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The right to the unhealthy deprived city: An exploration into the impacts of state-led redevelopment projects on the determinants of mental health

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ABSTRACT

Research shows mental health is impacted by poor-quality physical and social-environmental conditions. Subsequently state-led redevelopment/regeneration schemes focus on improving the physical environment, to provide better social-environmental conditions, addressing spatial and socioeconomic inequities thus improving residents' health. However, recent research suggests that redevelopment/regeneration schemes often trigger gentrification, resulting in new spatial and socioeconomic inequalities that may worsen health outcomes, including mental health, for long-term neighborhood residents. Using *the right to the city* and situating this within the framework of accumulation by dispossession and capitalist hegemony, this paper explores the potential mechanisms in which poor mental health outcomes may endure in neighborhoods despite the implementation of redevelopment/regeneration projects. To do so, we explored two neighborhoods in the city of Glasgow — North Glasgow and East End – and conducted a strong qualitative study based on 25 in-depth semi-structured interviews with key stakeholders.

The results show that postindustrial vacant and derelict land spaces and socioeconomic deprivation in North and East Glasgow are potential mechanisms contributing to the poor mental health of its residents. Where redevelopment/regeneration projects prioritize economic goals, it is often at the expense of social(health) outcomes. Instead, economic investment instigates processes of gentrification, where long-term neighborhood residents are excluded from accessing collective urban life and its (health) benefits. Moreover, these residents are continually excluded from participation in decision-making and are unable to shape the urban environment. In summary, we found a number of potential mechanisms that may contribute to enduring poor mental health outcomes despite the existence of redevelopment/regeneration projects. Projects instead have negative consequences for the determinants of mental health, reinforcing existing inequalities, disempowering original long-term neighborhood residents and only providing the "right" to the unhealthy deprived city. We define this as the impossibility to benefit from material opportunities, public spaces, goods and services and the inability to shape city transformations.

1. Introduction

Mental health disorders play a considerable role in the "global burden of disease" (Cohen-Cline et al., 2015). Poor mental health profoundly impacts participation in health promoting behaviors, impacting physical health conditions such as cardiovascular, respiratory and infectious diseases, diabetes and hypertension (World Health Organization (WHO), 2021). Also notable, is the co-occurrence of alcohol

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and substance abuse disorder with mental health problems (*ibid*). Moreover, mental health inequities can be found within the same city between neighborhoods of extreme deprivation and wealthy areas (Seaman et al., 2015). The co-occurrence of mental illness, worse physical health and inadequate health promoting behaviors can result in early mortality, with up to a 25-year life expectancy reduction (Roberts et al., 2017). This paper contributes to this body of work by exploring some of the determinants of mental health that are impacted by urban development processes. We explore these primarily through the mechanism of disempowerment, theoretically situating our analysis within the framework of the right to the city, to suggest to what extent local residents have a right to good (mental) health outcomes (or not). We offer a novel qualitative exploration depicting processes of disempowerment for local residents, in light of capitalist hegemonic profit accumulation through dispossession.

There is considerable literature establishing the link between mental health and physical environments (Wolch et al., 2014; Anguelovski et al., 2021; Ribeiro et al., 2021). Strong relationships have been found between poor neighborhood aesthetic qualities and poor mental well-being (Bond et al., 2012). For example, poor-quality housing can be seen to contribute directly to emotional stress, anxiety and depression (Li and Liu, 2018). Long-term exposure to noise — including road traffic, aircraft noise and railway noise — has been linked to increased rates of depression and anxiety, increased mental health-related medication use and childhood emotional and developmental problems (Clark and Paunovic, 2018). Long-term exposure to air pollution has also been found to negatively impact mental health outcomes (Klompmaker et al., 2019).

Furthermore, mental health can be linked to socioeconomic factors, both on an environmental and individual level. Poor social neighborhood environments in deprived areas have been linked to increased social disorder, paranoia among residents and a lack of social cohesion (McElroy et al., 2019). Similarly, the physical environment has been found to contribute to antisocial behavior and facilitate crime/violence in its material make up: for example derelict land spaces can encourage illicit activities while greened and cleaned up land has been associated with lower drug-related crime and assaults (Kondo et al., 2018) However, studies to date often explain differences in mental health outcomes purely by socioeconomic conditions, describing differences as a lack of resources or general deprivation (Marmot, 2017), but fall short of examining the fully complex picture of underlying forces in which inequities are produced (Purtle et al., 2020).

To improve physical and social-environmental conditions, governments often target historically marginalized and disinvested working-class neighborhoods with redevelopment/regeneration schemes aiming to boost economic growth (Anguelovski et al., 2020). Primarily targeting environmental and economic development is presumed to have a knock-on effect on social conditions, positively impacting (mental) health (Gray and Mooney, 2011). However, increasingly – particularly in the field of urban environmental justice – some question the capacity of redevelopment/regeneration schemes to improve the conditions of existing residents and decrease social and health inequities (e.g., Anguelovski et al., 2020; Sims, 2021; Anguelovski, 2013). Such schemes exemplify the trade-offs between prioritizing the economic and environmental pillars of sustainability and addressing deeper social vulnerabilities and needs (*ibid*).

More specifically, despite redevelopment/regeneration projects improving environmental quality and economically developing the area, whether neighborhoods are healthy and just has been questioned. Scholars in geography, urban planning and critical public health have argued that redevelopment/regeneration projects contribute to gentrification, both exacerbating existing and creating new types of social, environmental and health injustices (Cole et al., 2019, 2021; Cole, 2020; Triguero-Mas et al., 2021). That is, the influx of wealth initiates processes such as increasing land speculation and housing prices, that may in turn end up evicting lower class residents who are no longer able to afford rent or council and property taxes, while attracting higher income and educated residents (Lees et al., 2008; Gray, 2018; Tach and Emory, 2017). Equally, state-led redevelopment/regeneration schemes have been known to focus their efforts on new housing developments, demolishing existing council housing to make space for expensive new builds, often unaffordable for original residents (Ferreri, 2020; Lees and Ferreri, 2016). Furthermore, those able to physically stay in the neighborhood may be exposed to social friction between classes, feelings of exclusion, lack of belonging and further marginalization (Anguelovski et al., 2020).

Regarding health impacts, existing research shows a strong positive association between living in a gentrified neighborhood and serious psychological distress of low-income residents (Tran et al., 2020). For example, in New York, hospitalizations for mental health reasons were more likely among residents displaced from gentrifying neighborhoods (Lim et al., 2017). Similarly, it has been reported that urban renewal policies that fail to center vulnerable populations, are more likely to initiate processes of gentrification and negatively impact health (Mehdipanah, 2018). For urban renewal programs to benefit the health of all residents, they need to overcome barriers to issues of wider accessibility and inclusivity, ensuring feelings of safety and security are felt by all (Mehdipanah et al., 2015). Nonetheless, beyond these findings, the interconnections between redevelopment/regeneration projects and mental health are still widely unexplored.

In turn, the social exclusion and ensuing poor mental health impacts of redevelopment/regeneration schemes calls into question the rights of socially vulnerable residents to remain within neighborhoods and benefit from (new) supportive urban amenities. The right to the city can be defined as the ability to appropriate urban space, to make demands to remedy spatial inequality and to build collective life (Lefebvre, 1968; Lefebvre, 1996). It is a right to material opportunities, public space, goods and services (Marcuse, 2009). Other scholars (e.g., Purcell, 2002) interpret Lefebvre's concept as enfranchisement, where those that contribute to the body of urban lived experience can claim the right to the city. Relevant to the topic at hand, Harvey (2003) brought the concept back to social relations, depicting it as the ability to "make and remake our cities and ourselves" with the freedom to produce and reproduce socially contextualized urban space. In the context of redevelopment/regeneration projects, we rely on Harvey's definition of the right to the city to guide our analysis, however we also draw from others, particularly Purcell's interpretation focusing on *enfranchisement*.

Additionally, Gray & Porter (2018) critically depict how state-led gentrification processes through redevelopment/regeneration projects reaffirm capitalist hegemonic power structures. In line with Gramscian theorists on cultural hegemony, projects exclude and repress other socioeconomic or socio-spatial possibilities (Mouffe, 2005) and undermine the citizenship of certain classes (Paton, 2016). There is evidence that powerful state actors diminish working class relations of belonging through processes of stigmatization and forced removal from place, under the promise of *improvement* (*ibid)*. Through processes of accumulation by dispossession (Harvey, 2003), working class people are continually excluded through an ideological policy tool. As the pursuit of profit expands into these 'peripheral' neighborhoods, the right to the city is therefore under threat. This results in further socioeconomic deprivation, and more importantly in the scope of this paper, results in further socio-spatial deprivation, having a considerable impact on mental health.

Drawing on these concepts, particularly that of the right to the city, paves the way for a better understanding of the relationship between physical, socioeconomic and mental health factors in the face of urban development processes. Acknowledging *who* is able to contribute to the (re)making of urban spaces, and who benefits and is harmed, can provide an avenue to assess the structural and systemic drivers of social and spatial inequalities in the face of justice, where rights and access to the city is a right to empowerment. By depicting this as capitalist hegemonic accumulation, we are able to illustrate how *and* why urban planning

decisions impact the most socially vulnerable residents and can begin to better understand the mental health impacts and disenfranchisement that might occur as a result of redevelopment/regeneration projects.

To do this, we used qualitative data to carry out an in-depth investigation of the potential mechanisms in which poor mental health outcomes may endure in certain neighborhoods, despite the variety of large-scale redevelopment/regeneration projects linked to livability and health that certain cities implement. Using Glasgow's recent regeneration as a case study, we addressed the following questions: 1) What is the relationship between the history of disinvestment and environmental degradation and excess mental health-related mortality in Glasgow? 2) How are urban redevelopment/regeneration initiatives potentially linked to excess mental health-related mortality in Glasgow?

2. Methods

2.1. Case selection

This study is based on data from a research project that assessed if urban greening projects redistributed access and benefits for underprivileged residents in mid-sized cities in Canada, the United States and Western Europe. Fieldwork was conducted in 24 cities of various city typologies and geographic areas. Based on grey literature and discussions with collaborators in each city, we identified specific historically marginalized districts or neighborhoods in each city experiencing re-naturalizing, redevelopment, and gentrification processes.

Out of the 24 cities studied we selected Glasgow, Scotland. It stands out as a critical case study to explore the aforementioned theoretical ideas. Grey literature was used to build an understanding of this case study, giving us a lens in which to interpret our primary data collected. Exhibiting a process labelled 'The Glasgow Effect', this postindustrial city has incredibly high excess general and mental health-related mortality rates, *beyond* those ordinarily associated with socioeconomic deprivation (Walsh et al., 2010). Walsh et al. *(ibid)* quantitatively illustrate the differences between Glasgow and similarly comparable cities. For example, Liverpool and Manchester have similar industrial histories as well as population sizes and levels of socioeconomic deprivation. However, Glasgow exhibits *much higher* morbidity and mortality rates than the other two cities. Statistics show that, in comparison, deaths in Glasgow are 70% higher for suicide, 32% higher for external causes (including accidents, self-harm, assault, drowning, fire and poisoning), 130% higher for alcohol-related causes and 150% higher for drug-related causes (Hanlon, 2015). The majority of these deaths can be attributed to poor mental health, for example suicide, and drugs and alcohol-related poisoning (*ibid)*.

From the industrial revolution, Glasgow expanded rapidly, becoming a key global center for the production of chemicals, textiles and in engineering (Glasgow City Council, 2007). From the 1960s onwards, rapid deindustrialization meant high levels of unemployment, urban decay, population decline and overall poor health (*ibid*). In the second half of the century, Glasgow's population halved from 1.1 million to 600,000 people (Hanlon, 2015). This combined with its industrial heritage left Glasgow with multiple vacant and derelict land spaces, many of which remain highly contaminated (Maantay, 2017). Approximately 60% of Glasgow's local population live within 500 m of a derelict space and 92% live within 1000 m, particularly Glasgow's poorest residents, reducing overall quality of life and health (*ibid*).

Glasgow exhibits an extreme example of some of the dynamics depicted in related studies of the right to the city. The coining of the term the 'Glasgow Effect' by Public Health specialists was an attempt to shed light on the uniqueness of the case, where socioeconomic deprivation does not account for the shorter lifespans and health disparity found in Glasgow (Walsh et al., 2010). That being said, despite expansive redevelopment plans initiated in the city to tackle this, the Glasgow Effect persists, begging the question; what dynamics are really at play here? The right to the city, understood in the context of capitalist hegemonic power structures, allows us to hone in on these dynamics assessing who redevelopment/regeneration projects assign rights to and the potential associated mental health outcomes of this. We focused on a single case study in order to fully delve into the data and analyze in-depth the relationships between phenomena, context and people. This allowed us to posit potential explanations for the *how* and *why* behind the above statistics, and what might differentiate Glasgow's case from others, for example Liverpool and Manchester.

2.2. The East End and North Glasgow

This study focuses on two areas: East End (Bridgeton, Calton, Dalmarnock) and North Glasgow (including all areas adjacent to the Forth and Clyde Canal). These two historically marginalized and working-class areas feature low-quality open spaces; roughly 8 or 9 out of 10 people live within 500 m of vacant or derelict land spaces (Gray, 2008). Historically, North Glasgow concentrated much of the industrial economic growth of the city, with the surrounding residential areas housing Protestant factory workers (Glasgow City Council, 2016). Friction between local Protestants in the North and Irish Catholic migrants looking for work, meant the latter group was forced into the East End, expanding Glasgow's industries (Handley, 1943). The prevailing southwesterly wind meant that both the north and east contained the highest pollution levels in the city.

Now, between the wealthier (West End) and the lower income areas of the city (North and East End), clear environmental and health inequalities exist. Glasgow's West End is decidedly middle-class, with fewer, but higher-quality open spaces than North Glasgow and East End. Moreover, between areas there is roughly a 12-year difference in life expectancy among adult males and slightly lower for females (Seaman et al., 2015). In addition, a strong correlation can be seen between area deprivation and poor mental health. Those in the most deprived quintile in Glasgow were twice as likely to suffer from mental health issues than those in the least deprived (Shipton et al., 2011). Comparatively, you can see stark inequalities in mental health outcomes in relation to area deprivation.

Consequently, North Glasgow and East End particularly have thus been the focus of a number of redevelopment/regeneration projects since the early-mid 2000s. The Scottish Government has invested substantially in tackling poor environmental conditions, with the national planning strategy for the next 20–30 years depicting its investment in sustainability as "living environments foster[ing] better health and… hav[ing] reduced spatial inequalities in well-being" (Scottish Government, 2014). These include recent regeneration projects such as: (i) decontamination and green-blue infrastructure provision through the Clyde Gateway project in East End, beginning with the 2014 Commonwealth Games and (ii) Forth and Clyde Canal regeneration project in North Glasgow (see Figs. 1, 2 and 3).

The primary goal of the Commonwealth Games intervention was to economically develop the area, for wealth to trickle down in the form of job opportunities, increase amenities, and general economic activity (Gray and Porter, 2018). Moreover, the project aimed to address the poor-quality of public spaces and "enhance health and wellbeing" (Glasgow City Council, 2014). This project was largely considered a success by its developers. However, social housing developments were demolished displacing a large number of long-term neighborhood residents (*ibid*).

The purpose of the Forth and Clyde Canal regeneration was to connect North Glasgow with the city center, focusing on creating economic corridors of activity to address social aims including health and wellbeing in relation to environmental space (Glasgow City Council, 2014*)*. Despite large-scale projects, in 2016, Glasgow City Council established that poor environmental conditions were related to *continued* socioeconomic deprivation, attributed to fragmented ownership of urban land (with multiple sites having multiple different owners, contributing to difficulties around land governance), poor postindustrial ground

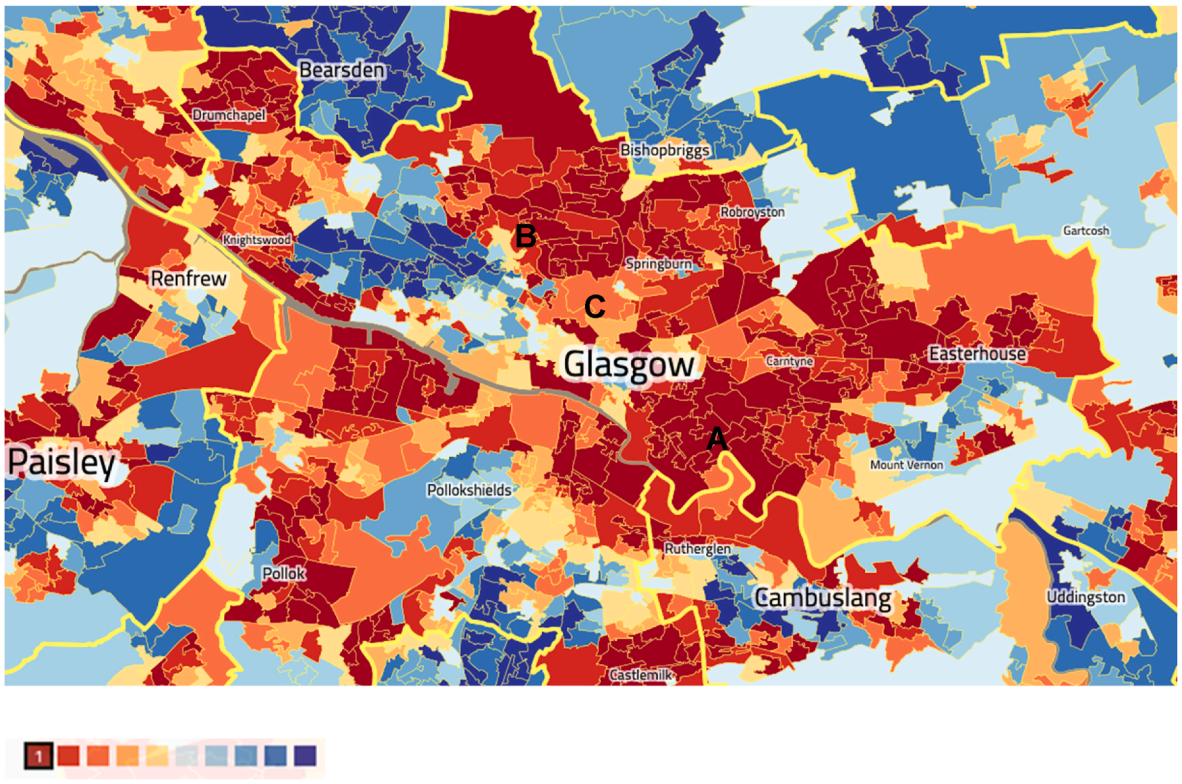

Fig. 1. Map of deprivation in Scotland. The most deprived areas are indicated in dark red and the least deprived in dark blue. 'A' indicates the Commonwealth games site, including the Athlete's Village and 'B' to 'C' indicates the Forth and Clyde Canal regeneration project from Maryhill to Port Dundas. Data source: Scottish Index of Multiple Deprivation (2020). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

conditions, and inadequate investment in infrastructure.

2.3. Study sample and data collection

During mid-2019, over approximately one month, 25 semi-structured interviews were carried out with key stakeholders, including long-term neighborhood residents and other community members, activists, city employees and elected officials, developers and project managers, and representatives of non-profit organizations (see Fig. 4 and Supplementary Material *1.1*). All participants were either long-term neighborhood residents or professionals. The professionals were specialist and knowledgeable in their roles, and were able to comment on the lived experience of long-term neighborhood residents having worked closely with residents, observing their lives and listening firsthand experiences. Participants were identified through online research, media articles or through the researcher's own knowledge of the city. The snowball approach was used to find other participants. Interviews were carried out until saturation was reached; where additional interviews would be unlikely to produce new data and ensured at least 4–5 participants from each category were interviewed (see Fig. 4). We determined saturation when multiple interviewees shared the same perspective on a theme and no new perspectives emerged from additional interviews or "spark[ed] new theoretical insights…reveal[ing] new properties of [the] core theoretical categories" (Charmaz, 2006, p.113). Themes included mental health problems, affordability of housing and segregation.

The semi-structured interviews were based on a question guide (see Supplementary Material – page 2). Follow up questions or prompts were used for clarity. The following themes were covered: history of local urban development, baseline and changes in environmental exposures for residents, development of new environmental amenities, inclusion and equity issues regarding changes and developments, health impacts for residents, policy and community responses and challenges addressing social and health justice concerns. The interview questions also pertained to broader perspectives in knowledge of the city, region or policy or planning processes.

Each interview lasted between 40 and 90 min and was audio-recorded. Interviewees were able to stop the interview or choose to not answer questions at any time. They were not compensated for their participation. Each interviewee was informed about the purpose and procedures of the project and gave written consent accordingly. This study received ethics approval from our institution's ethics committee (N° 678034).

2.4. Analysis and interpretation of results

All interviews were recorded and transcribed. As part of the parent project, a mixed inductive-deductive coding was used, based in thematic and grounded theory. We used thematic coding to clarify the initial deductive codes from the literature guiding the project's framing, and then used grounded theory to inductively code thematically within those codes. Multiple rounds of coding were carried out, resulting in the development of a detailed coding scheme including key themes such as; city/area context, community mobilization, policy measures, municipal processes and support towards green equity and municipality-community relations. Health-related answers were also coded as a general code, and then recoded under these four most salient codes; 1) *Impacts of gentrification on health: mechanisms, 2) Mental Health, 4) Physical health and 4) Gentrification as modifier of relationship between green space and health.* For this study, we selected specific codes to delve further into to explore the themes of this paper. All interviews were coded using NVivo software. The results reflect respondents' recurring responses in relation to the coding matrix (see Supplementary Material – page 9).

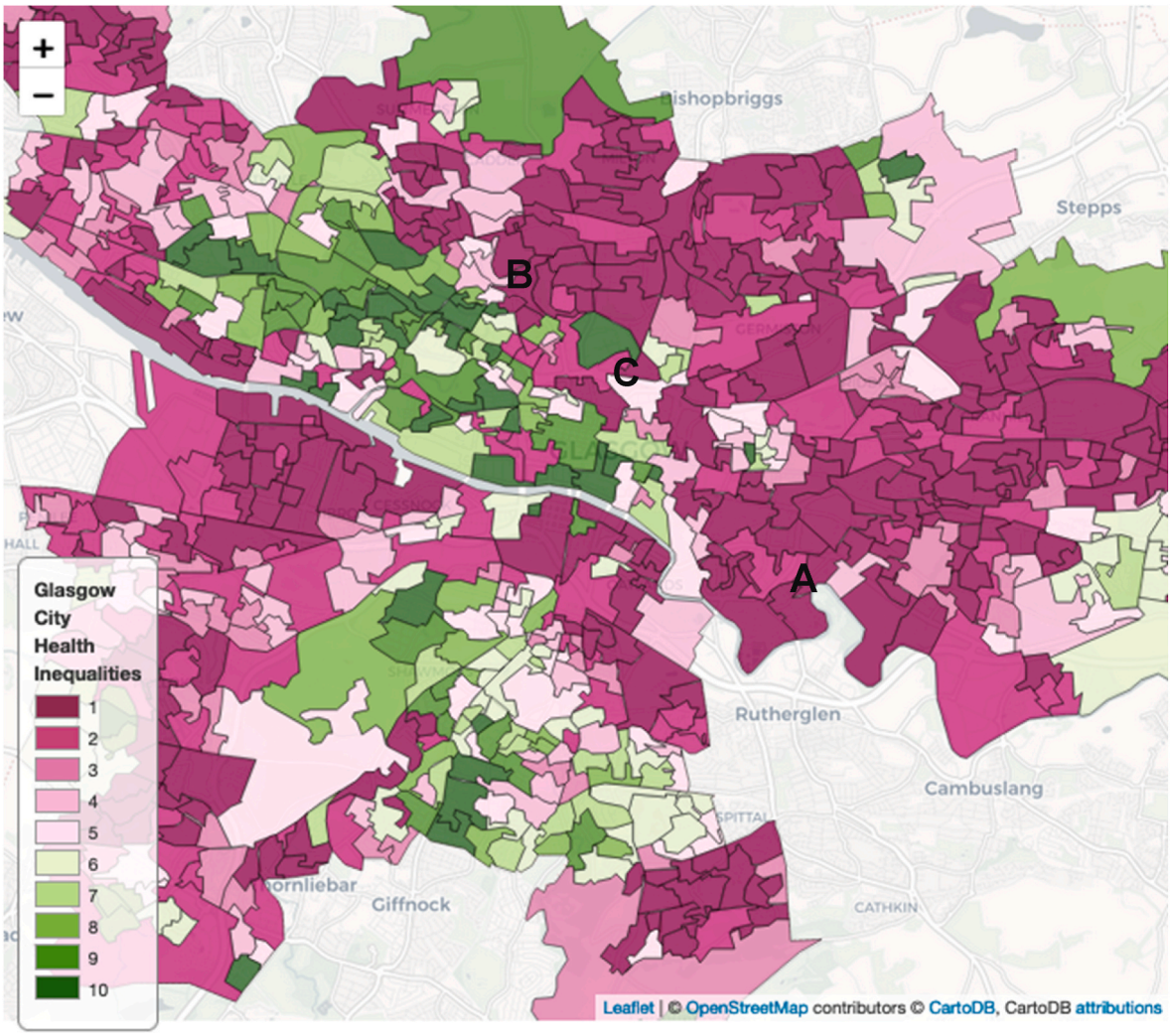

Fig. 2. Map of Glasgow health inequalities. The dark pink indicates the most deprived in respect to health and the dark green indicates the least deprived in respect to health. 'A' indicates the Commonwealth games site, including the Athlete's Village and 'B' to 'C' indicates the Forth and Clyde Canal regeneration project from Maryhill to Port Dundas. Source: Scottish Index of Multiple Deprivation, 2021

3. Results

The results depicted multiple mechanisms negatively impacting some of the social determinants of mental health, where contributing to social and health inequalities may enhance poor mental health outcomes where redevelopment/regeneration projects have been implemented. Firstly, poor-quality post-war social housing lacking basic amenities and surrounding postindustrial vacant and derelict land spaces leant themselves to anti-social behavior and discouraged health-promoting outdoor activities. Moreover, where redevelopment/regeneration projects targeted poor-quality urban areas, economic strategies were used to address social and health inequalities, hoping that by injecting investment it would "trickle-down" to poorer residents. Instead, this strategy increased inequalities, physically displacing some residents. Additionally, a slow influx of higher income "creative" classes came to newly generated areas resulting in remaining original residents feeling socioculturally displaced and excluded. Lastly, exclusion from urban planning decision-making was also highlighted as a relevant element.

3.1. Poor housing and urban environmental conditions

Interviewees highlighted how postindustrial housing and urban environmental conditions contributed greatly to some determinants of mental health. They explained how post-war modernist housing in North Glasgow and the East End, built for maximum functionality to accommodate the expansive population, remained in extreme deprivation. Transformation Regeneration Areas (TRAs) were the city's response to poorly maintained low-quality social and affordable housing, where original housing was demolished and replaced with mixed housing. Many new developments consisted of majority private market housing and reduced social housing, with 'mid-market' rent properties targeting young professionals rather than catering for original long-term neighborhood residents. One city council planner explained the cycle they witnessed trapping residents, where new developments failed to meet original residents' needs; "[in] Glasgow we pushed [residents] out to the peripheries, we broke up […] social networks … and that compounds the problem time and time again…once you start to gentrify an area all that happens is those that can't afford it will move out to [other] …deprived areas".

Respondents reported that residents of Glasgow's poorest areas lacked easy access to good-quality green space, with the majority of accessible outdoor space in the form of vacant and derelict land sites. Without access to space of adequate size and quality, or nature-based facilities, some long-term neighborhood residents reported feeling discouraged from physical and mental health-promoting activities. They felt unable to comfortably exercise, including running and walking, and carrying out daily activities (such as walking to school or running errands) felt much less appealing or safe. One local councilor described an

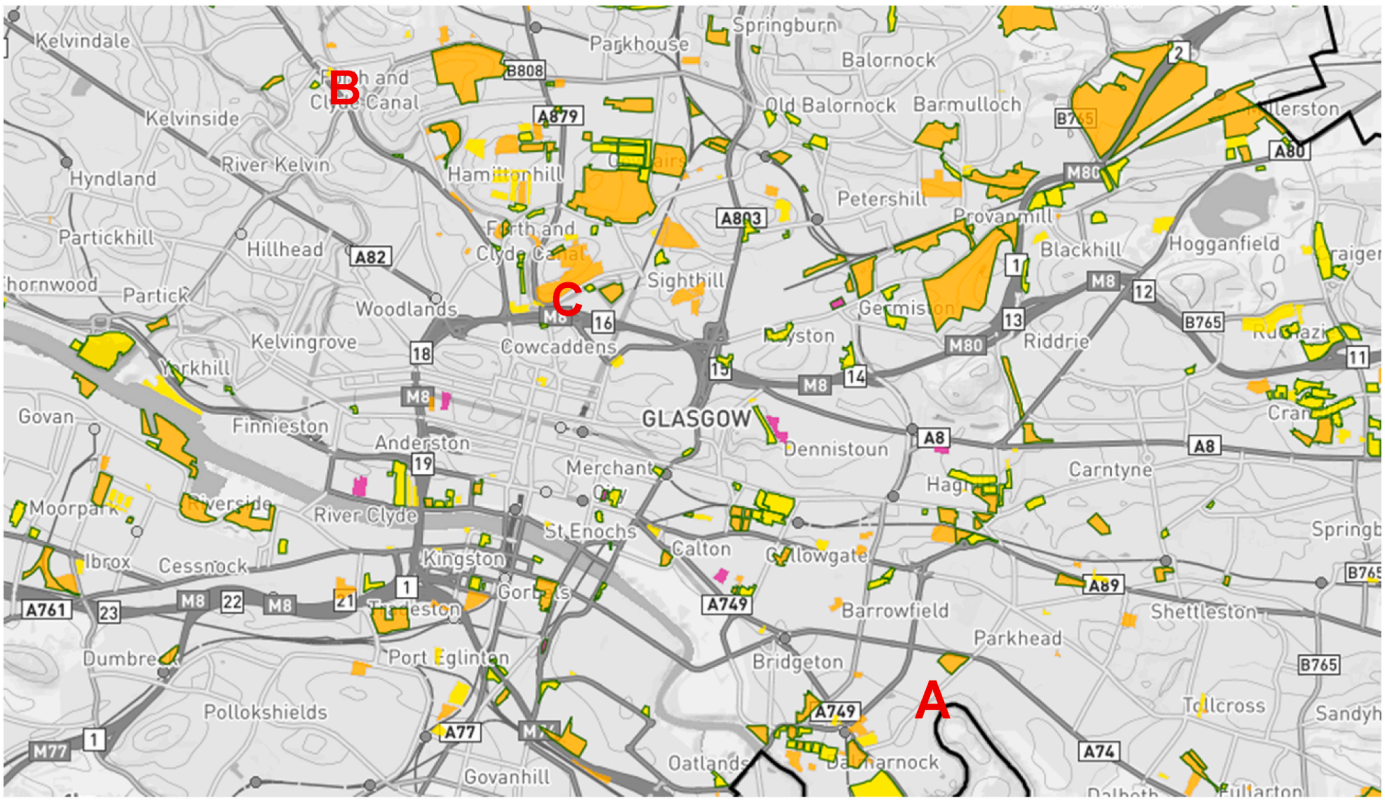

Fig. 3. Scottish Government Vacant and Derelict Land Survey Map. Yellow areas indicate vacant land and orange areas indicate derelict land. 'A' indicates the Commonwealth games site, including the Athlete's Village and 'B' to 'C' indicates the Forth and Clyde Canal regeneration project from Maryhill to Port Dundas. Source: Scottish Government, 2017

Category	Description	Count
Residents and community members	Residents and/or community members involved in different community-based projects	4
City employees and elected officials	Glasgow City Council employees and representatives	9
Developers and project managers	Redevelopment project and program managers	7
Non-profit organization representatives	Project coordinators and housing association employees	5
Other	Public health specialist	1

Fig. 4. Table of participants interviewed by the researchers.

example of these neighborhood spaces that they had come across; "[the] place was a mess, people were using it as a dumping ground, folk were going up and putting old tires there." In opposition, new developments exhibited high-quality green spaces with "wooden fences right round the outside…[with] no interaction with that existing local community," explained one project manager of a development project who had observed this spatial division.

Furthermore, interviewees indicated that the low-quality vacant and derelict land leant itself to antisocial behavior and illegal activity. Long-term neighborhood residents described these spaces as focal points of fights, gang violence, drug-related crime, drug taking and binge drinking. A senior manager of a regeneration scheme described what they knew of one space that "had been … transformed into a sort of quasi-park but it was…being allowed to overgrow, there [were] people sleeping in it, there was drug activity going on [and] prostitute activity going on". Some local community members reported feeling "fearful or…vulnerable" walking through these spaces, particularly after dark. A city council planner who worked closely with the local community explained how people had reported to them that they "fe[lt] less comfortable, less safe, less sure of [their] being". Neighborhood residents had explained that their restricted perception of a safe outdoor environment critically impacted their movement outside of their homes. Conversely, one resident and member of the local community center reported that as vacant and derelict land spaces were cleared up, "the police told [them] that anti-social behavior was going down because people could see into [spaces] now so it wasn't such a safe place to hide

so things like people using drugs in your front garden, people having sex and paying for sex in your garden stopped." Yet, displaced original long-term residents were often unable to experience these improvements. These determinants, such as loss of social networks and poor environmental quality resulting in people feeling less safe and comfortable carrying out health promoting behaviors in their neighborhood, can have consequences for mental health outcomes.

3.2. The uneven impacts of redevelopment/regeneration projects prioritizing economic goals

Furthermore, interviewees reported that many redevelopment/regeneration projects targeting poor postindustrial environmental conditions focused too heavily on economic aims rather than addressing social (health) inequalities and determinants. An example of this was TRAs where affordable housing was often redeveloped prioritizing private market housing and focused on new amenities appealing to middle-class residents, increasing average neighborhood wealth. That is, respondents reported that redevelopment/regeneration projects often increased or improved amenities, such as high-quality green and blue spaces (parks, canals, etc.), shops, medical services, and transport links in closer proximity to new housing developments, as an indirect way to address living standards for all residents.

Interviewees also noted that redevelopment/regeneration projects directly targeted vacant and derelict land spaces, making areas more aesthetically appealing. They explained how this attracted wealthier residents who had the financial power to sustain new local amenities through consumption. This was conceptualized as part of a "trickle-down" strategy to address inequities by increasing overall economic growth, where wealth would trickle down to lower income residents and increase quality of life and (mental) health benefits. The Forth and Clyde Canal regeneration project was an example of this. Described by a Scottish Canals employee as a "corridor(…) of economic activity", its primary goals were to bring economic activity to the area and push the development of amenities such as shops and transport links, decreasing health inequalities, and "bring[ing]…about positive change for the communities that live around the canals, something that creates opportunities for health, for recreation, and also for employment".

A number of people on the project teams of new redevelopment/regeneration projects regarded these projects as successful, without detailing the indicators to gauge this, other than economic achievements. One developer described a project's success in the East End in bringing expensive housing to the area; "they are private[ly] sold, some of them are social rent, some of them are mid-market rent and that was a very successful development so it just shows that if you build, the market will create itself." In contrast, other interviewees involved in the projects' development noted the lack of social or health indicators used to measure its success, where these factors were originally cited as aims, with a particular lack of mental health indicators. One project officer explained: "we never produce a report about successes and failures because we don't want to advertise the failures". Conversely, long-term neighborhood residents noted many negative social and health-related impacts on account of new initiatives failing to connect with original long-term residents. One local grassroots community worker explained that "what they do is really impressive…but…they…struggle connecting with a lot of the residents…it takes years of…genuine work, to build up these relationships…you have to build trust and for people to feel comfortable about coming in and feeling like they have access and they feel welcome and that does take a long time."

3.3. Perceived gentrification and community friction

Similarly, between interviewees, the main discrepancy was not whether processes of gentrification had taken place (as even those that refuted the word cited evidence of it), but conflicting views on the value of redevelopments/regeneration projects, and whether the influx of capital positively impacted the whole community. As areas underwent processes of redevelopment/regeneration, long-term neighborhood residents were physically displaced where new developments had replaced social housing and increased the attractiveness of an area, raising local house prices. Our data shows that by prioritizing economic gain within housing, it contributed to unaffordability, where residents' homes were demolished without access to what was erected in its place; redeveloped housing failed to include a 'right to return' policy. These perceived processes of gentrification meant that any intended social and health benefits were not linked by long-term neighborhood residents.

Furthermore, Glasgow's industrial legacy of vacant and derelict land sites, and those that later social housing was built upon, were still highly contaminated. Limited council funds meant decontaminated land was often instead developed with Scottish government funds – e.g., large scale projects coordinated by Clyde Gateway in the East End, or by private developers, with only a small portion of new developments dedicated to affordable housing. One interviewee from a city council regeneration initiative elaborated on this. He explained that new developments contained approximately 20% social housing and 80% private accommodation: "they've just put affordable housing in my village at £175,000 right, that's not affordable for 80–90% of the population but housing in general is not affordable…so salaries for the last 10 years have gone up by 1 or 2% and housing's gone up 40, 50%."

The threat of being displaced was associated with increased anxiety and feelings of increased marginalization and isolation among our interviewees. A couple of interviewees, including the CEO of an East End housing association that works closely with community residents, explained that as older social housing developments were knocked down, tenant relocation options were further out; enclaves of socio-economic deprivation were simply moved but as original residents were scattered, social networks were broken and anxiety, depression and isolation increased among traditional residents. In another vein, a number of different respondents, including a local resident and a community center worker, highlighted that residents who were not physically displaced felt socioculturally displaced from their neighborhood, which included feeling excluded, marginalized, isolated and generally disempowered. If we look closer at the tensions in different perceptions of the changes taking place, we can start to see this. For example, one senior manager from the Clyde Gateway regeneration scheme explained how they encouraged people from the film industry to relocate to the East End to try to promote an evening economy in the area, refurbishing buildings and "making [them] cool and funky." As the area was perceived as safer, but still remained comparatively cheaper to the rest of Glasgow, the attractiveness of the area brought investment in coffee shops, artisan shops, vintage clothing, music and a different variety of activities, where middle class tastes, consumption behavior, and cultural identities shaped the growth of the area. However, on the other hand, one local community gardener shared their opinion on the changes taking place in the Barras, East End: "definitely I do see that big divide, I really do see it…people round here are worried that they're going to lose what the Barras is about, the history…so who are you appealing to? And as much as we have the vintage whatever going on a Saturday in the Barra's, pop up gin whatever, it's not really the people here, it's still those people from the West End [coming] over". Some interviewees explained that as the middle classes migrated to North Glasgow and East End, long-term lower-class neighborhood residents felt forced to adapt to the tastes of new residents or felt excluded.

Furthermore, long-term neighborhood residents commented on neighborhoods feeling increasingly segregated due to exacerbated economic inequalities. For example, the Athlete's Village, built as part of the Commonwealth Games development, was depicted by a spatial planning officer focused on building trusting relationships with the local community to better meet needs, as a segregated community or "ghetto": "it's like a gated community, [new residents] will ignore the fact they're in the East End". Although the goal was to diversify the area, attracting the middle classes and increasing the average wealth of a

neighborhood, one city council spatial planner, working in consultation with local residents, observed that as wealthier residents moved in, they appeared to ignore where they were and simply "g[o]t in their car[s] and dr[o]ve somewhere else" to spend their money. Moreover, social housing was of lower quality than private, with more poorly maintained green spaces outside their homes. Social housing residents were also generally more likely to experience poor access to amenities without private cars and poor street lighting negatively affecting mobility. Residents thus described a two-speed, or two-sided neighborhood where they felt marginalized and their interests sidelined.

3.4. Nonexistent or poor-quality community engagement in decision-making

In addition, community engagement in decision-making was reported to be poor, both in terms of the opportunities offered and the take-up of opportunities by local long-term residents. One council planner, speaking from experience, explained "what we end up with is, we always do for the affluent communities what they want but we never assess what the less affluent communities value". Similarly, another depicted how their community engagement strategy aimed to help the community understand *why* they were making chosen decisions, rather than involving residents in the process itself: "not everything can be about the community actually deciding well maybe they don't want [that] … we're helping the community understand why *those* decisions".

Furthermore, in community engagement forums where local working-class residents were asked what improvements could be made to the local area, residents' expectations and what they asked for were much lower than when middle class residents were asked the same question. They were not encouraged further. One project manager explained the challenges in areas "of social and economic deprivation… people generally have very low aspirations about what might be feasible for their area…you go to affluent areas they're not shy in telling you what they want because they're able to articulate it and they feel empowered to do that." Our results showed that lower-class residents failed to see an investment in their livelihoods, feeling as though neighborhood improvements often passed them by.

Repeatedly, working class people's lives have been devalued in processes of redevelopment/regeneration. Since the industrial revolution, top-down orchestration of health and social benefits for all have failed to be truly manifested, on account of continual exclusion of working class people from decision-making. The evidence provided in this study shows how these mechanisms impact some of the key determinants of mental health. Over time, community divisions, through physical and sociocultural displacement have contributed to some social friction within newly generated neighborhoods and feelings of disempowerment. It was instead suggested by one sustainability and resilience officer how to approach community engagement more effectively; "you need to have the conversation which goes back to my issue about empowerment … [you need to] humbly and openly go to talk to people and it takes a lot of effort, it takes a lot of organization and it's not very pleasant when people swear at you because they're not happy with the local services…and that's fine, that's ok". Few respondents mentioned being aware of such efforts.

4. Discussion

Our study of the determinants of mental health aligns well with previous research that illustrates how redevelopment/regeneration projects initiate gentrification and can negatively impact health. Our contribution shows the failure of trickle-down economic strategy due to displacement and depicts potential mechanisms in failing to address (mental) health inequality. We also demonstrate how these dynamics are part of larger pervasive capitalist hegemonic structures, where through accumulation by dispossession, original long-term residents lose rights to place. Moreover, our study echoes previous research illustrating how lower-class residents are excluded from decision-making processes. Both of these pathways challenge the ability to (re) produce a sense of place and belonging. These disempowering processes contribute to feelings of disenfranchisement, that can often be a key determinant of poor mental health outcomes (Marmot, 2017). Consequently, our findings indicate that, in areas such as North Glasgow and East End, the "right to the unhealthy deprived city" prevails.

4.1. Exclusion from access and subsequent disempowerment

Our findings are consistent with previous research. Residents indicated that their low-quality of life was linked to low-quality housing and their surrounding urban environment. Inadequate housing can create long-term stress in adults and poses a challenge to cognitive, emotional and physical development in children (Li and Liu, 2018; Anguelovski et al., 2021). Moreover, evidence supports that vacant and derelict land can poorly impact mental health and the poor remediation of them can have significant impacts on depression rates (South et al., 2018). Other studies depict how vacant land impacts community mental wellbeing, attracting crime and instilling anxiety and fear in residents (Garvin et al., 2012). Our results echo findings where, despite redevelopment/regeneration projects, Glasgow's lower-class residents are persistently exposed to poor-quality land uses.

Beyond socioeconomic environmental deprivation, our results reflect other studies, highlighting how redevelopment/regeneration projects may initiate processes of gentrification and have negative social impacts on long-term neighborhood residents. For example, Anguelovski et al. (2019, 2021) illustrate the multi-layered potential pathways in which gentrification can cause detrimental physical and mental health outcomes including obesity, asthma, chronic stress and depression. This is seen in our results, where the fruits of redeveloped/regenerated areas are mostly enjoyed by middle and creative classes. This also aligns with existing studies showing how underprivileged residents living in gentrifying neighborhoods fail to benefit from processes of urban development, particularly green amenities (Triguero-Mas et al., 2021; Cole et al., 2019, 2021).

That being said, the originality of our findings lies in highlighting a failure of assumed trickle-down strategies in relation to mental health, where increased economic activity brought to an area fails to benefit original lower-class members of the neighborhood. These residents were either physically displaced or socioculturally displaced. Residents felt increasingly segregated or found new developments included less space for them, both quantitively, as well as inclusion in the urban environment. In redevelopment/regeneration projects where success was marked by the creation of markets, the free-market economy thus relegated social and health challenges to self-regulation through the power of the market.

More specifically, a prioritization of economic goals lets the market dictate socio-spatial environments; those that can *afford* to participate, hold power and "rights". Economic-first ideology, integral to market fundamentalism, maintains the capitalist hegemonic structures that perpetuate unequal wealth distributions (Paton, 2016). It is in this sense that Gray and Mooney (2011) depict gentrification as the "new urban frontier", as a "domestic form of *Orientalism*" (Said, 1978). "The frontier motif compounds a host of accumulated symbolic meanings, including 'the social differences between "us" and "them" … and the economic difference between existing market and profitable opportunity'" (Gray and Mooney, 2011:9). "Conquering" land in the form of redevelopment/regeneration projects such as those seen in Glasgow, thus displace and exclude original long-term residents, disbanding rights in order to make social and physical space for capitalist accumulation. This loss of the right to place-make and maintain a sense of belonging, signifies this transference of power, reallocating individual or collective rights from the lower-classes to the wealthier middle- and upper-classes. In this sense, for original long-term residents, the right to the city is jeopardized at the expense of profit accumulation.

Such processes of accumulation by dispossession are disempowering for lower-class residents, as disabling or denying rights are mechanisms which may lead to poor health outcomes, particularly mental health. Marmot (2017) depicts empowerment as having the freedom to lead a life that one has reason to value, associating it with low mental health-related mortality rates and good general health. By comparison, the Glasgow population data exhibits considerably higher morbidity and mortality rates attributed to mental health-related deaths, than cities with similar industrial histories, population sizes and levels of socio-economic deprivation. Suicide rates are 70% higher in Glasgow, alcohol 130% higher and drug related causes 130% higher (Hanlon, 2015). Our results depict how capitalist hegemonic urban development processes strip long-term neighborhood residents of rights and instead leave residents feeling disempowered and disenfranchised, exposed to unfavorable sociocultural, economic and environmental conditions. By exploring these determinants of mental health, we provide evidence of the potential mechanisms at play that may be causing Glasgow's poor mental health outcomes and subsequent shorter life spans.

4.2. Exclusion from participation

Further consolidating multiple processes of disempowerment, is the exclusion of long-term neighborhood residents from participation in shaping urban development processes. These results echo previous studies, for example Paton (2016) explores how working-class people are excluded through urban restructuring processes where decisions about working class lives are not being made or influenced by working class people. Novel in our study is the discrepancy in views between project orchestrators and long-term neighborhood residents on the success of redevelopment/regeneration projects. Moreover, project administration teams rarely used social or health indicators (or even community engagement/participation) to gauge the success of projects, while long-term residents cited multiple negative impacts on mechanisms that can worsen mental health. This disconnect indicates explicitly how long-term residents' needs were insufficiently met. This can be put down to poor attempts at community engagement or a lack of involvement in decision making processes altogether. Superficially engaging with participation methods risks "reproducing an a-political and even tokenistic use of the term" (Luger et al., 2022).

Moreover, Willis (2019) elaborates on what Lefebvre describes as the 'right to the oeuvre, to participation and appropriation' (1996, p.173), explaining that inclusive and accessible participation holds potential to transfer power to marginalized people in the context of urban space. To be democratically involved in decisions about urban space, is to acknowledge the life that is lived within them, this is a political process that validates citizenship (McCann, 2002). Where lower-class residents are unable to claim the right to the city due to hegemonic processes of capitalist accumulation by dispossession, this lack of recognition thus has the ability to impact identity formation where people's modalities are dismissed and their citizenship invalidated. Individual identity in relation to a wider collective identity, determined by or connected to space, is subsequently challenged. These mechanisms can have considerable impacts on mental health.

4.3. The right to the city and poor mental health outcomes

Our findings add depth to understanding the potential disempowering impacts of urban (re)development processes on mental health outcomes. Through mechanisms of physical and sociocultural displacement, long-term neighborhood residents struggled to maintain existing social relations. Even where longer-term residents were able to remain living in newly developed areas, feelings of segregation prohibited a right to neighborhood, where feeling a sense of belonging in a wider community environment had been lost. These effects, and an active exclusion from urban development processes, has meant that these multiple processes of disempowerment denied long-term neighborhood residents the freedom to create a sense of place and claim the right to the city (Lefebvre, 1968). In failing to understand the socio-spatial nature of place as a product of human experience and vice versa, urban development processes denied individuals the ability to dwell comfortably in their environment (Lefebvre, 1991).

Instead, redevelopment/regeneration projects provide long-term underprivileged residents the "right" to the unhealthy deprived city, defined as the impossibility to benefit from material opportunities, public spaces, goods and services and the inability to shape city transformations. The concept of the right to the unhealthy deprived city provides a lens to observe power structures in order to better understand the potential impacts different mechanisms may have in determining mental health outcomes. This suggests that what is behind Glasgow's high excess (mental health-related) mortality rates, is beyond standard socioeconomic deprivation. Although Glasgow's case is extreme, this theoretical connection paves the way for a more nuanced understanding of redevelopment/regeneration processes and mental health.

4.4. Strengths and limitations

One of our key limitations is that the interviews carried out for the parent project, explored a broader range of topics than the ones present in this paper, more generally focusing on health. This meant that our dataset only supported exploring the potential impacts of different mechanisms which may contribute to mental health rather than being able to provide direct and explicit evidence on *mental* health outcomes. Fortunately, the multi-thematic approach of interviews allowed respondents to connect different processes of redevelopment, greening, exclusion, and determinants of mental health, which still contributes significantly to the research gap.

Furthermore, our study's strengths lie in our qualitative analysis, that illustrate the complexities of socio-spatial dynamics, filling the gaps where quantitative studies may fall short. Qualitative interviews deepen analysis, exploring the high excess mental health-related mortality statistics reported in the initial Glasgow population studies report. Much research in health equity to date relies heavily on quantitative data, our analysis explores in depth the mechanisms at play in the impacts of urban development processes on mental health outcomes. Moreover, topics around gentrification, redevelopment, and general health are particularly under-researched, let alone specifically focused on mental health. Our paper contributes to this gap. Lastly, one of our novel contributions is the critical urban (public) health analysis that we present using approaches from health geography *and* public health to re-visit the concept of "healthy cities" (World Health Organization (WHO), 2010). This movement, centered on improving health through an understanding of the social determinants of health, incorporates multiple disciplines, strengthening our analysis.

4.5. Future directions

Echoing the above limitations, future studies would do well to go beyond the conclusions of this paper to illustrate more in depth some the mental health outcomes related to the determinants discussed in this study. There is also a significant research gap noted in depicting *longer-term* health impacts in-depth (Kennelly, 2016).

Moreover, studies could benefit from a comparative analysis in other post-industrial cities. For example, Manchester and Liverpool share similar industrial histories of disinvestment, deprivation levels and population sizes (Walsh et al., 2010). It could be beneficial to study how urban redevelopment/regeneration projects are linked (or not) to persistent poor mental health in those contexts. These analyses could allow us to identify similar and differentiated patterns in these relationships operating within Glasgow, Manchester and Liverpool.

More specifically, a further relevant study of interest would be an exploration into the chain of command in redevelopment/regeneration projects from research to application. This would shed light on where

power congregates in the process and where dissent political voices, including those focused on accurately depicting mental health issues and phenomena, are silenced, exposing the different mechanisms at play.

5. Concluding remarks

This study has revealed that there are a number of potential mechanisms at play in neighborhoods such as North and East Glasgow that may contribute to enduring poor mental health, despite government-initiated redevelopment/regeneration projects. These projects reinforce existing power dynamics and inequalities only providing long-term underprivileged residents the "right to the unhealthy deprived city". That is, in these neighborhoods, working-class residents are continually exposed to unhealthy housing options and poor-quality urban public space, where exclusion from rights to a better-quality space contributes to disempowerment. As economic goals are prioritized, processes of gentrification are synonymous with processes of disempowerment, where long-term neighborhood residents are exposed to increased segregation and physical and sociocultural displacement. To consolidate marginalization, urban development processes exclude lower-class residents from participation in urban design and decision processes, denying both rights to citizenship and agency.

In the current global health crisis, our research has never been more relevant. The COVID-19 pandemic has changed the way we orientate ourselves and relate to our neighborhoods. Many peoples' lives have become, and will continue to be, increasingly localized. Those living in poor-quality environments are now likely to experience worsening preexisting structural social and health disadvantages (Ribeiro et al., 2021). As extreme policies are being enacted on the basis of public health interests, the need for mental health to be adequately understood and addressed within these policies is ever more crucial. In this direction, our work joins previous calls for redevelopment/regeneration projects to be designed with a just ecofeminist healthy approach (Triguero-Mas et al., 2021).

Credit author statement

Ella O'Neill: Conceptualization, formal analysis, writing original draft, writing - reviewing and editing, project lead, Helen V.S. Cole: Writing – review and editing, Melissa García-Lamarca: Data collection, draft reviewing, Isabelle Anguelovski: Draft reviewing, Pedro Gullon: Draft reviewing, Margarita Triguero-Mas: Writing – review and editing.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

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