "How and Why History Matters for Development Policy." In *History, Historians and Development Policy*. Manchester University Press.

Topp SM, Schaaf M, Sriram V. et al Power analysis in health policy and systems research: a guide to research conceptualisation. *BMJ Global Health* 2021: 2021;0:e007268. doi:10.1136/ bmjgh-2021-007268

Yazdannik, Ahmadreza, Alireza Yousefy, and Sepideh Mohammadi. 2017. "Discourse Analysis: A Useful Methodology for Health-Care System Researches." *Journal of Education and Health Promotion*. Wolters Kluwer Medknow Publications.

Yin, RK. 2014. *Case Study Research: Design and Methods*. Fifth. SAGE Publications.