UMEÅ UNIVERSITY

KNOWLEDGE DIVERSIFICATION IN PUBLIC HEALTH THROUGH INTERSECTIONALITY

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Abstract

Background

Knowledges about health inequalities and their causes are a central concern in public health. Generally, these relate to the social patterning of health and the forces that affect health conditions in daily life. However, public health decision making has been criticized for excluding knowledges of particular importance for health equity. This poses a challenge since knowledges and understandings shape what policies and interventions are viewed as relevant, reasonable or even possible to think of. If certain knowledges are left out, there is a risk that both knowledge making and decision making with respect to health inequalities will exclude important measures.

Since intersectionality encompasses a wide range of knowledge-making practices centered around social justice, it may contribute diverse knowledges of importance to health equity. Intersectionality has recently gained traction within public health and represents an important shift in conceptualizing how different dimensions of inequalities, such as sexism, classism and racism, interlock to generate social exclusion and marginalization instead of working separately, one by one.

Aim

The overall aim of this thesis is to explore the possibility of using intersectionality as a tool for knowledge diversification within public health. The specific research question is:

What knowledges and understandings of health inequalities do the inter-categorical (studies I and II) and post-categorical (studies III and IV) approaches to intersectionality contribute and how are such contributions made?

Material and methods

The method of the cover story can be understood as a way of studying science or as a retrospective self-reflection based on the four individual studies, making up the material of the thesis. Specifically, the material was reassembled and retold in order to show how certain intersectional approaches generate different types of knowledges and understandings of health inequalities by involving different ways of operationalizing inequalities and managing categories.

In study I, a scoping review of the quantitative international literature was undertaken with the aim of mapping and describing inter-categorical inequalities in mental health. Study II was a quantitative analysis of a population-based survey with the aim of mapping inter-categorical inequalities in mental health in the Swedish adult population. Study III was a policy analysis of a government bill that proposes a national strategy on alcohol, drugs, tobacco and gambling with the study aim to examine the equity-perspective of the bill through an intersectional lens. Study IV was a post-qualitative inquiry based on participatory observations and interviews with the study aim to explore the becoming of social divisions among seniors as they participate in health-promoting activities.

Results

The inter-categorical approach to intersectionality (applied in studies I and II) generated knowledges about health inequalities as quantitative mean differences between population groups, and highlighted unexpected patterns and unpredictable inequalities in mental health. This implies the importance of building responsive systems that regularly monitor inequalities across different intersectional positions and contexts so that services can be directed and adapted to those most in need.

The post-categorical approach to intersectionality (applied in studies III and IV) generated knowledges about health inequalities as processes of marginalization, resistance, exclusion, or inclusion, and highlighted difficult trade-offs with respect to public health policy and practice. This enables a transformative way of thinking by providing the possibility of doing things differently in everyday practices in which marginalization and resistance becomes.

Conclusion

Different approaches to intersectionality contribute diverse knowledges and understandings about health inequalities. This is important since it expands the possibilities for fair decision making and health equity through different outlooks on social justice. Knowledge diversification through intersectionality could be particularly useful to release tension due to the restrictive forces of public health decision making and to increase accountability for the multiple social interests of the population. Thus, it has the potential to make public health decision making more flexible, transparent, reflexive, and democratic.

Keywords: public health, intersectionality, feminism, health inequalities, health equity, knowledge diversification, decision making.

Enkel sammanfattning på svenska

Bakgrund

Kunskaper om ojämlikheter i hälsa och deras orsaker är centrala inom folkhälsa. Dessa handlar generellt om hur hälsan är fördelad i befolkningen och om de strukturer som utgör förutsättningarna för hälsa i det dagliga livet. System för beslutsfattande inom folkhälsa har dock kritiserats för att utesluta vissa typer av kunskaper med särskild betydelse för jämlik hälsa. Det är en utmaning eftersom kunskaper och förståelser formar vad som anses vara relevanta, rimliga eller ens tänkbara åtgärder. Om vissa kunskaper utelämnas riskerar kunskapsproduktionen och beslutsfattandet att bortse från åtgärder med potential att öka jämlikheten i hälsa.

Eftersom intersektionalitet är ett mångfacetterat begrepp som inbegriper en rad olika kunskaps-skapande praktiker med fokus på social rättvisa kan det bidra med kunskapsbredd för jämlik hälsa. Begreppet har nyligen vunnit mark inom folkhälsa och bidragit med en förändring i sättet att tänka kring hur dimensioner av ojämlikhet som sexism, klassism, och rasism gemensamt, snarare än var för sig, bidrar till socialt utanförskap och marginalisering.

Syfte

Det övergripande syftet är att utforska möjligheterna att använda intersektionalitet som ett verktyg för kunskapsbreddning inom folkhälsa. Den specifika frågeställningen är:

Vilka kunskaper och förståelser om ojämlikheter i hälsa bidrar den inter-kategoriska (studie I och II) och post-kategoriska (studie III och IV) ansatsen till intersektionalitet med och hur?

Material och metod

Ramberättelsens metod kan förstås som ett sätt att studera vetenskap eller som en retrospektiv självreflektion baserad på avhandlingens material i form av fyra individuella studier. Mer specifikt har materialet omorganiserats och återberättats för att visa på hur vissa intersektionella ansatser generar olika kunskaper och förståelser om ojämlikheter i hälsa genom olika sätt att operationalisera ojämlikheter och hantera kategorier.

Studie I var en kartläggande översikt baserad på internationell litteratur med syftet att kartlägga och beskriva inter-kategoriska ojämlikheter i psykisk hälsa. Studie II var en kvantitativ analys av en befolkningsbaserad enkätstudie med syftet att kartlägga inter-kategoriska ojämlikheter i psykisk hälsa i den svenska vuxna befolkningen. Studie III var en policyanalys av regeringens proposition om en ny strategi för alkohol, narkotika, dopning, tobak och spel om pengar med syftet att undersöka propositionens jämlikhetsperspektiv utifrån ett intersektionellt ramverk. Studie IV var en post-kvalitativ undersökning baserad på deltagande observationer och intervjuer med syftet att utforska uppförandet av sociala skillnader under hälsofrämjande aktiviteter för seniorer.

Resultat

Den inter-kategoriska ansatsen (studie I och II) generade kunskaper om ojämlikheter i hälsa som kvantitativa medelvärdesskillnader mellan intersektionella grupper vilket belyste oväntade mönster och oförutsedda ojämlikheter i psykisk hälsa. Detta ansågs antyda vikten av att bygga lyhörda system som regelbundet övervakar ojämlikheter mellan olika intersektionella positioner och sammanhang så att åtgärder kan formas och riktas med hänsyn till de med störst behov.

Den post-kategoriska ansatsen (studie III och IV) genererade kunskaper om intersektionella ojämlikheter i hälsa som processer i termer av marginalisering, motstånd, uteslutning och inkludering vilket belyste svåra avvägningar inom folkhälsopolicy och praktik. Detta ansågs möjliggöra ett transformativt tankesätt genom att bidra med möjligheten att göra saker annorlunda i den dagliga praktiken där marginalisering och motstånd uppstår.

Slutsats

Olika intersektionella ansatser bidrar med olika kunskaper och förståelser av ojämlikheter i hälsa. Detta är viktigt eftersom det utvidgar möjligheterna till ett välavvägt beslutsfattande och en jämlik hälsa genom olika syn på social rättvisa. Kunskapsbreddning genom intersektionalitet kan vara särskilt användbart för att öka ansvarsskyldigheten gentemot befolkningens olika intressen och behov. På så sätt har intersektionalitet potential att bidra till ett mer flexibelt, transparent, reflexivt och demokratiskt beslutsfattande inom folkhälsa.

Individual studies

The thesis is based on the following individual studies (I–IV):

I. Fagrell Trygg, N., Gustafsson, P.E., Månsdotter, A. (2019) 'Languishing in the crossroad? A scoping review of intersectional inequalities in mental health,' *International Journal for Equity in Health,* 18(1), pp. 1–13.

II. Fagrell Trygg, N., Månsdotter, A., Gustafsson, P.E. (2021) 'Intersectional inequalities in mental health across multiple dimensions of inequality in the Swedish adult population,' *Social Science & Medicine*, 283, pp. 114184.

III. Fagrell Trygg, N., et al. (n.d.) 'Reducing or reproducing inequalities in health? An intersectional policy analysis of how health inequalities are represented in a Swedish Bill on alcohol, drugs, tobacco and gambling'. *Submitted to BMC Public Health*, November 2021.

IV. Fagrell Trygg, N., Månsdotter, A. Disrupting disadvantages. A post qualitative exploration of the becoming of social divisions during health promoting activities for seniors. *Manuscript*.

Introduction

With this thesis, I hope to encourage a dialogue about knowledge diversity in public health decision making with respect to health equity. I have found intersectionality to be a useful tool putting different epistemologies at work. The inequality dimension of public health constitutes complex challenges that do not always seem compatible in the context of evidence-based decision making in which a certain type of knowledge is rewarded and epistemological diversity restricted. Hence, with this thesis, I am interested in exploring what knowledges and understandings different intersectional approaches contribute and to discuss their value for health equity.

Background

“Any particular approach necessarily affects our ability to understand and alter social inequalities in health” – Krieger (1992)

The inequality dimension of public health

Public health has been defined as “the art and science of preventing disease, prolonging life and promoting health through the organized efforts of society” (Acheson, 1988). One reason for engaging in public health issues is that health – as in physical, mental or social wellbeing (World Health Organization, 2020) – is a desirable good for most people and is perhaps the most valuable component of human life (e.g., Sen, 1998). Another reason is that the health of the population is considered to be a resource which enables wealth and welfare in society as a whole (World Health Organization, 2020). Public health efforts strive for increased average levels of health in the population as well as for decreased differences between population groups, that is, reduced health inequalities.

Health inequalities may refer to something that exists, without a moral claim of unfairness or societal obligation to act. In contrast, the concept of health inequities tends to refer to unjust differences or inequalities in health. What is considered as unfair will, of course, vary with a number of theories of justices. Grounded in the principle of health as a human right, we may understand the distributional goal as an egalitarian idea of people as equals deserving equal rights and opportunities (Braveman, 2014). A definition that is more explicitly linked to public health is that health inequities are systematic differences in health that could be avoided by reasonable means (Marmot et al., 2012). The World Health Organization (WHO) defines health inequities as “the unfair and avoidable differences in health status seen within and between countries” (World Health Organization, 2008). Their argument of fairness focus on poverty and that health seems to be distributed along a social gradient; the lower the socioeconomic position, the worse the health, which is considered both unfair and avoidable. According to WHO, efforts to reduce health inequities should target the social determinants of health (SDH). The SDH are the conditions in which “people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life” (World Health

Organization, 2008). Hence, the issue of health inequalities and inequities involves the analysis of a wide range of social-structural factors.

The concept of health inequalities as something that exists even without a moral claim of unfairness is used as a point of departure in this thesis. However, the concept is explored using approaches with different philosophical underpinnings which include different ideas about social justice and result in a less clear-cut line between the concept of health inequalities and health inequities. In the same way, the notion of social disadvantage, marginalization, or oppression is not fixed but varies with the philosophy of science and the outlook on social justice.

Knowledge diversification for equitable health

Our knowledges and understandings of health inequalities shape what policies and interventions are viewed as relevant, reasonable or even what policies and interventions are possible to think of. I use knowledges in plural in order to challenge the dominating view of knowledge as a singular object or truth. This is grounded in the notion of situated knowledges developed by Haraway (1991). What knowledges and understandings are sought and considered in the first place are restricted by the type of decision-making processes in general. These restrictive forces create tension within the multidisciplinary practice of public health in which diverse and sometimes conflicting ideas about knowledge coexist but at the same time, coordinated action for the ostensibly common goal of equitable health is sought.

How our knowledges and understandings shape the way we think about policies and interventions is illustrated in a study in which health inequality researchers in the UK where asked what health inequality research should focus on in order to advance health equity. The results revealed three different camps with different epistemological stances: 1) the “policy-focused positivists” who advocate for quantitative, experimental research designs that provide insights into understanding what works to reduce health inequalities; 2) the “empathetic ethnographers” who emphasize the need to explore the meaning and experiences of marginalized individuals and communities; and 3) the “critical materialist” who calls for research on power relations and, particularly, what role elite actors play in producing health inequalities (Garthwaite et al., 2016).

Results from the study also showed that the three camps likewise expressed different opinions on how to tackle inequities in health (Garthwaite et al., 2016). The policy-focused positivists wanted more and better evaluations of interventions and policies in order to guide civil servants and ministers in their decision making. The empathetic ethnographers thought it was more important to strengthen the voice and advocacy of marginalized populations. Even though the empathetic ethnographers expressed the need for co-producing research with marginalized populations, it was only the critical materialists who viewed health inequalities research as a political activity and an intervention in itself. This illustrates that knowledge diversity proliferates the options for how to tackle health inequities.

However, decision-making processes put restrictions on which knowledges and understandings are sought and considered in the first place. For example, the idea of evidence-based decision making (Jenicek, 1997, Sackett et al., 1996) foregrounds positivist knowledges with high internal validity; the idea of decision making as procedural justice (Daniels, 2016) emphasizes the importance of fair procedures and knowledges addressing ethical issues; the idea of decision making as collective understanding (Gabbay et al., 2003) foregrounds hermeneutic knowledges with contextual and experiential emphasis; and the immanent model (Wood et al., 1998) foregrounds critical knowledges as something becoming and constituted through practice. In this thesis, these discussions are placed in the context of public health with respect to the goal of equitable health.

In public health, the evidence-based model is well established. It supports the use of best available research and was originally developed for questions about intervention effect. However, it is undergoing adaptations in order to give room for other questions. For example, a typology of three types of evidence was proposed by Armstrong et al. (2014), including: data (Type 1), intervention effectiveness (Type 2), and implementation evidence (Type 3). Furthermore, Petticrew and Roberts (2003) suggested a matrix of evidence instead of a hierarchy of evidence. While the original hierarchy of evidence is focused on the single question of intervention effect and puts randomized controlled trials at the top (high internal validity), the matrix of evidence includes guidance for different types of research questions. For instance, it suggests that questions about effectiveness, that is, “does it work?” or safety, that is, “will it do more good than harm?” are preferably evaluated through systematic reviews of randomized controlled trials, while questions about process, that is, “how does it work” and salience, that is, “does it

matter" are preferably explored through qualitative research. Thus, the evidence matrix provides guidance on which methods and study designs to consult but does not provide orientation across epistemologies and ontologies. This means that all three of the epistemological camps found among the health inequalities researchers in the UK (Garthwaite et al., 2016) may be left out from the evidence-based model of decision making.

If certain knowledges are left out, there is a risk that both knowledge making and decision making with respect to health inequalities will be exclusive and not accountable to the multiple social interests of the population. For the sake of equitable health, evidence-based decision making is needed to allow for greater knowledge diversity. With this thesis, I hope to increase the awareness of the importance of knowledge diversity for health equity and to show how intersectionality (Cho et al., 2013) can promote knowledge diversification on health inequalities.

Intersectionality

"a broad based knowledge project" – Hill Collins (2015)

Intersectionality is a multifaceted concept that focuses on the interplay of multiple dimensions of power in generating social exclusion and marginalization (Lykke, 2010a). It represents an important shift in thinking about how dimensions of power, such as sexism, classism and racism, work as inclusive of each other rather than separately, one by one. This way of thinking has contributed to health inequalities research by challenging or at least complementing the unidimensional approach often used in public health in which inequalities are investigated along a single dimension of inequality (Bauer, 2014; Bowleg, 2012; Kapilashrami and Hankivsky, 2018). Even though intersectionality has been increasingly applied in health inequalities research, it is not yet widely established (Bauer et al., 2021; Ghasemi et al., 2021; Harari and Lee, 2021).

History and critical voices

The concept of intersectionality evolved from a dialogue between different strands of feminism before traveling to other disciplines, including public health. It has been used and interpreted differently across disciplines and philosophies and has been variously

conceptualized, for example as a “term,” a “concept,” a “paradigm,” and/or an “analytical approach.”

The actual term intersectionality was coined by Crenshaw (1989), although the central ideas of intersectionality can be traced further back in history. Crenshaws’ writings on intersectionality were mostly focused on the situation of black women in the United States but remained open to the analysis of other marginalized groups (Crenshaw, 1991). For example, she brought up the tension between the white dominated feminist movement and the male dominated anti-racist movement that work to marginalize black women who have to suppress one side of their identity to fit into either one of the other movements (Crenshaw, 1991). An earlier example which seized upon the same tension can be found in the term “interlocking oppression” used by the Combahee River Collective (1983), who stressed the need for an “integrated analysis and practice based upon the fact that the major systems of oppression are interlocking.”

Intersectionality is sometimes described as a transformative paradigm driven by the idea of social justice (Dill and Kohlman, 2012). As a transformative paradigm, intersectionality has challenged the Western positivist knowledge-making practice by recognizing the importance of producing knowledges from the standpoint of marginalized groups (e.g., Hill Collins, 2002). In this way, intersectionality can be viewed as a transformative power that empowers the voices and agencies of the marginalized. However, as intersectionality has traveled from black feminism to various disciplines, it has been accused of being depoliticized and stripped of this transformative power and its original ideas of social justice (e.g., Cho et al., 2013; Holman et al., 2021; Lapalme et al., 2020; May, 2015).

Intersectionality as an analytical approach examining different modes of discrimination that marginalized groups can experience. According to Crenshaw (1989), these can be due to: 1) either one of the disadvantages, 2) the sum of the disadvantages, or 3) the unique position of the disadvantages combined (i.e., not equal to the sum). The third mode of discrimination reflects the idea that power structures are interrelated and that marginalization needs to be understood in a holistic manner. This idea is often considered as the core tenet of intersectionality and as important to incorporate into public health (e.g., Bowleg, 2012).

Conceptual points of departure

Intersectional approaches

Considering the diverse views on intersectionality, the boundaries of intersectionality research are not given. Similar to the diversity found in health inequalities research with its three different epistemological camps, intersectionality research is being conducted from different ontological, epistemological and methodological perspectives and with different outlooks on social justice. In order to grasp the many ways of doing intersectionality research, different classifications have been suggested. For example, Lykke (2010a) derived three clusters of intersectionality research: explicit intersectionality that uses the particular concept of "intersectionality"; implicit intersectionality that attends to intersections without using the concept of "intersectionality" as the main framework; and intersectionality under other names, for example, transversal politics by Yuval-Davis (1999), which is a feminist approach that challenges identity politics yet embraces differences as an important point of departure.

Another classification of three intersectional approaches was provided by McCall (2005). This classification serves as the conceptual point of departure of this thesis and comprises three approaches with different philosophical underpinnings. They are named the intra-, anti-, and inter-categorical approaches and are based on how categories are viewed and used. In addition to these three, I have worked with a fourth approach which I have chosen to call the post-categorical approach. The four approaches also take different outlooks on social justice and contribute different knowledges and understandings about health inequalities.

For the cover story, I have restricted the analysis to the inter- and post-categorical approaches. However, I introduce all four approaches since they have developed through dialogue and relate to each other. They are all summarized in Table 1 in which they are outlined according to theoretical influences, ideas of social justice, and use of categories.

Table 1 Overview of intersectional approaches used in this thesis linked to their theoretical influences, ideas of social justice and use of categories

Intersectionality approach	Theoretical influences	Idea of social justice	Use of categories
Intra-categorical	Standpoint feminism, feminist empiricism, black feminism, postcolonial feminism, queer feminism.	Social justice through the voice and standpoint of marginalized groups.	Uses categories to define marginalized groups and analyze that standpoint but cautions against the disempowering effect of categorization.
Anti-categorical	Postmodern feminism and post-structural feminism.	Social justice through deconstruction of norms inhibiting rights and freedoms.	Critical of the use of categories.
Inter-categorical	Not defined but compatible with post-positivism and critical realism.	Social justice through actionable empirical descriptions of inequalities.	Recognizes the constructedness of categories yet uses them for analytical purposes.
Post-categorical	Post-constructivism (e.g., post-human feminism, material feminism, transcorporeal feminism).	Social justice by continuous reconstruction of ethically responsible ways of being.	Categories are both material and discursive, constructed and real at the same time.

The intra-categorical approach

The intra-categorical approach to intersectionality is grounded in standpoint epistemology which was developed as a response to the discrimination associated with positivist knowledge-making practices. To put it briefly, the positivist's objective value-free point of view was revealed to be profoundly biased in many ways. Feminists pointed out gender biases (e.g., Martin, 1991), black feminists pointed toward color biases (e.g., Hill Collins, 2002), post-colonial feminists pointed out Western biases (e.g., Mohanty, 1988) and queer feminists pointed out biases related to sexuality (e.g., Rubin, 2007). Instead of striving for an objective point of view, standpoint epistemology highlights the value of

including many perspectives and making them explicit in knowledge-making. Thus, in the intra-categorical approach, marginalized populations are viewed as having unique knowledges about their situation, including experiences of oppression.

The “intra” prefix refers to the intersectional location of marginalization as “in between” other more dominant population categories. To put marginalized groups at the center of knowledge-making practices is viewed as a way of promoting social justice in terms of both empowerment and redistribution of power. Health equity could then be achieved through equal participation and through action on the systems of oppression that are experienced and expressed by marginalized groups. An example from public health explored the experiences of discrimination among black lesbians and described how experiences of sexism and heteronormativity-related stress were contextualized through a perspective of racialization (Bowleg et al., 2003). However, a quantitative interpretation of the intra-categorical approach could focus on the diversity in health or in health determinants within the marginalized group without necessarily using a standpoint epistemology.

The anti-categorical approach

The anti-categorical approach to intersectionality draws on postmodern ideas that also challenge Western positivist knowledge-making practices and even all sorts of scientific claims of truth. Reality as we can know it is constructed through language and discourse which also puts limits on what we can think and do. Butler’s (2002) term “gender performativity” refers to the view that gender is not something from the start; it is something that we perform according to an idea of what it is to be, for example, a man or a woman. According to the anti-categorical approach, social justice and thus health equity can be promoted by revealing the constructedness and performativity of categories and by questioning discourses which limit the rights and freedoms of individuals.

The “anti” prefix in the anti-categorical approach refers to the rejection of categories since these are thought to be part of the construct of inequalities themselves. Examples from public health include studies that have questioned the heteronormativity or sex/gender construction and have described how such norms violate the identities and bodies that do not conform (Roselló-Peñaloza, 2018; Semp, 2011). It has been argued that an anti-categorical approach seems incompatible with quantitative methods (Bauer et al., 2021; Harari and Lee, 2021). Other

researchers (Persmark et al., 2019; Wemrell et al., 2017) have argued that the measurement of discriminatory accuracy can be viewed as an anti-categorical approach since it can undermine the use of categories when they do not provide added value for public health policy or practice.

The inter-categorical approach

The inter-categorical approach to intersectionality is based on a quantitative analysis of differences across population groups and how the differences may change depending on geographical and historical contexts. This approach was developed by McCall (2005) as a way of showing the benefits of interdisciplinary work. This approach is not fixed to a specific epistemology even though McCall suggested a critical realist stance that opposes the positivist idea of absolute objectivity as well as the postmodern idea of constructionism.

The “inter” prefix refers to the comparison across intersectional population groups, for example, differences between black women and white men. The inter-categorical approach recognizes population categories as socially constructed and not as essential or fixed; they are nevertheless provisionally used for analysis as “anchor points” (McCall, 2005). The knowledge-making practice in itself is perhaps not seen as contributing to social justice and health equity, but the results in terms of empirical descriptions of inequalities serve as important guidance when combined with theories of justice. In the area of public health, inter-categorical intersectionality seems to rapidly be gaining ground. Harari and Lee’s (2021) systematic review of quantitative approaches to intersectionality in health inequality research, including studies only on adults in the United States, found 46 studies which used an inter-categorical approach and explicitly referred to intersectionality.

The post-categorical approach

The approaches I have chosen to label as post-categorical draws on ideas clustered under the umbrella term post-constructionism proposed by Lykke(2010b). Post-constructionist ideas can be viewed as a continuation of the postmodern ideas of social constructionism but avoids complete relativism by recognizing the constructs as more than discourse (Lykke 2010b). This approach includes theories that both recognizes and criticizes a de/constructionist focus on discourse as well as re-introduces pre-discursive materialities as real. Instead of

highlighting the discursive aspect of for example gender it shows how gender is constituted by both our ideas about gender and the corporeal, that is, the discursive and the material cannot be separated which is what the term "material-discursive" refers to. However, the term post-constructionism brings together theories with different epistemological stances which should neither be confused nor collapsed (Lykke 2010b).

The "post" prefix refers to its foundation in post-constructionism. According to the post-categorical approach, categories are neither predefined nor fixed but are continuously emerging entanglements (intra-actions; e.g., Barad and DeKoven, 2001, Geerts and van der Tuin, 2013) hence they only exist as long as they are being performed. For example, what constitutes gender or any other category is not given, it is continuously made and unmade through material-discursive intra-actions. Examples of how the post-categorical approach has been used in research related to public health can be found in the field of sports in which it has been used to challenge dualist approaches to gender and to discuss what bodies can "do" rather than what they "are" (Fullagar, 2017, Linghede, 2018). In this open-ended understanding of the becoming of the world, social justice and health equity can be achieved through an ethically responsible way of being. This is what Barad (2007) describes as ethico-onto-epistemology.

Knowledge and knowledge making

In the cover story of this thesis, I explore how different intersectional approaches contribute to different knowledges and understandings of health inequalities. This "outsider" or meta-perspective on knowledge making draws inspiration from Science and Technology Studies (STS), an interdisciplinary field which studies the processes and outcomes of science (Felt et al., 2016). An important insight from STS is that the epistemic cannot be separated from political processes and that what counts as knowledge does not depend on the notion of "scientific rigor" per se but on processes of standardization, validation, and social acceptance (Collins and Pinch, 1998). Thus, if knowledge making is political, then it needs to be inclusive and accountable to the population given the goal of health equity. Since intersectionality encompasses a wide range of knowledge-making practices, I have explored whether or not it can contribute to diverse knowledges and understandings of health inequalities.

Aim

The overall aim of this thesis is to explore the possibility of using intersectionality as a tool for knowledge diversification within public health. The specific research question is:

What knowledges and understandings of health inequalities do the inter-categorical (studies I and II) and post-categorical (studies III and IV) approaches to intersectionality contribute and how are such contributions made?

Materials and Methods

"They [methods] act, they <u>mediate</u> between an object and its representations" – Mol (2002)

The individual studies I-IV of this thesis are grounded in public health sciences that have their own rationale and internal logic. In the cover story, I have turned them into study objects in order to answer the research question. This method can be understood as a way to study science or simply as a retrospective self-reflection. I understand the method of the cover story as the way in which I interfere with the individual studies. The means for interfering includes the research question, the writing, and contextualization. But the method could also be described as an analytical approach in which the material in terms of the individual studies is separated into components followed by a synthesis in which the components are reassembled, yet with a purpose to tell a different story. Specifically, the components are reassembled and the story is retold in order to show how certain intersectional approaches generate different knowledges and understandings of health inequalities which are related to the different ways to operationalize health inequalities and manage categories.

The individual studies of this thesis are summarized in Table 2. In brief, study I is a scoping review of quantitative international literature. The aim was to map and describe inter-categorical inequalities in mental health and to briefly analyze the analytical conceptualizations of intersectional inequality. Study II is a quantitative analysis of a population-based survey. The aim was to map inter-categorical inequalities in mental health in the Swedish adult population. Study III is a policy analysis of a government bill which suggests a national strategy on alcohol, drugs, tobacco, and gambling. The aim was to examine the equity perspective of the bill to identify its underlying assumptions and determine how the problem of health inequalities was framed. Furthermore, alternative ways of representing inequalities grounded in different intersectional approaches are outlined. Study IV is a post-qualitative inquiry based on participatory observations and interviews in the context of health promotion. The aim was to study the becoming of social divisions during health promoting activities for seniors.

Table 2 Overview of individual studies, their material methods and intersectional approach.

Study	Materials and methods	Intersectional approach
Study I	Scoping review based on quantitative international literature.	Inter-categorical
Study II	Quantitative analysis of a population-based survey of the Swedish adult population.	Inter-categorical
Study III	Policy analysis of a government bill suggesting a national strategy on alcohol, drugs, tobacco, and gambling.	Post-categorical
Study IV	Post-qualitative inquiry based on participatory observations and interviews in the context of health promotion.	Post-categorical

Inclusions and exclusions

In the process of working with the individual studies of the thesis as well as the cover story, choices were made regarding methods, materials, and outcomes. I want to raise some of these choices, including those I was not even aware of until they "had happened."

Regarding intersectional approaches, only the inter- and post-categorical approaches were explored as individual studies, while the intra-, and anti-categorical were only used as part of study III (policy analysis). Study I (scoping review) was initially thought to cover at least inter- and intra-categorical approaches. However, this was not deemed feasible, mainly due to the difficulty of developing a search strategy with enough precision covering both approaches. A search strategy with good precision is able to identify a reasonable number of relevant studies per number of irrelevant studies. In the end, we chose to focus on the inter-categorical approach since we found it easier to specify. This may have to do with the quantitative nature of the inter-categorical approach or because the research team had limited experience and insights into how to search for intra-categorical studies on health inequalities.

Study IV (post-qualitative inquiry) was initially planned as an anti-categorical approach. I wanted to do a qualitative study grounded in Barad's agential realism and thought such a study had to be classified as

an anti-categorical approach. However, during the mid-term seminar, one of the reviewers questioned whether it was correct to call it anti-categorical if Barad was to be used. Our discussion made it clear that intersectionality grounded in Barad was a continuation of the anti-categorical approach but was also so different that it should not be classified as such. However, it was not until I started writing the cover story that I linked the term post-constructionism by Lykke (2010b) to the terminology of McCall which gave rise to the name post-categorical. Similarly, study III turned out to be a post-categorical approach. This is at least my way of classifying the study given that it is grounded in the idea that the policy is in part constituting not only discourse but also subjects and materialities.

Regarding health outcomes, the main focus was initially on mental health, viewed as certain sets of symptoms that can be quantified, measured, and then defined. Based on this quantitative approach, different types of mental health outcomes can be separated from each other. For example, common mental disorders like depression and anxiety are separated from substance use disorders and addiction. Initially, the individual studies were intended to focus on common mental disorders and symptoms, but since Sweden does not have a specific mental health policy that we could use for study III, the study was expanded to include substance use disorders and addictions. The closest policy document on mental health that we could find was the recently proposed government bill suggesting a new strategy on alcohol, drugs, tobacco, and gambling (Government of Sweden, 2021). Finally, the symptom-based quantitative approach to defining mental health was not possible to adopt in study IV given its methods of inquiry. In the end, this thesis is about health in general and not specifically physical, mental, or social health.

Results

Knowledge making through the inter-categorical approach

The inter-categorical approach to intersectionality generate knowledges about health inequalities as quantitative mean differences in health outcomes between population groups that have been categorized according to combinations of inequality dimensions. This knowledge has implications on how health inequalities are understood and on what solutions to such inequalities are possible to think of. I will now describe this in further detail.

Materials and setting

A relatively large material is preferred to generate knowledge according to the inter-categorical approach, for example, in the form of survey or register data. This is especially true if few observations of the dimensions of inequality studied are thought to be found in the sampling frame. Large sets of data are also required to generate results with a small degree of uncertainty. As the number of individuals at each intersectional position gets smaller, the higher the degree of uncertainty tends to be. This makes it difficult to apply the inter-categorical approach with rare health conditions or population categories with few members. Thus, the choice of outcome and the dimension of inequality to be studied in an inter-categorical approach is not only dependent on the severity of an outcome or the relevance of an inequality dimension but also on what the method of analysis allows. The dimensions of inequality considered in study I (scoping review) and II (survey analysis) correspond to established socio-structural factors that are of importance for health, including gender, education, income, occupation, country of birth, and sexual orientation. In the scoping review, individual studies have also included dimensions of ethnicity and racialization. We also searched for studies that included dimensions of religion, but none were found.

In Study I, the selected individual studies (n=20) were based on survey data covering adult populations. Study II was based on the cross-sectional population-based survey Health on Equal Terms which was administered by the Public Health Agency of Sweden and Statistics

Sweden. It is a structured survey that requires the respondent to answer according to predefined alternatives. The questions gather background information on the respondents, such as age, sex, marital status, lifestyle factors and health status. To yield a large enough sample size, yearly random samples of the Swedish population (16–84 years) between 2010 and 2015 were pooled. The response rate varied between 47% and 60% which corresponded to annual samples of N = 6,000–12,000 and yielded, in the end, an effective sample size of N = 52,743.

Operationalizing health inequalities

In study I (scoping review), and study II (survey analysis), health inequalities were operationalized as quantitative mean differences between population groups at certain intersectional positions. In study II and in the individual studies of the scoping review, these positions were constructed through the cross-classification of inequality dimensions. In study II, the dimensions of inequality (gender, education, income, occupation, country of birth, and sexual orientation) were dichotomized into a disadvantaged and a privileged position based on the understanding that women, foreign born, individuals with low education, income, manual occupation, and non-heterosexuals inhabit a relative position of social disadvantage, whereas men born in Sweden, individuals with high education, high income, non-manual occupations, and heterosexuals inhabit an advantaged social position. The six binary dimensions of inequality were then cross-classified so that 15 intersectional spaces containing four different intersectional positions were obtained: one with a double privilege, two positions of mixed privilege and disadvantage, and one with a double disadvantage. In addition, all the binary dimensions were combined into 64 intersectional positions which covered the entire intersectional space of the six inequality dimensions under consideration.

In both studies I and II, the concept of health was limited to mental health. There is a positive aspect of mental health, for example, mental wellbeing, but the studies mostly refer to poor mental health in terms of symptoms and disorders. In study I, the outcome was limited to common mental disorders such as depression, anxiety, or post-traumatic stress disorder and did not include, for example, substance use disorders or addiction. One of the eligibility criteria in the review was that mental health had to be measured with a validated instrument or through a diagnostic interview. In study II, the mental health symptom scale GHQ-12 was used, which is based on a set of questions regarding a range of

symptoms. The respondent replies in terms of discrete and structured answers (e.g., numbers on a scale 1 to 5) that in the end are summarized to a total score indicating the level of mental health according to predefined cut-offs.

In summary, following the inter-categorical way of operationalizing health inequalities, a rather chaotic reality in which individual identities, backgrounds, attributes, and health conditions do not always fit into neat categories is organized so that they do indeed fit into such categories. This is accomplished through processes of standardization in which continuous and coherent wholes are decomposed into structures that can be treated as variables and summarized into something that can be defined as solid and coherent categories, for example, “a woman,” which can then be compared to other categories.

Analysis

In both studies I (scoping analysis) and II (survey analysis), we used the quantitative measures of intersectional inequalities proposed by J. W. Jackson, et al. (2016) and estimated three types of intersectional inequalities: joint intersectional inequality, referent inequalities, and excess intersectional inequality. In study I, the terminology/typology was used to classify and categorize measures of intersectional inequality from individual studies, while in study II, it was used to estimate intersectional health inequalities. The joint inequality is the risk difference (prevalence) between the position of double disadvantage and the position of double privilege. The referent inequality is the risk or prevalence difference in health between a position of mixed privilege and disadvantage and the position of double privilege. The excess intersectional inequality is the portion of the joint inequality that is not attributable to the referent inequalities and is equivalent to an additive interaction effect; it is a way of measuring the unique effect of an intersectional position on health. In both studies, we referred to this effect as either intersectional synergism (i.e., when the joint inequality is greater than the sum of its parts) or intersectional antagonism (i.e., when the joint inequality is smaller than the sum of its parts). In this way, the interrelatedness of the dimensions of inequality could be examined.

In study II, the prevalence of poor mental health was estimated for all 64 of the intersectional positions. The joint intersectional inequality, referent inequalities, and excess intersectional inequality were estimated

for all 15 intersectional spaces. In addition, discriminatory accuracy was estimated with the use of the area under the receiver operating characteristic curve (Pepe et al., 2004) to provide a value that indicated whether the variables in the model discriminate between individuals with poor mental health and those with good mental health. In total, three models were used: a "base-line" model that included mental health adjusted for age and survey year, a second model that included age and survey year as well as the six (binary) dimensions of inequality, and a third model that included age and survey year as well as all 64 of the intersectional positions, with the most privileged serving as a reference.

Ethics

Ethical approval was not considered to be relevant to knowledge making based on the literature review from study I (scoping review), primarily because the study did not include the collection or management of personal data. The ethical aspects related to data collection, documentation, and storage were understood to be, in general, "good research practice." Such general principles included telling the truth, giving an open and honest account of the research methods and results, and responsible organization of the research material. The review was also the registered in Prospero (No 2017:CRD42017064280) as a way of ensuring systematic and transparent data collection and analysis and to prevent data fishing. This is grounded in the deductive logic of hypothesis testing in which the study is designed to confirm or reject the hypothesis.

To generate knowledge based on the material of study II (survey analysis), ethical approval had to be sought, even though we, as a research team, were not involved in the data collection or in contact with the participants in any other way. But since the study involved the management of personal data, a personal data processing agreement was set up between Umeå University and the Public Health Agency of Sweden. After the Regional Ethical Board in Umeå approved the study (approval no. 2017/114–31), relevant data was provided by the Public Health Agency. In the application, we raised the potential risk of labeling or stigmatizing certain population groups because of a potentially high prevalence of poor mental health. We also noted the potential advantage in pointing out such population groups since such results could be used to advocate for more resources.

Knowledges about health inequalities

Now let's see what knowledges about health inequalities are contributed by the inter-categorical approach.

Health patterns across dimensions of inequalities
The results from study II (survey analysis) showed that the distribution of poor mental health across unidimensional positions followed a traditional social pattern, that is, a higher prevalence of poor mental health in positions with low education, low income, and manual occupation as well as among women, foreign-born, and non-heterosexuals. Across the intersectional groups, the distribution followed a similar pattern with the doubly disadvantaged presenting a higher prevalence of poor mental health than the doubly privileged. However, there were exceptions to this pattern. The doubly disadvantaged groups did not always present a higher prevalence than the middle groups with a single disadvantage. For example, despite double disadvantage, the group with manual occupation and low education did not have the highest prevalence of poor mental health; rather, the singly disadvantaged with manual occupations and high education did. In study I (scoping review), similar exceptions were found in one of the individual studies from Sweden (Lundberg et al., 2009). The group with low education and non-manual occupation had the lowest prevalence of depressive symptoms, and the group with low education and manual occupation had a lower prevalence than the group with high education and non-manual occupation.

Thus, the results highlight that the inter-categorical approach generates knowledges about health patterns that complement or contradict knowledges about health patterns grounded in a unidimensional approach. Knowledges about intersectional health patterns give some insight into the relationship between the dimensions of inequality, but the inter-categorical approach allows for further examination of these relationships in terms of intersectional synergism or antagonism.

Relationships between dimensions of inequalities
The results from study I showed that the most frequent analytical approach cited in the individual studies was the use of the additive interaction analysis to explore intersectional synergism or antagonism. In study I, results from the interaction analyses were contradictory across the studies. For example, results from two of the studies showed that black women in the United States had a lower risk for depressive

and anxiety symptoms (Gibson et al., 2016; Green and Benzeval, 2011), despite their double disadvantaged position. Furthermore, in study II, the excess intersectional inequality, which indicated intersectional synergism or antagonism, was mostly non-significant or demonstrated inconsistent directionality. The only synergistic effect was found in the intersectional space of income and sexual orientation. This effect made up 25% of the overall inequality between the doubly privileged (high income and heterosexual) and the doubly disadvantaged (low income and non-heterosexual). Intersectional antagonism was found in the intersectional space of education and sexual orientation, education and occupation, and gender and income.

Thus, the results highlight that the inter-categorical approach generates knowledges about the relationship between dimensions of inequality, that is, whether they interact to increase or decrease health inequalities or do not interact at all. The inter-categorical approach also makes it possible to obtain knowledges regarding the relative contributions of inequality dimensions across the overall inequalities in mental health (the joint inequalities). However, none of the studies in study I reported results relative to this aspect. Nevertheless, results from study II showed that the dimension of income was dominant across all intersectional spaces, thereby contributing more to the overall inequality than the other dimensions. Sexual orientation was dominant across all but one dimension, while education showed a relatively small contribution across intersectional spaces.

In study II, we also estimated the discriminatory accuracy which contributes with knowledges about how well the dimensions of inequality actually discriminate between those with poor mental health from those with good mental health. The discriminatory accuracy is not an inter-categorical approach per se, but yield important information about the inter-categorical analysis. The results (from model 3) showed that beyond age and survey year (model 1), the dimensions of inequality made a small contribution in discriminating between individuals with good mental health and individuals with poor mental health.

Understandings and implications

Next, I will briefly raise our main interpretations of the knowledges generated through the inter-categorical approach in studies I (scoping review) and II (survey analysis). The results showed that health inequalities are rather unpredictable due to exceptions that were found

to the traditional social patterning of mental health along with the inconsistent and sometimes contradictory findings regarding intersectional synergism and antagonism. We did not interpret this instability to mean that overarching power structures were unstable but rather that the processes in which they interacted can be expected to give rise to population health patterns in unpredictable ways. This implies that it is important to build responsive systems that regularly monitor intersectional inequalities across different intersectional positions and contexts so that interventions can be directed and adopted to suit the ones most in need.

However, the idea of targeted interventions is based on the idea of high discriminatory accuracy. In study II, the dimensions of inequality and their combinations were nevertheless found to have a low discriminatory accuracy. This means that targeted interventions may have a limited effect and that they could unnecessarily risk stigmatization of the targeted group. Instead, interventions should target the population as a whole.

Knowledge making through the post-categorical approach

The post-categorical approach to intersectionality generate knowledges about health inequalities as processes in terms of, for example, oppression or marginalization. Knowledges generated through the post-categorical approach are likely to have other implications than those grounded in the inter-categorical approach.

Materials and setting

There are probably few restrictions on what can be used as a source of material for generating knowledges according to a post-categorical approach. In the post-categorical studies of this thesis, two very different types of material were used. In study III (policy analysis), a government bill proposing a national strategy on alcohol, drugs, tobacco, and gambling by the Swedish government (Government of Sweden, 2021) was used, and in study IV (post-qualitative inquiry), participatory observations and interviews in the context of health promoting activities yielded the material. Thus, the material in study IV is less coherent than the material in study III and more like an entanglement of modes of inquiry, participants, activities, environments and so on.

The government bill is a policy document that suggests a number of intervention areas at different levels of society adopting a life course perspective ranging from the time of pregnancy to school, working life, and retirement. As part of an idea of mainstreaming an "equity lens," the bill includes a description of a "gender and equity perspective" to be applied to all of these intervention areas. This perspective can be described as an empirical background based on population statistics, without any references to principles of ethics or theories of social justice. However, it provides two reasons for targeting health inequalities. The first reason is "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health," quoting the convention on economic, social, and cultural human rights from 1966, and second, "to close the avoidable health gap in a generation," referring to the overall aim of the current Swedish public health policy (Government of Sweden, 2018).

Study IV was situated in meeting places supported by a municipality where organized health-promoting activities for seniors occur. The activities considered in the study were card games, physical exercise, qi-gong, dancing, and language café. All seniors in the municipalities were welcome to participate in the activities, and the language café was open to everyone regardless of age. Some of the meeting places were located in nursing homes and some in residential areas which, in particular, housed seniors, whereas the language café was located in a library. I attended the activities during a period between May to December 2018 with a break during July and August. Notes were mostly written after participation. Individual interviews were used to follow up on certain events and to allow participants to speak more openly about their perceptions of the meeting places and the health-promoting activities. Focus groups were also arranged to allow discussions among the participants related to the places and activities. Interviews and focus groups were audio recorded and transcribed into text. The material from the interviews and focus groups was used to gain a deeper understanding of the processes studied but not to "identify" them.

Operationalizing health inequalities

In studies III (policy analysis) and IV (post-qualitative inquiry), health inequalities were operationalized as processes of marginalization and social division. In study III, processes of marginalization grounded in the equity perspective of the government bill were suggested. These processes were tied to the power and agency of the policy to shape not

only discourses but also groups of people and material realities. This means that the policy has effects beyond the problem it intends to solve. These effects were classified as discursive, subjectification, and lived effects in line with Bacchi and Goodwin (2016). Discursive effects have an impact on the way we think about a particular issue or phenomena and can be understood as following from the "limits of what can be thought or said" about it. Subjectification is the process of producing certain "subjects," and has an effect on how people think about themselves or a group of people and who are viewed as responsible for a problem. Lived effects follow from the two previous effects and include behaviors, feelings, or material conditions.

According to the post-categorical approach, dimensions of inequalities and population categories are neither stable constructs nor essentially real; they are dependent on what and who defines them. According to agential realism (Barad, 2007), which explicitly informed study IV, phenomena (such as health inequalities) are produced by material-discursive intra-actions, that is, the intra-actions are material and discursive at the same time. The term intra-action is not only supposed to dissolve their separation but also to dissolve the idea of objects preceding their entanglement. In the case of health inequalities, this means that there are no fixed or stable dimensions of inequality. Instead, each dimension of inequality needs to be understood as situated in its particular becoming. The phenomena of health inequalities thus depends on the knowledge-making practice defining it. In study IV, health inequalities were considered with respect to practices that included or excluded participants from the health promoting activity. Dimensions of inequalities were not predefined but were produced by the intra-action of the researcher and the particular situation. That is, only the inclusions and exclusions that I could observe were considered.

In contrast to studies I and II, neither study III nor IV defined health through a symptom-based procedure. Instead the health dimension was defined through context. In study III, the context is a bill specifically concerning health issues related to alcohol, drugs, tobacco, and gambling. In study IV, the context is health promoting activities for seniors. The activities were thought to be health promoting in terms of physical, mental, and social health and were not designed to promote or prevent a particular health outcome. Thus, the operationalization of health inequalities in studies III and IV as the underlying processes of marginalization and inclusion and exclusion are more loosely connected to a health outcome.

Analysis

In study III (policy analysis), we used the analytical questions proposed by Bacchi and Goodwin (2016), which are found in appendix A, together with the intra-, anti-, and inter-categorical intersectional approaches as a critical lens to examine the bill on alcohol, narcotics, tobacco, and gambling. By using these together, we examined the underlying and implicit assumptions of the gender and equity perspectives of the bill as well as the discursive, subjectification, and lived effects such assumptions may have. The three approaches to intersectionality were not only used to point out underlying assumptions and their effects but also to provide alternative knowledges on health inequalities so that different ways of operationalizing inequalities could be compared and contrasted.

Study IV (post-qualitative inquiry) used an overall analytical process that can be described as "thinking with theory." This is a concept by A. W. Jackson and Mazzei (2013) as informed by the ideas of knowledge-making practice as intra-actions (Barad, 2007). Thinking with theory can be described as an ongoing process of inquiry and entanglements including, for example, the researcher, a text or theory, the study participants, the study environment, the field notes, and interview transcripts. In this way, there are no predefined or clear boundaries between subjects and objects or between the theoretical and the empirical. This is a central idea of post-qualitative inquiry, which should not be understood as a method with predefined steps (Lather and St. Pierre, 2013, St. Pierre, 2018, 2021).

Ethics

Ethical approval was not considered to be required for study III (policy analysis), since it neither involved human research objects and personal data nor did it produce knowledges about population patterns that could be stigmatizing. However, for study IV (post-qualitative inquiry), we sought ethical approval by the Regional Ethical Board in Umeå (approval no. 2018/74-31). In the application, the ethical issues we raised had a lot to do with asking for permission and letting the study participants choose whether they wanted to be part of the study or not. As the one who engaged in the participatory observations, I had to continuously be aware of and reflect on what was necessary to uphold ethical conduct. The ethical dimensions were both formal and informal. It was about asking for permission and being sensitive to what the participants

thought about the study. When I started the participatory observations, I always tried to be open and clear about intentions so that participants could ask questions, but due to the studies exploratory character, it was not possible to be clear about its expected outcomes.

A general remark about the ethical dimension of study IV is that ethics are understood as an integral part of the knowledge-making practice. Since "things do not merely exist" but become through the knowledge-making practice, researcher accountability is central. This is emphasized by the term ethico-onto-epistemology suggested by Barad (2007). In practice, it means being aware of ones intra-actions in the sense of understanding and doing knowledges in an ethical way and taking responsibility for them.

Knowledges about health inequalities

Now let's see what knowledges about health inequalities the post-categorical approach contributes.

Processes of marginalization and exclusion
Results from study III (policy analysis) showed that the particular type of knowledge used to describe the gender and equity perspectives of the government bill that proposed a Swedish strategy on alcohol, drugs, tobacco, and gambling (Government of Sweden, 2021) had a quantitative and unidimensional emphasis. Categorization and labeling of population groups were also found to be important cornerstones in how inequalities were represented. The quantification of differences in behaviors and health outcomes linked to alcohol, narcotics, tobacco, and gambling between population groups was a central recommendation of the gender and equity perspective of the bill. The strong emphasis on numbers was interpreted as an ambition to be "neutral" and "objective" and was grounded in an epistemological tradition in which science is supposed to reflect "the truth," that is, as in reflecting the essence of a study object. However, we argued that the tendency of such an epistemological stance to disqualify other epistemologies as "subjective," "biased," or "false" can be seen as a type of marginalization in which other voices and standpoints are ignored.

Further, inequalities in health were found in study III, mostly described as unidimensional differences between population groups. We interpreted this as an either–or way of thinking, possibly supporting the notion of an "oppression Olympics" in which population groups compete

to be “the most disadvantaged” and thus win access to limited resources. This, in turn, may work in an interlocking way for individuals situated in intersectional positions that end up in between two population categories without being able to choose sides or even identities. It may also create a risk that health inequalities could be obscured and that dimensions of inequalities could be conflated with their causes, ultimately essentializing population categories. The use of population categories to measure and describe inequalities was particularly discussed with respect to the labeling of certain population groups as “frail” or “vulnerable.” Even though “being frail” may provide access to promotion and prevention, care and rehabilitation, it may be disempowering for individuals who may reproduce a “frail” subject. However, any analytical strategy in which one or more groups are compared to a “norm” may be a mechanism of marginalization itself since those not being the norm become the “others.”

The results from study IV (post-qualitative inquiry) showed how particular practices included or excluded participants from the activities. For example, during a social activity involving conversations and word-games over a cup of coffee and a snack (in Swedish: “fika”), it became obvious that participants belonging to a certain religion had difficulties participating in the activity during their fasting. Even though the managers at the meeting place sites later expressed their concerns about this, nothing was done to discontinue the exclusion during the event. Another example observed concerned a sports camp that had been tailored and targeted to foreign-born seniors. This was done because the previous sports camp that had been open to all seniors had attracted only or mostly Swedish born individuals. However, when the sport camp was promoted during the language café, a foreign-born participant strongly expressed that she did not like to be lumped together in a group of immigrants. She wanted to get acquainted with Swedish people so that she could learn Swedish and learn about Swedish culture. This left the management with the difficult trade-off between targeting and not targeting the sports camp (which was a highly appreciated activity among those who had tried it).

Thus, the results from studies II and IV highlight that the post-categorical approach generates knowledges about processes underlying health inequalities, such as marginalization and exclusions, further highlighting difficult trade-offs with respect to quantification and categorization. However, the post-categorical approach also generates knowledges about alternatives which disrupt and challenge the processes of marginalization and exclusion.

Processes of resistance and inclusion

The results of study III (policy analysis) showed how intersectional alternatives could challenge the assumptions underlying the objectivity of numbers. For example, the standpoint epistemology of the intra-categorical approach can be used to make knowledge making more inclusive and empowering, and the anti-epistemological stance of the anti-categorical approach can be used as a means of change by raising awareness of the constructedness of objectivity itself and as a liberating force that deconstructs marginalizing social norms. Finally, the inter-categorical approach could challenge the assumption of objectivity without rejecting quantification by highlighting the contingent meaning of categories and inequalities across settings.

Results in study III also showed how intersectional alternatives could challenge the unidimensional approach found in the bill. For example, the intra-categorical approach may go beyond the description of differences in health by examining underlying processes and structural drivers of health inequalities like discrimination. The anti-categorical approach may raise awareness of how essentialization enables discriminating practices in the first place. And the inter-categorical approach may enable a multidimensional analysis and thus more complex understanding of inequalities in health. Results from study III also showed that counterproductive consequences of categorization could be alleviated through intersectional approaches. For example, intra-categorical intersectionality can be used to let marginalized populations speak for themselves, empowering their voices. The anti-categorical approach can be used to raise awareness of the social constructedness of population categories and can, for example, serve as a liberating force for those who wish to take a step out of the stereotype. Finally, the inter-categorical approach can be used to nuance the impression of homogenous population categories, particularly by showing their shifting significance for health across geographical and historical contexts.

Results from study IV (post-qualitative inquiry) also showed how exclusions were disrupted or avoided by reconfiguring the meaning of doing gymnastics, qigong, or playing cards. For example, during gymnastics and qigong, chairs and walkers were involved, and during card games, the rules were slightly modified and the participants helped each other so that everyone could participate.

Understandings and implications

Now I will briefly raise our main interpretations of the knowledges generated through the post-categorical approach in study III (policy analysis) and IV (post-qualitative inquiry). My interpretation of the results is that such knowledges provide a way of thinking that can be used to transform discriminatory practices and do things differently. By putting the public health professional, including policy makers, at the center of attention, the problem becomes situated within rather than outside. The strong notion of performativity carried by the post-categorical approach could be encouraging and empowering, contributing with a sense of agency (and urgency) to act. However, too many options could also be paralyzing. By highlighting that things can be done differently and that no one option may be optimal, it could enable transparent deliberation regarding difficult trade-offs. Such deliberation could, of course, end up in the use of a targeted intervention toward a "high risk group" identified through an inter-categorical approach despite the risk of stigmatizing or marginalizing this group.

Discussion

This cover story explores the possibilities of intersectionality as a tool for knowledge diversification within public health. It specifically illustrates how certain intersectional approaches generate different knowledges and understandings about health inequalities by involving different ways of operationalizing inequalities and managing categories. This was done by retelling the individual studies (I-IV) of this thesis, describing their process of inquiry, and their results. In the discussion, I summarize the findings and reflect about importance of knowledge diversity in the context of public health decision making. I also raise limitations pertaining to the thesis, propose recommendations, and draw conclusions.

Knowledge diversity through intersectionality

In summary, the inter-categorical approaches applied in studies I and II generated knowledges about health inequalities as quantitative mean differences between population groups. The quantitative approach is well established in health inequalities research but is often used to quantify health along one dimension of inequality. Thus, the inter-categorical approach adds degrees of complexity through its multidimensional analysis that includes more than one inequality dimension. This kind of multidimensional analysis contributes knowledges about mental health patterns that were otherwise obscured by the unidimensional approach. Furthermore, the inter-categorical approaches generated knowledges about the relationships between dimensions of inequality, whether they interact to increase or decrease the health inequality or whether they do not interact at all. Results from study II also showed that the inter-categorical approach may generate knowledges about the extent to which the different dimensions of inequality contribute to the overall health inequality. These are important knowledges which correspond to key tenets of intersectionality, thereby providing insight about the underlying causes of inequalities: are they found in one dimension, in the sum of dimensions, or with respect to their interaction? The results highlighted unexpected patterns and unpredictable inequalities in mental health. This implies the importance of building responsive systems that regularly monitor inequalities across different intersectional positions and contexts so that services can be provided to those most in need.

The post-categorical approach to intersectionality applied in studies III and IV generated different types of knowledges of health inequalities which have more to do with their underlying processes. It contrasts the inter-categorical knowledges and understandings of health inequalities by putting public health professionals, including policymakers, at the center of attention by illustrating their role in (re)producing health inequalities. For example, the power of policy to produce "frail" or "vulnerable" subjects by using labeling and how any analytical strategy in which one or more groups are compared to a "norm" may itself be a mechanism of marginalization. It also illustrates how marginalizing practices could be avoided or disrupted, for example, through the modification and reconstruction of the environment, norms, and rules. Since the post-categorical understanding of knowledge making is the same as reality making, it provides a transformative way of thinking by providing the possibility that things can be done differently. Hence, the way to health equity according to the post-categorical approach is not necessarily by identifying groups with high risk or poor health so that resources can be deployed according to need but by directing attention to the mundane practices of public health in which marginalization and resistance become.

Knowledge diversity and health equity

Knowledge diversity is important for health equity because our knowledges and understandings of health inequalities shape what policies and interventions are viewed as relevant, reasonable, or even possible to think of. While the inter-categorical approach can provide policy-relevant knowledge which highlights health needs, it can at the same time be criticized for reinforcing social divisions by operationalizing health inequalities through categorization and the comparison of population groups. Thus, it can be criticized for appropriating the meaning of belonging to a certain group. Furthermore, it may risk the misinterpretation of population categories as risk factors and thus spur determinism and stigmatization. This could be particularly important to consider in the case of mental health since mental disorders carry stigmas, that is, an individual with a mental disorder may be seen in a negative way because of their illness. Individuals with mental disorders may also experience discrimination, that is, they may be treated in a negative way because of their illness. Exposure to discrimination has, in turn, been found to be a risk factor and predictor of poor mental health (e.g., Krieger, 1999; Meyer and Frost, 2013), It may also be noted that there are health conditions other than mental

disorders that carry stigma, such as HIV, other sexually transmitted infections, and obesity.

The post-categorical knowledge of health inequalities as processes of marginalization, resistance, exclusions, and inclusions may give less explicit direction to public health prioritization but highlights difficult trade-offs for which there are no right answers on how to resolve them. It complements the inter-categorical knowledge and understanding by redirecting the attention from high-risk or vulnerable groups "out there" to processes of public health policy, research and practice "in here." In this way, knowledge diversification makes it possible to work for health equity within these different layers. Additionally, knowledge diversity can be used as a resource instead of viewing the diverse knowledges and understandings as in conflict (Hazard et al., 2020).

The recognition of knowledge diversity may be particularly important in the context of public health decision making. There are many relevant models of public health decision making, but the evidence-based model is probably the most widely implemented in the Swedish three-tier public health system of national, regional and local levels of decision making (e.g., National board of health and welfare, 2020; here, I refer to the context of public administration of public health rather than the governmental or party–political context of decision making). Nevertheless, there is a general critique that the evidence-based decision-making model is trapped in a positivist paradigm (e.g., Greenhalgh and Russell, 2009) which becomes particular problematic in the case of health equity (Kirkham et al., 2007). Thus, the idea of knowledge diversity with respect to health equity seems incompatible with the evidence-based model despite efforts to make it more inclusive (e.g., Armstrong et al., 2014, Petticrew and Roberts, 2003). For example, the matrix of evidence suggested by Petticrew and Roberts (2003) does not make explicit how or when to use transformative paradigms, such as critical or empowering knowledge making, which are of particular importance for health equity.

In the Swedish context of national guideline development on lifestyle habits, recent empirical investigation has found a conflict between what was considered as important knowledge for public health and the format of evidence-based guideline development (Lagerlöf et al., 2021). This adds to the need to reconstruct the evidence-based model to accommodate and recognize epistemological and ontological multiples. Such recognition has been associated with a "need for flexibility," that is,

the consideration of different ontologies and epistemologies depending on the situation and nature of the problem (Sager and Pistone, 2019).

Even though there are many ways to reach such flexibility, this thesis suggests engaging with the concept of intersectionality. This thesis illustrates that intersectionality can be used as a map of philosophical landscapes of importance to visit in the case of health inequalities. I suggest that the use of such a map could release tension from the evidence-based straitjacket and nurture epistemological and ontological flexibility. However, challenges to the inclusion of diverse knowledges to the evidence-based model has been discussed with respect to guideline development (Wieringa et al., 2018). The discussion has mainly focused on knowledge integration, which poses a great challenge since diverse knowledges tend to conflict. Even though knowledge integration can be of great value, the map I suggest simply provides a better orientation so that the multiple knowledges and understandings of health inequalities can be recognized and considered in decision making.

Limitations

Methodological considerations

I have chosen to raise three methodological issues. These have to do with: 1) the study process, 2) writing style and reporting, and 3) the generalizability of the results across health outcomes.

Regarding the study process, the idea of turning the individual studies into the study object came after the individual studies had been completed and I was trying to come to grips with the cover story. The material I had close at hand to carry out this transformation were the study reports (published and unpublished manuscripts) and the applications for ethical approval for studies II and IV. In retrospect, it would have been valuable to generate more material regarding the research processes. Furthermore, the fact that I observed my own research process and not someone else's could be a limitation since I could have knowingly or unknowingly censored myself. The fact that I carried out the research without observing myself could also be seen as a strength because then any censoring would only have been possible in retrospect. Nevertheless, as far as I know, I have not made any arrangements of the material for the sake of the story told in this cover.

The reporting and writing style of the cover story may not even be viewed by some as a methodological issue. But within the field of feminism in which intersectionality is also rooted, this is an important dimension. Lykke (2010a) discussed this in terms of the importance of shifting boundaries between academic and creative writing practices, particularly in order to undo the "god-trick" (Haraway, 1991) which gives the illusion that there is an objective knower. I have tried to avoid an omniscient narrator voice, and even though it may appear in some parts of the text, I believe the text is associated with other limitations. These have to do with other aspects of the academic writing style. Knowledge diversity and health equity do not only come with different ways of doing knowledge but also with different ways of writing and conveying that knowledge. This is the reason I think both the structure and the writing style of this cover story may restrict or inhibit the full conveyance of the argument about knowledge diversity with respect to health equity since I find the text to be more complicated than necessary. The cover story follows a traditional IMRaD structure (Introduction Method Results and Discussion) and the fictive style of reporting the results as "scientific discoveries." This academic style of writing is something I have practiced throughout my academic education and I regret having put too little effort in pushing for a different style. Even though the academic reader may find it easier to read and understand when the text conforms to the traditional structure, it is a way of excluding other readers that find a more creative style of writing or reporting to be more accessible. A thesis on intersectional knowledge diversity for health equity should probably have paid more attention to this dimension of marginalization.

The last limitation to be raised has to do with the generalizability of the results across health outcomes. The thesis involves studies of intersectional inequalities in health with different health outcomes considered in each of the different studies. Nevertheless, the general argument raised in the cover story – that intersectionality is a useful tool for knowledge diversification with respect to health inequalities – is likely to be valid for health inequalities in general. However, the specific results of the individual studies may not necessarily be generalizable to other health outcomes that are likely to be present according to different patterns. This particularly applies to studies I and II in which the health outcomes were well defined.

The intersectional approaches

In retrospect, it may seem logical to have designed each of the studies I–IV according to one of the four intersectional approaches, but as it turned out, the focus on the inter- and post-categorical approaches reflects a journey in which I learned by doing. However, given the importance of black feminism to intersectional thinking, I particularly regret that neither of the individual studies used an intra-categorical approach grounded in such theories. This means that my thesis lacks the empowering participatory element of intersectional knowledge making grounded in standpoint epistemology.

The classification of intersectional approaches may be criticized for reducing and simplifying the concept and field of intersectionality. However, given the inherent complexity of intersectionality, some initial simplification may be needed to provide an entry point and a foundation upon which further complexity can be built. The individual studies used to explore different intersectional approaches are not exhaustive by any means, they just represent one of many ways. A risk of using the classification is that of categorization in general; that it may obscure the diversity of approaches within each branch. Furthermore, the classification as outlined by McCall (2005) may soon be outdated if it is not modified given the expansive phase of quantitative intersectionality in which new methods are rapidly being added (e.g., Evans et al., 2018; Fehrenbacher and Patel, 2020; Merlo, 2018; Scheim and Bauer, 2019).

The power of knowledge

The underlying presumption of this thesis that knowledges and understandings of health inequalities have implications on what policy options are viewed as relevant, reasonable or even possible to think of can be criticized for paying too much attention to the power of knowledge. However, this criticism applies mainly to the view of knowledge as something fixed that can be found and then implemented. The power of knowledge grounded in an idea of ontological politics does not lie in the strength of the evidence but in the way we do evidence. This is discussed further by Rhodes and Lancaster (2019), who outlined a framework for conceptualizing interventions as evidence-making intra-ventions.

Recommendations

Policy and practice

It is not obvious how knowledge diversity could be managed and used as a resource when presenting almost endless choices of knowing. Making the options at hand more explicit could be a solution, specifically, in situations of formal decision making by health agencies and social services concerning health inequalities. However, it would be inhibiting and unreasonable to think of every second of our being in the world as a critical decision of how to be. In my view, intersectionality can not only be used as a tool for knowledge diversification but also as a "thinking technology" (Haraway, 2004), that is a method, to achieve ways of being that are sensible to the very idea of knowledge diversity. In the context of evidence-based decision making, a tool to support this process would be a culturally sensitive way of initiating such engagement.

For funding agencies that provide funds to health inequalities research, it is essential to recognize the importance of knowledge diversity and to promote transdisciplinary knowledge making. As the study by Garthwaite et al. (2016) showed, health inequality researchers often engage in boundary work, arguing about how and why their knowledge and understanding is better than others. This does not capitalize on knowledge diversity as a resource but is likely to be an obstacle for concerted action on health inequity.

Future research

Intersectionality in health inequalities research is being used more and more (Bauer et al., 2021; Ghasemi et al., 2021; Harari and Lee, 2021). Other studies have pointed to the importance of engaging in both descriptive intersectionality, which focuses on patterns of health inequalities, and analytical intersectionality, which focuses on underlying causes of health inequalities (Bauer et al., 2021; Lapalme et al., 2020) and the need to adopt quantitative, qualitative, and mixed-methods approaches (Bowleg and Bauer, 2016; Fehrenbacher and Patel, 2020). This study adds to this list of recommendations for intersectional health inequality research the need to use different intersectional approaches with different research stances in terms of ontology and epistemology, regardless of methods. In my opinion, it also seems particularly important in the case of health inequalities that participatory, co-producing modes of knowledge making are considered, given their transformative power. It is especially important in the context of decision making in which this kind of knowledge is traditionally excluded or not equally valued. This idea of democratic and equitable knowledge-making practices could draw further inspiration from post-normal science (Funtowicz and Ravetz, 1993) which suggests a kind of extended participation in decision making. Specifically, I would like to see future research that recognizes the knowledge diversity yielded through intersectionality and empirically studies new ways of applying the evidence-based model in public health.

Conclusion

The struggle toward a more just distribution of health between individuals and population groups lies at the core of the art and science of public health. Different approaches to intersectionality contribute with diverse knowledges and understandings about health inequalities. Knowledge diversification through intersectionality is important since it expands the possibilities for fair decision making and health equity through its different outlooks on social justice. However, I conclude that a fair and flexible use of knowledge in the context of evidence-based decision making would require amendments to the evidence-based model. Since intersectionality encompasses diverse knowledge-making practices which cut across diverse epistemological and ontological paradigms, it is a useful concept with which to engage in order to achieve knowledge on equal terms. Thus, it has the potential of making public health decision making more flexible, transparent, reflexive, and democratic.

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Appendix A

WPR Chart: What's the Problem Represented to be? (WPR approach to policy analysis)

Question 1: What's the problem (e.g. of "gender inequality", "drug use/abuse", "economic development", "global warming", "childhood obesity", "irregular migration", etc.) represented to be in a specific policy or policies?

Question 2: What deep-seated presuppositions or assumptions (conceptual logics) underlie this representation of the "problem" (problem representation)?

Question 3: How has this representation of the "problem" come about?

Question 4: What is left unproblematic in this problem representation? Where are the silences? Can the "problem" be conceptualized differently?

Question 5: What effects (discursive, subjectification, lived) are produced by this representation of the "problem"?

Question 6: How and where has this representation of the "problem" been produced, disseminated and defended? How has it been and/or how can it be disrupted and replaced?

Step 7: Apply this list of questions to your own problem representations.

Adapted from Bacchi and Goodwin (2016)