Project title: Creating energetic and sustainable community research partnerships. Developing the Co-production and Peer Research (CoPPer) network to improve health and reduce inequality

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Plain Language Summary

Involving communities results in better research. In this project we developed new ways of working that will help communities, researchers and organisations work together as equal partners.

Four community organisations were supported to undertake studies on their local environment to understand how this affects health and well-being. By doing this we created evidence on how to work in partnership with communities. All four communities focussed their research on the Built and Natural Environment (BNE). BNE includes local environments such as parks and green spaces, walking routes, playing spaces, cycle routes, and local neighbourhoods where people live. The support to community organisations included funding to help local people undertake research with support and training provided by researchers. The findings from this study have helped us in two key ways:

1.They have produced important community findings on their local environments and how this can affect health.

2.They have supported us with developing our plans for a Co-production and Peer Research (CoPPeR) network.

By working with trusted community organisations, we created opportunities for local people to take a leading role in research. At the same time, we strengthened partnerships between researchers and community organisations.

Through this programme we explored how peer research approaches worked for each of the four partners and what changes would be needed to make this work even better for any future projects. This study has supported our plans for the creation of a Co-production and Peer Research (CoPPeR) network.

Health and community partners in Bradford have welcomed our approach of applying co-production systems. This more inclusive model of research will be of interest to communities and organisations beyond Bradford.

Summary of Research Findings

The focus of this study was to develop and evaluate ways of co-producing research with communities using citizen science approaches, and to understand the mechanisms that make this acceptable, feasible and sustainable in our quest to develop a Centre for Co-production and Peer Research (CoPPeR). In order to achieve this aim, we focussed this research on the topic of the built and natural environment (BNE) as this was considered of high importance to communities after our previous priority setting and qualitative research had identified this as a key determinant affecting health and well-being. Communities identified serious concerns about visible and immediate threats to health from the built/natural environment including pollution, road-safety and traffic, poor quality housing, lack of green space, safety and crime, walkability, and proliferation of fast-food outlets.

These concerns are prominent in the literature and empirical evidence of relationships between BNE and health are now well established. These factors are known to influence health directly (for example, breathing polluted air, living in damp housing) or indirectly (by

hindering our ability to engage in health promoting behaviours such as physical activity, healthy eating or being in green space) which contribute to risk factors for non-communicable diseases such as cardiovascular and respiratory diseases, cancer and diabetes. As unhealthy environments are often clustered in deprived neighbourhoods there is a ‘double whammy’ of risk factors for communities living in these areas who are already vulnerable to ill-health. Interventions to improve the BNE may improve health and reduce inequalities, but there is a paucity of evidence on the effectiveness of built environment infrastructural changes on health and the extent to which communities have been involved in developing these changes.

Developing a Centre for Co-production and Peer Research (CoPPeR) network.

We organised our study on the BNE as a springboard for our efforts to establish an effective and sustainable Centre for Co-production and Peer Research (CoPPeR). The genesis to this was our ActEarly Co-production Strategy which was co-produced with a wide variety of stakeholders including voluntary sector partners, communities, researchers and policy makers. After speaking to nearly 100 people through the application of the Appreciative Inquiry method, a powerful recommendation that surfaced was the need to develop a co-production centre which can facilitate the process to building long-term and trusting relationships between communities, the voluntary sector, research partners and policy makers that would be conducive to delivering co-production in the way described in the ActEarly Co-production Strategy.

Through the application of co-production and citizen science methods we set out to work with communities to investigate the impact of the BNE on residents in four distinct neighbourhoods and whilst pursuing this to simultaneously evaluate the co-production and citizen science methods and systems we deployed to achieve this. This, in turn, would allow us to understand 'what works, for whom and why' which would serve purpose of laying the foundation to shape the CoPPeR in a way that is inclusive, effective and sustainable.

To pursue this research, we selected four distinct neighbourhoods in Bradford which comprised of different ethnic demographics to ensure we were able to include the diverse communities residing in Bradford. We selected the four following neighbourhoods:

Great Horton - This area has many residents who hold Refugee and Asylum-Seeking status.

Manningham and Girlington - Majority of the population in this area belong to the Pakistani/Kashmiri community

East and West Bowling - many of the newly settled Eastern European Roma families live here.

Holmewood - More than 90% of residents are from the White British Community

What unified all the neighbourhoods, despite geographic and identity differences, is the high levels of socioeconomic deprivation experienced by each of the areas. Of equal significance was the concerns noted through community conversations about the problems they experience with the BNE. Having identified the neighbourhoods, we then approached community organisations who were active in these neighbourhoods and worked with the communities with trying to address a range of issues for example food insecurity, welfare support, sport and leisure activities for people who may have had problems in accessing these.

After explaining the intentions and expectations of this study, we were able to gain the support of four community organisations who were active and trusted by the local residents

in each of the four areas. We then assigned one person as a Community Coordinator from each of the organisations who supported us with developing the plans and co-produced the various work packages to fulfil the aims of this study. Some details about the community organisations and the coordinators are listed below in Table 1.

Table 1: An outline of the different community organisations and the coordinators.

Having reached this point, we then organised collaboration agreements between the host research organisation and the four community organisations which established purpose, responsibilities and scope of this study.

We organised three distinct work packages which will be described below as a structured summary.

Work Package One

Members of the research team and each of the community coordinators worked together to co-produce a range of hyper-local community led co-production and peer research projects exploring community priorities around the BNE and health. We followed the values/principles of our ActEarly co-production strategy in all activities to focus on two key research questions. These were:

- What features of the built and natural environment do communities prioritise for health?
- What spatial injustices do communities experience and what do they think will lead to improvements?

Within each neighbourhood, the community coordinator supported us with the conceptualisation, design and delivery of the research. This included recruitment and training of five citizen scientists (peer researchers who live in each of the communities) all the way through to the recruitment of participants to take part in the research to collect data to answer the research questions. The research team mentored the community coordinator and provided all necessary research training for the peer researchers to ensure they can deliver on the tasks that were expected of them (for example taking consent, asking people questions in a sensitive way, focussing on a research question and topic etc). This work package was designed in the following five steps which are summarised below:

Step 1: Each community coordinator convened a place-based action group and recruited five peer researchers who were representative of the target community. Essentially, they belonged to the neighbourhood and shared an identity with the residents who we focused on in each area.

Step 2: Peer researchers and community coordinators received training on the research systems which included the process of taking informed consent, providing clear information and ensuring data remains confidential and in compliance with our NHS Trusts' systems. The peer researchers were then introduced to a range of quantitative and qualitative citizen science data collection tools including the PicVoice App, a photo-elicitation tool which records narratives linked to pictures; ArcGIS123, a survey tool that links to geo-coded pictures as well as traditional survey and interview techniques.

Step 3: Each peer researcher recruited 10 participants all of whom were members of their local community to take part in a walk-along interview. This was initiated by the peer researcher having a conversation with the community coordinator to draw up a list of potential participants from their respective communities. When a list of participants were

drawn up then these were approached and recruited by the peer researchers to go on a walk-along interview.

Step 4: On the day of the walk-along interview, the participant was guided through the consent form for participants by the peer researcher. Data collection was implemented by taking guided walks and utilising the citizen science toolkits. These were selected earlier by the peer researchers and community coordinators during the earlier inception phase.

Step 5: After data collection had been completed, the four distinct groups of peer research groups and their respective community coordinators came together with the research team to facilitate the process of analysing the collected data (which included photographs, maps, audio recordings, drawings). They sought important points of discovery to determine how data can be categorised and synthesised.

Step 6: The research team worked with each of the four case study groups to thematically analyse the data. Research staff who are experienced in qualitative research methods supported this process. We ensured peer researchers and community coordinators were fully involved in the various stages of the analysis.

Step 7: The case study groups were supported to create outputs from the work they had undertaken, and this included the production of short reports, PowerPoint presentations and infographics. This was presented by each of the four sets of peer's researchers and the community coordinators to their local policy makers and decision makers including ward councillors, faith leaders, neighbourhood police teams and school leaders.

Work Package Two: Evaluating Community Inclusive Approaches

Using the four case studies described above, we explored barriers and enablers to co-production and peer research with seldom heard communities, including what features of the citizen science and co-production systems were useful, practical and feasible (or otherwise). Evaluation took place concurrently with Work Package 1 facilitating positive adaptions to the processes we described above. The focus of the evaluation was to better understand:

1. To what extent were our co-production strategy values/ principles achieved and what were barriers or enablers to enacting these values/principles?

2. Which elements and mechanisms of research through co-production methods were acceptable, feasible and impactful for our community organisations and which were not?

3. How did contextual factors (such as place, language, literacy skills) influence alignment with guiding principles, acceptability, feasibility and impact?

Methods

We employed a co-evaluation approach, co-creating with community organisations expectations, objectives and impacts of the evaluation, ensuring transparency and encouraging openness. The community coordinators were involved in supporting the delivery of the evaluation and received relevant training and support on evaluation systems which was delivered through workshop-based learning. This was delivered using three approaches - (1) participatory workshops (2) observations (3) facilitated discussions; each of these are further described below.

1) Participatory workshops

Separate workshops were held at two time-points (4-8 months, and 9-12 months). All peer researchers (n = 20) and community coordinators (n = 4) and the Co-production and Community Engagement Research Fellow (n=1) were invited to share their experiences of co-production activities. Ripple effects mapping was used to understand the wider impacts of co-production activities, including developing an understanding of what worked (in leading to impact) and what did not. Participants were directed to map activities and impacts on a timeline, and to reflect on what has been most (and least) significant and why. A participatory activity was used to explore participants' feelings related to whether their experiences aligned with the guiding principles of co-production, and to identify and discuss other factors that influenced their experience. This was delivered through a KETSO Toolkit. Essentially, different coloured leaves were made available to represent positive, neutral or negative feelings. Participants were able to place the leaves on an illustration of a tree depending on their view of the importance of the different principles in shaping their experience. This art-based approach improves the engagement process and allows people to contribute in a visual and creative way.

2) Observations

Observation allows an independent record of events and behaviours in real-time; within the context they occur. A member of the research team observed three peer research data collection events within each case study (n = 12 events) to capture how the research is implemented (in accordance with the guiding principles as outlined in the co production strategy) and in different contexts. The same researcher also observed three training and support sessions delivered to the community organisations and peer researchers. Observations were recorded through reflective notes related to the feasibility, acceptability and impact of co-producing research with diverse communities with community partners.

3) Facilitated discussions

Community coordinators and the co-production and community engagement research fellow (n=5) were brought together at three different time-points over the life of this study to engage in collective discussions (one discussion group per time-point so therefore three facilitated groups in total). Discussions, facilitated by the researcher focussed on surfacing the barriers and enablers the four partner organisations had experienced in *delivering* the research as described in work package one. We also explored any additional opportunities co production may have provided and reviewing and reflecting on the ongoing findings emerging from the evaluation activities. Community coordinators and the research fellow were able to reflect on whether and how feasibility, acceptability and mechanisms of impact differ across the different contexts and considered any changes we must make to the research design and/or evaluation.

Analysis

Flexible and rapid qualitative analysis methods were employed, and activities were audio-recorded and subsequent data transcribed and coded following each data collection session and supplemented by researcher field notes. Mind mapping techniques were used in the facilitated discussion to develop broad themes and included community coordinators and peer researchers in the analysis. Data was analysed thematically focusing on the extent to which the activities of WP1 have been aligned with the nine guiding co-production principles to consider feasibility, acceptability and impact, as well as contextual influences. These formed the core aspects of the evaluation criteria; however, we provided latitude for new and unexpected themes to emerge which could then be incorporated into the analysis,

particularly being mindful of the mind-mapping exercises and facilitated discussion with community partners may have generate such data.

Work Package 3 - Formulating the Operating Guidelines and developing a blue-print for the CoPPeR

This work package focused on bringing together peer-researchers, community coordinators and wider stakeholders (e.g. Council Co-production lead, NHS Trust Heads of Research, University PPI leads, Public Health Consultants, Voluntary Sector leads etc.) together for an event for the purpose of a workshop to 'dream' and 'design' key features of the CoPPeR network based on learning and findings from this study. This was delivered as an interactive workshop so people could contribute to the process of helping us shape the CoPPeR network.

The research team, including the community coordinators and some peer researchers, were involved in presenting and reflecting on the important learning from the research activities as part of the citizen science projects and from the evaluation work. We organised the workshop for delegates to engage in productive and dynamic conversations to support the idea of establishing a CoPPeR network. The workshop was very well received, and a short report has been produced with the key suggestions.

Conclusion

Some notable findings from the citizen science work include the problematic nature of safety in the local areas and how this impeded residents from spending time outdoors. This included a number of factors such as dangerous driving, quad bikes and mopeds and how parents did not feel confident about their children's safety when outdoors.

Other important reasons were related to lack of good quality green spaces and how fly-tipping and littering adversely affects the BNE. This was something all the peer researchers discovered and heard about the importance of improving this.

Late night fireworks affected neighbourhood peace especially near wedding venues and the volume of traffic on celebration days was disturbing especially during summer months when the number of bookings to the venues increases.

Lack of shelter whilst waiting for buses and poor cycling infrastructure made it difficult for people to actively travel and that is why travelling by personal car is preferred by many people. This was despite high levels of awareness on the detrimental impact of air pollution which is high in all four areas we included in the study.

The developing outputs from the evaluation has allowed us to reach a point where we can confidently write a Vision and Mission strategy to establish a sustainable and inclusive Centre for Co-production and Peer Research (CoPPeR) network. We have developed commitment and capacity in the four community organisations we have worked with and generated an interest amongst peer researchers in participatory research systems.

Along this journey we have evaluated the strengths and weaknesses of the approaches we applied and this has informed our plans for the Vision and Mission strategy and operating guidelines we will produce for any future projects which aspire to effectively include co-production and citizen science approaches.

The development of the CoPPeR network will provide opportunities for a variety of health and social care professionals to work with researchers and the communities in a way that is conducive to what we set out in the ActEarly co-production strategy.

Patient and Public Involvement

This section will be completed in accordance with the short form of the GRIPP2 guidelines, i.e. (1) aim, (2) methods, (3) study results, (4) discussions and conclusions and (5) reflections and critical perspectives.

Aim

An important motivation for conducting the study on the built and natural environment (BNE) came from a priority setting exercise with community members which entailed gathering feedback from Bradford's residents about what they prioritise for children's health and wellbeing. Over 5700 people responded to the priority setting exercise through which we found a significant number of people prioritised improvements to the local environment.

We held multiple open space events with community members to discuss priorities and discussed the plans with members of our long-standing community advisory groups and the issue of green spaces and playing spaces and areas for people to relax in safety frequently dominate community concerns. Across all discussions and events, the environment and its impact on health were prominent as were the topics of inclusion of disenfranchised groups.

As part of our Co-production Strategy development, we have worked with nearly 100 community members and stakeholders to co-produce a strategy to embed community co-production in research. From this exercise it was clear that we needed to make better use of trusted community organisations as anchors to reach seldom-heard populations to research community issues. This forms the main aim of this study, which is to develop a CoPPeR network as identified in our Co-production strategy.

Methods

We have worked closely with the four community organisations in the development of this grant, and this includes the development of the research questions and processes for data collection. During this process they identified training and mentoring as a crucial component of the work for both community organisations and peer researchers, and sustainability of approaches to ensure this is effective and continue to be useful to other researchers after the project has been completed. All four community partners have liaised with their communities and sought advice about what the co-production research should focus on and there was agreement across the organisations, which came from both the community coordinators and the people in the areas they serve.

Throughout the course of delivering this research we have continuously sought the views of community coordinators and peer researchers to understand the ways in which this study could be improved. A formal approach to applying this is by meeting on a monthly basis with the community coordinators and seeking their views on making improvements. This was welcomed by the community coordinators, and they described the processes we put in place as supportive and respectful.

Study results

The data generated through this research study was only made possible through the contribution of public members who played a role in every stage of the study. This includes conception of the research topic, support with design, delivery and dissemination. The research findings on the built and natural environment have been shared by the public members with their local policy and decision makers.

The findings related to the developments of the CoPPeR network have been discussed with the community coordinators who will played in an instrumental role in the 'dream and design' workshop and have contributed to what must be included in the Vision and Mission strategy and the operating guidelines.

Discussion and conclusion

This research study was only made possible through the support we received from the communities who were involved in every stage of this research. The community coordinators and the peer researchers were involved from conception of the idea through to the dissemination of findings and with formulating plans for the CoPPeR network. As this was the cornerstone of this study, we will continue to include them in our dissemination efforts.

Reflections and critical perspectives

Many of the community coordinators have informed us this way of including community members can be 'messy' and presents peer researchers with challenges that can be burdensome. The time frames we worked towards, and the effort needed may have been under-estimated. An example of this is the time we allocated for peer researchers to complete this work (30 hours for each peer researcher) was increased to 45 hours after we appreciated the inherent challenges, they informed us of with this time limitation.

The learning has been useful for other research projects we have liaised with and will be important for our institute and our partner organisations.

Data sharing statement

[https://www.nihr.ac.uk/documents/nihr-position-on-the-sharing-of-research-data/12253] for the NIHR position of the sharing of research data. The NIHR strongly supports the sharing of data in the most appropriate way, to help deliver research that maximises benefits to patients and the wider public, the health and care system and which contributes to economic growth in the UK. All requests for data should be directed to the award holder and managed by the award holder.

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