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Is it better to invest in place or people to maximize population health? Evaluation of the general health impact of urban regeneration in Dutch deprived neighbourhoods

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ABSTRACT

Aim: To study the general health impact of urban regeneration programmes in deprived Dutch districts. We compared initiatives that focused on the improvement of place with initiatives that mainly invested in people.
Method: A quasi-experimental design compared the trend in good perceived general health in the target districts with comparison districts. Generalized general mixed models assessed the rate of change in prevalence of good health per half year during a prolonged period before and after the start of the interventions.
Results: Neither the target districts that invested mainly in place nor the ones with interventions focused on people showed trends in general health different than comparison districts ($p > 0.05$). However, only districts with interventions focused on place showed no deterioration in general health during the intervention period. The trend change in these districts differed significantly from the change in the districts that invested mainly in people ($p < 0.05$).
Conclusion: Urban regeneration programmes that focus on place may be effective in promoting general health.

1. Introduction

Urban regeneration programmes are often employed as a means of simultaneously addressing spatially concentrated problems related to the personal circumstances of the people who live there and problems that derive from the place itself, such as the local physical and social environment (Anderson and Musterd, 2005; Lupton, 2003). Urban regeneration of certain areas thus targets the place as well as the people, and should not be confused or compared with relocation or rehousing interventions that improve the housing and living conditions of individuals or families by moving them out of certain neighbourhoods (Aalbers et al., 2011). Three earlier reviews reported that the health impact of neighbourhood regeneration programmes was not clear (Thomson et al., 2006, 2009, 2013). Where health impacts have been reported, these were often small and positive, but adverse outcomes have been reported as well (Thomson et al., 2006). Furthermore there was no evidence that neighbourhood regeneration affected health-related behaviour, respiratory health, or chronic disease prevalence (Thomson et al., 2009). More recent evaluations of the health impact of urban regeneration have shown mixed results. Some failed to show average health improvements at the area level (Jalaludin et al., 2012; Kelahar et al., 2010; Lawless et al., 2010; Stafford et al., 2008), but studies that evaluated the longer-term impact of urban regeneration did report positive results (Mehdipanah et al., 2013; Batty et al., 2010a; Pearson et al., 2010). City-wide investment in urban renewal in Glasgow, UK led to bigger improvements in mental health and lower declines in physical health among areas that received higher levels of investments compared to areas with lower levels of investment (Egan et al., 2016).

Though the growing evidence base hints at health benefits, there is still only limited understanding of the type of activities that are responsible for the health impact of urban regeneration programmes, in part due to the complex nature of the interventions under evaluation. Urban regeneration involves complex programmes that combine interventions to improve the

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neighbourhood environment as well as the personal circumstances of the people living there (Anderson and Musterd, 2005; Lupton, 2003). Most of the evaluations of complex area-based interventions have, however, not studied which type of interventions are most effective (Thomson et al., 2006). In the United Kingdom (UK), the lack of consistent success of urban regeneration programmes in reducing spatial health disparities has been related to an imbalance between people and place policies, with exaggerated spending on place or physical regeneration, and less attention for the personal circumstances of those living there (Crowley et al., 2012). For example, the New Deal for Communities (NDC) areas showed that investment in the neighbourhood environment only affects specific health outcomes (such as mental health) and not others (such as health-related behaviour), and it has been suggested that more health benefits might have been achieved had more interventions focused on people's socioeconomic position (Batty et al., 2010b; Popay et al., 2012). This was corroborated by the fact that change in health outcomes was significantly related to the total spent on interventions specifically targeting personal circumstances (i.e. health, education, and employment) as part of the NDC (Lawless et al., 2010). A clearer understanding of the type of interventions that are most effective in terms of improving health would aid the development of urban regeneration programmes that maximize health gains as well.

This paper reports on the evaluation of the health impact of the Dutch District Approach, an urban regeneration programme that targets problems with employment, education, housing and the residential environment, social integration, and safety. Natural experiments like the District Approach provide a unique opportunity for studying the extent to which urban regeneration programmes effectively ameliorate health problems in "real life" (Craig et al., 2012; Petticrew et al., 2005; West et al., 2008). We compared the health impact of programmes that focused on improving the physical and social environment with those that mainly invested in the socioeconomic position of the residents to find out whether investments in people or investments in place resulted in the greatest health benefits.

2. Methods

2.1. Urban regeneration in the Dutch district approach

The District Approach was launched by the Dutch government in 2007 to improve liveability in the 40 most deprived districts in the Netherlands. The districts were selected by the Dutch government, using register-based physical and socioeconomic deprivation indicators as well as reports of physical and social problems by residents, such as, for example, houses built before 1970, unemployment, nuisance from neighbours, vandalism. The 40 districts that scored highest on a standardized summary deprivation score, and contained more than 1,000 houses, were selected. The 40 districts on average had around 19,500 inhabitants and were located in 18 large Dutch cities, and all had an urban character (Lörzing et al., 2008). By 2012, around 5 billion euros had been spent to ameliorate problems with employment, education, housing and the residential environment, social integration, and safety (Tweede Kamer (2011) [Dutch Parliament]).

The District Approach can be considered to be a procedural programme for which the national government set out a broad thematic framework and provided funds, support, and expert advice. Local authorities were given the autonomy to deliver activities tailored to specific local problems and needs and to organize accountability locally. In 2008 (or in a very few cases, in 2009), the districts started to implement the interventions, and continued to do so until at least 2012. As such, the District Approach can be seen as 40 complex urban regeneration programmes in 40 different contexts.

2.2. Did urban regeneration focus on place or people?

We retrospectively collected information (type, duration, scale) on the interventions that had been implemented through the end of 2011 or early 2012 in order to provide a clear and detailed picture of the contents of the area-based initiatives we were evaluating (Tannahill and Kelly, 2013; Moore et al., 2015). We used standardized questionnaires and face-to-face interviews with the local district managers to inquire about 16 different types of activities, which we selected because of their potential to produce short-term health effects. We were able to collect complete information on the implementation of the District Approach in 36 of the 40 target districts. This survey on the implementation of the District Approach, including the development of the questionnaire, has been described in detail before (Droomers et al., 2014).

Based on these data, we distinguished between area-based initiatives that focused their interventions on improving the place (13 districts) or people's socioeconomic position (11 districts), and target districts that intervened with lower or unknown intensity (12 districts). Four types of interventions focused on people, such as employment programmes, income assistance, comprehensive primary schooling, and the prevention of school dropout. Twelve types of interventions focused on improving the place, such as housing, the physical and social environment, and social safety. We analysed the duration and scale of the activities in order to assess the scale of the combined activities per type of action as being less intensive (score: 0), moderately intensive (score: 1), or more intensive (score: 2). This analysis has been described in more detail elsewhere (Droomers et al., 2014). For each target district, we combined the scores of all 4 types of interventions aimed at people with those of the 12 intervention types aimed at place. Target districts that scored less than 4 on "people interventions" and less than 12 on "place interventions" were considered as having invested too little to be able to expect any health impact (lower or unknown intensity). The ratio between the sum scores on people versus place interventions determines whether the focus of the area-based initiatives is considered to be people or place. A ratio lower than one third (4 versus 12 types of interventions) indicates a focus on improving place, and a ratio higher than one third indicates that relatively more investments focused on people (see text box 1 for a detailed description of several examples of the District Approaches implemented). We executed a face validity check of this categorisation, using the table summarizing the implemented types of interventions, that we have published earlier (Droomers et al., 2014). This check showed that districts categorised as focussing on people indeed implemented many large-scale people oriented interventions (darker squares) and scored low on investments in place (lighter squares), while districts categorised as focussing on place showed the opposite pattern. However, we would like to stress here that the urban regeneration programmes that we categorized as focussing on either place or people, by no means excluded interventions targeting the other category. Focussing on one category only means that the interventions targeting the other category were less numerous or carried out on a smaller scale.

2.3. Study population

We used repeated cross-sectional data from the Dutch Health Interview Survey (HIS) collected between 2004 and 2011. The HIS interviews new respondents every month. Respondents of all ages were interviewed at home using computer-assisted personal interviewing (CAPI). The annual non-response rate was between 35% and 40%.