

**Title: The implementation of Connecting People in community mental health teams in England: A quasi-experimental study**

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## **Abstract**

Loneliness and social isolation have become significant concerns in many countries, particularly among people experiencing mental health problems. A social intervention - Connecting People - has been found to increase their access to social capital, though it has been difficult to implement with high fidelity in community mental health teams (CMHTs) in England. This study aimed to evaluate outcomes for mental health service users of a practitioner-led implementation of Connecting People in CMHTs. It used a pragmatic non-randomised two-group pre-post study to evaluate the implementation process in CMHTs. Implementation materials co-produced with service users was provided to the intervention teams for practitioners to use with the support of a senior social worker in each mental health NHS Trust (n=5). Service users were interviewed at baseline (n=151) and at six-month follow-up (n=127), and their outcome and cost data were analysed on an intention-to-treat basis. Analysis of primary and secondary outcome variables found no differences between the intervention and control groups. The economic evaluation found no significant differences between groups in mean costs or outcomes. The findings suggest that it could be difficult for social workers to implement Connecting People in CMHTs or that it does not improve outcomes for CMHT users.

**Keywords:** Connecting People; community mental health team; community social work; implementation; social intervention; social capital

## Background

Tackling loneliness and building social connections have become key policy concerns in the UK (Her Majesty's Government, 2018; Welsh Government, 2019). Loneliness is most prevalent in early and late life (Victor and Yang, 2012) and is more common among people with depression, anxiety and psychosis (Beutel *et al.*, 2017; Lim *et al.*, 2018). Social isolation and loneliness are associated with increased mortality (Leigh-Hunt *et al.*, 2017; Rico-Uribe *et al.*, 2018), and social isolation with increased cardiovascular disease (Leigh-Hunt *et al.*, 2017). However, less is known about at-risk sub-groups and interventions (Courtin and Knapp, 2017).

Conversely, connectedness has been identified as key to recovery from mental health problems (Leamy *et al.*, 2011). It reduces isolation, increases access to resources, helps to shape identity and supports people to 'move on' in their recovery journey (Sweet *et al.*, 2018). Social interventions to enhance social networks of people with mental health problems show some promise, though evidence of their effectiveness is limited (Anderson *et al.*, 2015; Webber and Fendt-Newlin, 2017). For example, a pilot study has found that Connecting People (Webber *et al.*, 2016) is associated with increased access to social capital for people with mental health problems (Webber *et al.*, 2019).

Connecting People is a social intervention which was developed from a qualitative study of practice in six health and social care agencies in the voluntary and statutory sectors in England (Webber *et al.*, 2015). In a study which involved 73 practitioners and 51 people who used services, researchers undertook ethnographic fieldwork to explore good practice in supporting people with mental health problems, predominantly psychosis, to develop new social connections. The Connecting People intervention model was developed iteratively in focus groups in the study and refined through a Delphi consultation (Webber *et al.*, 2016).

Connecting People's eight-step process involves a worker exploring an individual's existing connections with them; exploring new opportunities for engagement in activities, groups, networks, clubs, societies or resources in the individual's local community; developing an action plan and sourcing appropriate support for them to access their community; addressing barriers to social and community engagement; and reviewing progress towards achieving social goals. Connecting People processes are co-produced by the worker and individual, and require the worker (and their agency) to have well-developed relationships with the local community. The intervention model draws upon strengths-based social work practice (Saleebey, 2012) and is informed by social capital theory (Lin, 2001), with the outcome of social network development occurring as a bi-product of the process of social and community engagement. It has been cited as a model of good practice (National Collaborating Centre for Mental Health, 2019).

Connecting People was piloted in 14 health and social care agencies in the voluntary and statutory sectors in England. An evaluation of its outcomes for 155 people with a learning disability or a mental health problem found that their access to social capital and perceived social inclusion increased when the model was fully implemented (Webber *et al.*, 2019). However, only about a quarter (30/117) of those followed up at nine months experienced an implementation of Connecting People that was considered to be 'high fidelity' - defined as "the extent to which an intervention is delivered without modifying its intended contents, structure, and procedures" (p.331, Soydan, 2015). Achieving high fidelity can be challenging in practice and only one in eight community mental health teams (CMHTs) in the study were able to implement it with high fidelity (Webber *et al.*, 2019).

The pilot study assessed fidelity using parallel ratings provided by both service users and practitioners. Partial implementation occurred when there was minimal engagement with the service users' local community; strengths and goals of service users were not fully assessed, or when practitioners were minimally involved in supporting service users to

develop and maintain their social relationships (Webber *et al.*, 2019). As the pilot study demonstrated, more work is required to implement Connecting People in CMHTs so that people with more severe mental health problems could potentially improve their social connections.

In multi-disciplinary CMHTs, Connecting People is primarily used by mental health social workers, support workers or occupational therapists. In this study, we focus on implementation primarily led by mental health social workers who play important, though diverse, roles in mental health services. Until recently, most local authorities (the main employer of mental health social workers in England) had integrated working arrangements to provide social care services in partnership with mental health NHS Trusts (now it is fewer than 40% of English local authorities (ADASS and NHS Benchmarking Network, 2018)). The impact of funding reductions and historic patterns of resource allocation between health and social care; the impact of healthcare expenditure in recent years being lower than the historical average (Gershlick *et al.*, 2019); and a decline in the AMHP workforce (Stevens *et al.*, 2018), has led many local authorities to rescind social work secondments to refocus practitioners on statutory work such as Mental Health Act 1983 or Care Act 2014 assessments. However, social workers are increasingly being employed by the NHS as care co-ordinators undertaking generic roles alongside community psychiatric nurses and occupational therapists (Boland *et al.*, in press).

The focus on care co-ordination processes and the dominance of medical approaches in health-led CMHTs has eroded the capacity of mental health social workers to deliver social interventions (Nathan and Webber, 2010). The Think Ahead programme was created to help strengthen mental health social work and provide training in social interventions (Clifton and Thorley, 2014). Students are assessed on their delivery of social interventions with individuals, families and communities, including Connecting People. They are supported by Consultant Social Workers, also trained in these interventions, during 200 days of practice

learning in CMHTs. This study recruited teams where graduates of the Think Ahead programme were employed in order to evaluate outcomes for service users of the implementation of Connecting People.

Specifically, this study aimed to answer three related questions:

- (1) To what extent can the implementation of Connecting People improve outcomes for mental health service users (specifically in relation to access to social capital, goal attainment, mental well-being and experience of recovery)?
- (2) To what extent is the implementation of Connecting People cost-effective?
- (3) To what extent can Connecting People be implemented in CMHTs with high fidelity (with the use of co-produced implementation materials)?

A process evaluation which explored the experiences of the implementation of Connecting People for service users and practitioners is reported separately.

## **Methods**

### **Design**

A pragmatic non-randomised two-group (implementation vs. no implementation) pre-post study was used to evaluate outcomes of implementation of Connecting People in CMHTs.

Five mental health NHS Trusts in the south-west, midlands, east and north of England participated in the study. They comprised a mix of urban and rural locations, with pockets of social deprivation. Each Trust selected a CMHT with social workers or students of the Think Ahead programme trained in Connecting People to support the implementation of the intervention. One control CMHT was selected from each Trust with no prior exposure to

Connecting People. Although randomisation of teams to implementation and control arms of the study would have most effectively minimised selection bias, we wanted to avoid contamination of the control teams as much as possible.

### **Co-production of implementation materials**

The Connecting People implementation materials were co-designed by a working group consisting of service users, practitioners, and researchers following co-production principles (Lambert and Carr, 2018). An extensive and iterative process over 11 months developed pre-existing materials into branded publications which clearly articulated what Connecting People was for practitioners (*Practice Guidance*) and service users (*Service User Leaflet*); how it should be implemented (*Implementation Manual*); and how to train others (*Training Manual*). The group worked closely with a design company to ensure the implementation tools and associated website ([connectingpeople.net](http://connectingpeople.net)) were visually appealing and easy to use. Once in the research phase of the study, the working group took on an advisory remit, but it also reviewed data and contributed to the dissemination plan (Moran *et al.*, 2020).

### **Intervention**

The five teams in the implementation arm of the study were provided with the Connecting People implementation tools. Researchers introduced Connecting People to practitioners in these teams, but it was the responsibility of the social work leads within each site to decide how best to implement it according to local needs and service demands. A payment of £1000 was made available to each team to assist the implementation, such as additional training or consultancy. The intervention was delivered in the same way to the CMHTs in the control group on completion of the study.

### **Sample**

Service users from intervention and control teams who were post-acute mental health crisis were invited to participate in the study. There were no exclusion criteria on the basis of diagnosis, although participants needed to be able to give consent to participate in the study and be able to participate in social activities. This largely meant that they were not experiencing a mental health crisis, their basic needs (such as food and shelter) were met, and they were willing to develop new social connections.

The sample size calculation was informed by the pilot study (Webber *et al.*, 2019) which found effect sizes around  $d=0.50$  in the high-fidelity group and  $d=0.30$  in the low-fidelity group at follow-up. Therefore, we expected an overall relationship close to  $d=0.40$ .

Estimating the sample size for running a multiple regression model predicting the post Resource Generator-UK (RG-UK) (Webber and Huxley, 2007) score, assuming an equally large effect size (i.e. partial  $r=0.20$ ) and controlling for (a) pre RG-UK values, (b) demographic variables (age, gender, ethnicity) and (c) intra-class correlation due to teams (estimated at  $ICC=0.04$  from the pilot data) suggested a minimal sample size of 199 (80% power with  $p=0.05$ ; GPower, (Faul *et al.*, 2009)). Such an improvement represented a modest, yet real, change in the resourcefulness of someone's network and has been found in other prospective studies where recovery processes have also been observed (Webber *et al.*, 2011; Webber *et al.*, 2019).

159 participants (79.9% of minimal sample size) were recruited for the study and 151 (95.0%) were interviewed at baseline. A follow-up rate of 84.1% ( $n=127$ ) was achieved at six months (figure 1).

*Figure 1 about here*

## **Procedures**

Potentially eligible participants were provided with study information sheets by their care coordinator or a Clinical Studies Officer in participating teams. The contact details of those who expressed an interest in participating were forwarded to the study researcher who obtained their informed consent to participate. Participants were interviewed by telephone using a standardised interview at baseline and 6-month follow-up to collect outcome data, with an additional demographic schedule at baseline. Face-to-face interviews were made available for participants with English as a second language, learning difficulties or visual or hearing difficulties. Participants were free to withdraw from the study at any point.

## **Measures**

Valid and reliable outcome measures were selected which were brief and sensitive to change. The primary outcome was access to social capital, as measured by the RG-UK (Webber and Huxley, 2007). This instrument measures the resourcefulness of social networks using culturally-relevant items for the UK general population. It has good reliability and validity (Webber and Huxley, 2007); is responsive to change (Webber *et al.*, 2011; Webber *et al.*, 2019); and has been used in diverse samples of people with mental health problems (e.g. Dutt and Webber, 2010; Webber *et al.*, 2014).

Secondary outcomes were Goal Attainment Scaling (GAS) (Turner-Stokes, 2009), Questionnaire about the Process of Recovery (QPR) (Law *et al.*, 2014), Warwick-Edinburgh Mental Well Being Scale (WEMWBS) (Tennant *et al.*, 2007), health-related quality of life (EQ-5D-5L) (Herdman *et al.*, 2011) and the Client Services Receipt Inventory (CSRI) (Beecham and Knapp, 2001).

Participants were asked about the fidelity of the intervention, which offered the opportunity to test via an instrumental variable approach (Angrist *et al.*, 1996) whether there was an effect of the implementation. Ten questions asked whether elements of the intervention were

implemented and to which degree (e.g., "Does the team working with you support you to engage with new groups, services, activities or reconnect to former hobbies or networks in the community?", on a ten point response scale from 'Not at all' (1) to 'Extensively' (10)).

### **Outcome analysis**

We used an 'intention-to-treat' analysis of the two data-points, imputing missing data by carrying last observed values forward (LOCF). This method minimised the impact of missing data and assumed the null hypothesis of no difference between time-points. We used multiple regression models predicting final RG-UK scores to evaluate differences between the arms of the study. In the analysis we incorporated baseline scores, age and gender as control variables and entered the sites as a set of (n-1) dummy variables to control for between-site differences. The same analytic strategy was applied for the secondary outcomes. Analysis was undertaken using Stata v.15 and SPSS v.25.

### **Economic evaluation**

The economic evaluation took three decision-making perspectives:

- a) a health and social care (HSC) perspective including only costs to health and social care organisations
- b) a public perspective including all costs in the HSC perspective as well as costs of criminal justice.
- c) a societal perspective including all costs, including unpaid care and lost productivity.

We used the CSRI to collect data on inpatient hospital stays, community health and social care, medication, criminal justice, out-of-pocket expenditure, lost productivity and unpaid care in the prior 6 months. Costs were calculated applying unit costs from published sources

(e.g. Curtis and Burns, 2018; NHS Digital, 2018) to units of resource use (appendix table B1). The direct costs of delivering the intervention were investigated qualitatively: we asked intervention teams about the costs of delivering Connecting People (e.g. on ongoing training time, materials, room bookings and Connecting People activities) during focus groups held near the end of the study period. QALYs were generated from EQ-5D (van Hout *et al.*, 2012).

Where participants had used a service at baseline, but data on frequency and duration of service use were missing at follow-up, baseline values were carried over. Mean imputation was used to impute missing baseline and follow-up service use frequency and duration variables (approximately 8.1% of data-points contributing to calculating costs and outcomes were missing).

Between-group costs were summarised and compared using clustered t-tests (Donner and Klar, 2000; Herrin, 2012) to account for team-level clustering.

Incremental cost-effectiveness ratios (ICERs) and Net Benefits were calculated to aid decision makers in determining whether the value of the implementation (in terms of outcome gains) was worth the cost associated with it. The ICER is the additional cost of the intervention (mean costs in the intervention group minus the mean costs in the control group,  $\Delta C$ ) divided by the additional benefit of the intervention (mean intervention group outcome minus mean control group outcome,  $\Delta E$ ). A two-stage nonparametric bootstrapping procedure (TSB) (Ng *et al.*, 2013) with 1000 replications was used to assess uncertainty around the ICER while addressing clustering effects and skew in the data. Pairs of mean cost and outcome differences produced by bootstrapping were plotted on the cost-effectiveness plane (Fenwick *et al.*, 2006; Glick, 2007). For an intervention to be deemed cost-effective, the ICER must fall into the south-east quadrant or, if the ICER falls into the south-west or north-east quadrants, the ICER must be less than the decision maker's

willingness to pay ( $\lambda$ ) for an improvement in outcome (or  $\Delta C/\Delta E < \lambda$ ) (Fenwick *et al.*, 2006). Bootstrapped estimates were also used to calculate Incremental Net Benefits ( $INB = \lambda * \Delta E - \Delta C$ ) (Glick, 2007) in order to plot cost-effectiveness acceptability curves (CEACs), which illustrate the probability of cost-effectiveness over a range of values of willingness to pay for a gain in outcome. Analyses were completed in STATA v.15.

## **Ethical approval**

The study was approved by an NHS research ethics committee (17/NW/0688), the Health Research Authority (IRAS 225304), and the R&D Office of each Trust.

## **Results**

Sample characteristics are presented in table 1. Descriptive analyses showed that our sample was exclusively composed of white participants (although two out of 151 identified as 'White Irish', and four as 'White Other'). Due to lack of meaningful variation, this variable had to be excluded from further analysis in contrast to our original plans. The sample was otherwise reflective of the demographic characteristics of people with mental health problems in England with high proportions living alone, living on benefits and with low income (McManus *et al.*, 2016). Characteristics of the participants in the implementation and control groups, and their baseline scores on outcome measures (table 2), were similar, though the control group lived in slightly more deprived communities.

*Tables 1&2 about here*

Table 3 presents the result for the primary outcome analysis: the core analysis model is presented in column three (LOCF model). The regression coefficient for the intervention group is non-significant at  $p=0.05$  and the standard error is very large compared to the coefficient. The estimated value of  $b=0.63$  indicates that after controlling for other variables

participants in the control group showed a RG-UK score that was 0.63 points higher than for respondents in the implementation group. This was equivalent to a standardised coefficient  $\beta=0.06$  (i.e. a partial correlation of  $r=0.06$ ), which is substantially smaller than the effect originally expected (partial correlation of  $r=0.20$ ). Based on the pre-specified analysis, implementation of Connecting People in this study is therefore evaluated as not having shown an effect.

*Table 3 about here*

The other three columns explore the sensitivity of this result to other basic specifications. The 'group-only' model estimates how strongly group and outcome are correlated without correcting for any other variable. The observed coefficient of  $b=-0.41$  (standardised  $\beta=-0.04$ ) indicates a raw correlation in the anticipated direction (participants in the implementation group with higher scores), but is again substantially smaller than the expected effect. The 'observed data' model reports results for complete cases only, which points in the same direction as the LOCF results (standardised  $\beta=0.07$ ). Post-estimation checks and sensitivity analyses found these results to be robust (appendix A).

Principal axis factor analysis (95% of common variance explained by a single factor) and reliability analysis (Cronbach  $\alpha=0.96$ ) showed that the individual fidelity ratings could be represented appropriately by a single score. This 'Fidelity Score' (higher values indicating a more extensive implementation of Connecting People) could be seen as a measure of the exposure to the (supposedly) causally active elements of the intervention. Nevertheless, this score did not correlate with either outcome or implementation group (no additional results from two-stage least squares regression are presented).

Analyses of secondary outcomes (appendix A) also found no effect of the Connecting People implementation. In terms of effect sizes, the largest effect was found for the EQ-5D-VAS, which favoured the implementation group (partial  $r=-0.29$ ). The second largest effect

size was observed for the WEMWBS, favouring the control group (partial  $r=0.18$ ). All other effect sizes were below the defined thresholds for practical relevance.

## **Economic evaluation**

The economic evaluation included 126 individuals in the study (49 intervention group, 77 control group) providing data for both outcome and service utilisation at baseline and follow-up (table 4). Appendix table B2 shows mean frequencies of contacts with health and social care professionals as well as hospital stays at baseline and follow-up. Participants in the control group had higher mean frequency of contacts with social workers and mental health nurses relative to the implementation group over the course of the intervention period (4.18 and 7.14 contacts compared to 3.88 and 3.98 respectively). There were no significant differences in either costs or outcomes between groups at baseline. No criminal justice services were utilised over the intervention period so that costs from the HSE and public perspective over the intervention period were identical. Focus group results indicated that few resources were used in implementing the intervention, apart from the Connecting People implementation pack. Two teams reported allocating more face-to-face time to people receiving the intervention. In one team, a senior practitioner provided dedicated weekly Connecting People supervision sessions; in another, two team members delivered two hours of in-house Connecting People training on five or six occasions to train the whole team. No team took up the £1000 of funding for support with implementing Connecting People. The qualitative data pointed to in-house training representing a substantial input to implementing Connecting People; however, such training did not take place in all implementation teams.

*Table 4 about here*

Table 5 describes bootstrapped mean cost and outcome differences and ICERs. Each confidence interval of the difference included zero, so for each outcome measure and perspective, bootstrapped mean cost and outcome differences were both non-significant. The RG-UK, GAS and QPR estimates were less than 30% of the anticipated meaningful

differences (calculated as the product of effect size set for the study (0.4) and the standard deviation of the baseline outcome (Samsa *et al.*, 1999)), and the WEMWBS difference was slightly less than one point (versus a minimum clinical difference of 7 points (Maheswaran *et al.*, 2012)). Outcome differences were in favour of the implementation group, except for QALY, where the negative difference favoured the control. Cost-per-QALY was over £30,000 from all perspectives (the threshold associated with support by NICE (2013)); all other ICER were negative.

*Table 5 about here*

Mean differences in RG-UK and HSC costs were plotted on the cost-effectiveness plane (figure 2). This shows pairs of cost-outcome differences scattered widely around both axis, indicating uncertainty in the size and direction of both outcome and cost differences. Taking the cost-effectiveness plot and CEAC (Figure B5, appendix B) together suggests no certainty as to which strategy of either control or intervention as implemented would be the more cost-effective.

*Figure 2 about here*

Equivalent plots for other outcomes from the HSC perspective and CEACs illustrating cost-effectiveness probabilities are presented in appendix figures B1-B4 and figures B5-B9 respectively.

In sensitivity analyses, we investigated alternative approaches to valuing unpaid care (replacement cost of a home care worker at £22 per hour) and valuing lost employment at National Living Wage (£7.50 per hour) on the RG-UK, adopting a societal perspective. These alternative costing scenarios had no effect on the significance of costs or outcome differences: the conclusions of the main economic analyses were maintained.

## **Discussion**

In summary, this study found that outcomes for mental health service users of a practitioner-led implementation of Connecting People did not improve in comparison with teams not implementing the model. Given the pre-defined criteria, there was no statistically significant effect on access to social capital (RG-UK) in the implementation group. While this could have been due to lack of statistical power with a smaller sample compared to the original plan, the estimates for the effect size were smaller than expected from previous work as well. The secondary analyses found a potential relationship between the intervention and self-rated health in this sample.

The study found no differences in outcomes between the implementation and control groups, although there were trends for improvement in both study arms. In this study it was not possible to replicate the finding of the pilot study that high-fidelity Connecting People improved RG-UK outcomes (Webber *et al.*, 2019). One interpretation could be that Connecting People is not effective at improving outcomes among people in CMHTs. This cannot be ruled out, but the study was not set up to evaluate the effectiveness of the intervention but rather assess implementation success.

A similar finding of no difference between implementation and control teams was also found in both mean costs and outcomes. We found no evidence that the implementation of Connecting People improved any of the outcomes examined or had an impact on costs. The analyses suggested that there was little evidence for the cost-effectiveness of the intervention as implemented over the treatment provided by control teams.

There was evidence that Connecting People was not implemented with high fidelity and the process evaluation (reported separately) found that in two out of five implementation teams, it was not implemented at all. The lack of correlation of the fidelity score with group allocation also provides evidence of this. Contacts with social workers were fewer than one per month on average and, while there were slightly more with mental health nurses, they were similar

to contacts with GPs. While Connecting People is designed to be integrated into routine practice, and could be utilised during monthly visits, an indication of high fidelity could be increased contact, but there was no evidence of this in the implementation group.

It is likely that infrequent contact with social workers and mental health nurses is reflective of high caseloads, which have become a feature of CMHTs. This may not necessarily mitigate against the implementation of Connecting People, though it may make it more challenging. In addition, analysis of qualitative data collected in the course of the study found that social workers leading the implementation were frustrated by operational norms and priorities which mitigated against the implementation of social interventions (Author's own, submitted). The process evaluation additionally found that practitioners did not prioritise Connecting People implementation because of crisis work; had difficulties in supporting people to travel to community groups or resources; and faced local resource and financial constraints in implementing Connecting People. They also reported limited organisational 'buy-in' and a lack of clarity about the nature of the processes underpinning the Connecting People model following the failure of most sites to deliver training. These findings support the lack of difference in mental health service user outcomes (access to social capital, goal attainment, experience of recovery, mental wellbeing, health-related quality of life and service use) found in this study.

### **Strengths and limitations**

This study provided a practice-relevant evaluation of the implementation of Connecting People in CMHTs, providing it with strong external validity. The analysis conducted in this study was robust. Validated measures were used and the follow-up rate was high, lending further confidence to our findings. Costs in the implementation group did not include direct costs of implementation. However, focus group results suggested that few implementation activities were undertaken. Any associated costs would have appeared small in comparison

to the £1000 available and not taken up by any intervention team for implementation activities.

The sample size of the study was lower than the estimated number required to identify the size of the effect anticipated and about 21% of the observations were missing at follow-up. In the economic analysis mean imputation may have underestimated variability within the sample and carrying forward baseline observations, where data were missing at follow-up, may have been too conservative. Nevertheless, the results were consistent over a number of model-specifications and the analyses showed that the estimated effect was substantially smaller than expected from the previous study (Webber *et al.*, 2019). Therefore, the null result found cannot be explained as a result purely due to the smaller sample size and lack of statistical power.

The sample was ethnically homogenous (all White) despite recruiting in some towns and cities with ethnically diverse populations. This may reflect wider inequalities in access to NICE-recommended therapeutic interventions for black or ethnic minority people with a diagnosis of schizophrenia (Das-Munshi *et al.*, 2018), and highlights the need to provide better information about interventions to these groups (Memon *et al.*, 2016). However, there is an imperative for anti-oppressive practice to address the over-representation of black and minority people in compulsory mental health care (Barnett *et al.*, 2019) and among those in receipt of depot antipsychotic medication (Das-Munshi *et al.*, 2018). As the excess of compulsory detentions could in part be due to lower levels of social support among black and minority ethnic groups (Gajwani *et al.*, 2016), it is particularly important to ensure that interventions such as Connecting People are offered to all ethnic and cultural groups. This could be achieved by integrating it into the CPA process so that it is offered automatically to everyone. Additionally, teams could usefully spend time building new, or strengthening existing, relationships with local black and minority ethnic community groups to ensure that a wide range of opportunities for new social connections are opened up.

People from black and ethnic minority groups were involved in both the development and piloting of Connecting People (Webber *et al.*, 2015; Webber *et al.*, 2019), and there is no evidence to suggest that it lacks ethnic or cultural sensitivity. It has also been adapted for use in Sierra Leone, Nepal and the United States with evidence that its generic processes are acceptable in different ethnic and cultural groups (Fendt-Newlin *et al.*, 2020). However, further research is needed in the UK to explore the use of Connecting People with a diverse range of ethnicities. A deliberative approach to supporting people from black and ethnic minority using social approaches will be required in practice and for recruitment to future research.

A follow-up period of only 6 months was possible in this study. A follow-up of 12 months was planned, though this was not possible as the development of the implementation materials took longer than anticipated. If it had been possible to use the full 12 months as planned, it is possible that higher fidelity implementation of Connecting People may have been evidenced.

Further, randomisation of teams to implementation and control arms of the study would have more effectively minimised selection bias. We decided not to do this to avoid contamination of the control teams, though it may have been easier to implement Connecting People in these teams. On reflection, selecting implementation teams based on where practitioners had been trained in Connecting People may not have represented the strongest basis for selection, as the practitioners selected were typically the most junior members of their teams and so less able to influence the practice of their more senior and experienced colleagues.

## **Conclusion**

These findings highlight difficulties for social workers leading the implementation of a social intervention in CMHTs and it appears that the provision of implementation materials was not

sufficient in its own right. It is possible that additional support is required for better implementation, including a longer set-up and delivery period. Implementation may also have occurred more effectively without the additional pressure of recruiting participants for a research project, which seemed to deter some teams from fully engaging with the process.

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## Figures

**Figure 1. Participant flow diagram ( $n_T$  for Trusts;  $n$  for participants)**

**Figure 2: Mean cost differences verses mean outcome difference estimates for RG-UK from the health and social care perspective**

**Table 1. Sample characteristics**

	<b>Implementation group (n=60) n (%)</b>	<b>Control group (n=91) n (%)</b>
<b>Age (years), mean (sd)</b>	41.4 (14.0)	41.4 (12.4)
<b>Sex</b>		
Male	24 (40.0)	21 (23.1)
Female	36 (60.0)	70 (76.9)
<b>Ethnicity</b>		
White British	58 (96.7)	87 (95.6)
White Irish	0	2 (2.2)
White other	2 (3.3)	2 (2.2)
<b>Marital status</b>		
Single	33 (55.0)	55 (60.4)
Married/cohabiting	13 (21.7)	19 (20.9)
Separated or divorced	13 (21.7)	16 (17.6)
Widowed	0	1 (1.1)
Other	1 (1.7)	0
<b>Living status</b>		
Living alone	25 (41.7)	40 (44.0)
Living with relatives	33 (55.0)	45 (49.5)
Living with others	2 (3.3)	5 (5.5)
Missing	0	1 (1.1)
<b>Education</b>		
Left before GCSE	3 (5.0)	6 (6.6)
GCSE or equivalent	13 (21.7)	13 (14.3)
A level or equivalent	11 (18.3)	16 (17.6)
NVQ or equivalent	8 (13.3)	11 (12.1)
Diploma	11 (18.3)	23 (25.3)
Degree	14 (23.3)	22 (24.2)
<b>Income source</b>		

Salary/wage	5 (8.3)	11 (12.1)
State benefits	50 (83.3)	73 (80.2)
Pension	4 (6.7)	6 (6.6)
Family support	1 (1.7)	1 (1.1)
<b>Income</b>		
Less than £7,785 pa	11 (18.3)	22 (24.2)
£7,786-10,635 pa	15 (25.0)	19 (20.9)
£10,636-14,504 pa	23 (38.3)	38 (41.8)
£14,505-20,394 pa	8 (13.3)	8 (8.8)
More than £20,395 pa	3 (5.0)	4 (4.4)
<b>Index of multiple deprivation (quintiles)</b>		
1 - most deprived	13 (21.7)	28 (30.8)
2	13 (21.7)	24 (26.4)
3	13 (21.7)	19 (20.9)
4	7 (11.7)	10 (11.0)
5 - least deprived	14 (23.3)	10 (11.0)

**Table 2. Outcome measures**

<b>Implementation group</b>	<b>Observations (n) (Baseline/Follow-up)</b>	<b>Baseline Mean (s.d.)</b>	<b>Follow-up Mean (s.d.)</b>
RG-UK	57/48	15.0 (5.6)	16.2 (5.5)
WEMWBS	60/49	33.9 (8.4)	38.8 (9.1)
QPR	60/49	43.4 (12.0)	50.5 (11.5)
GAS	60/37	39.0 (1.3)	58.1 (5.8)
EQ-5D-VAS, Self-rated health	60/49	44.5 (21.3)	52.1 (25.3)
EQ-5D-5L, index values	60/49	0.43 (0.32)	0.52 (0.34)
CP fidelity measure	60/49	62.5 (25.7)	58.8 (29.3)
<b>Control group</b>			
RG-UK	89/77	14.8 (5.6)	15.4 (5.0)
WEMWBS	91/77	35.1 (9.5)	37.9 (9.5)
QPR	91/77	46.6 (12.2)	49.2 (13.2)
GAS	91/63	39.1 (1.3)	56.6 (8.1)
EQ-5D-VAS, Self-rated health	91/77	50.2 (23.1)	56.5 (23.3)
EQ-5D-5L, index values	90/77	0.50 (0.30)	0.57 (0.26)
CP fidelity measure	91/77	61.1 (25.2)	55.6 (28.2)

**Table 3. Results for the main analysis (OLS regression) testing the effectiveness of implementation.**

	Group-only Model	LOCF Model <sup>a</sup>	Observed Data <sup>a</sup>	LOCF Model <sup>a</sup> , bootstapped <sup>b</sup>
Baseline RG-UK		0.62*** (0.06)	0.57*** (0.07)	0.62*** (0.06)
Gender (female)		-0.53 (0.73)	-0.51 (0.87)	-0.53 (0.71)
Age		-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)
Group (control)	-0.41 (0.87)	0.63 (1.79)	0.74 (2.03)	0.63 (1.24)
Constant	15.58*** (0.68)	5.69* (2.21)	6.40* (2.58)	5.69*** (1.76)
Observations	150	144	120	144
R-squared	0.00	0.53	0.48	0.53

Notes. Standard errors in brackets. The dependent variable for all regressions is the final RG-UK score with the last observation carried forward (LOCF), apart from the observed data model (only observed final scores).

<sup>a</sup>Regression controlled for delivery teams (seven dummy variables; teams BI and HI were merged due to their small sample sizes; teams that recruited no participants were excluded).

<sup>b</sup>500 bootstrap samples.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

**Table 4: Baseline costs for the economic evaluation subsample**

<b>Baseline</b>	<b>Implementation group</b>		<b>Control group</b>	
	<b>Mean (S.D.)</b>	<b>N</b>	<b>Mean (S.D.)</b>	<b>N</b>
Weekly health and social care costs	298.74 (634.1)	49	428.82 (922.0)	77
Weekly public sector costs	300.4 (633.5)	49	429.53 (922.2)	77
Weekly societal costs	326.59 (638.6)	49	467.71 (920.9)	77

**Table 5: Bootstrapped mean outcomes, bootstrapped mean costs and ICERs for the economic evaluation subsample**

Measure	Mean outcome difference (95% BCa CI)	HSE/Public sector perspective (£)		Societal perspective (£)	
		Mean cost difference (95% BCa CI)	ICER	Mean cost difference (95% BCa CI)	ICER
RG-UK	0.62 [-1.48, 1.31]		-6 609 <sup>a</sup>		-8 084 <sup>a</sup>
QALY (EQ-5D)	-0.055 [-0.21, 0.08]	-1780 [-7 820, 1 314]	32 552	-2177 [-8 147, 971]	39 817
GAS	0.005 [-8.17, 8.92]		-121 341 <sup>a</sup>		-148 421 <sup>a</sup>
QPR	1.34 [-0.79, 1.20]		-6 405 <sup>a</sup>		-7 835 <sup>a</sup>
WEMWBS	0.92 [-3.08, 4.54]		-1 938 <sup>b</sup>		-2 371 <sup>b</sup>

Note: BCa CI=bias-corrected and accelerated bootstrap confidence interval  
a. the incremental cost of a change in the outcome score (effect size) of 0.4  
b. the incremental cost of a change of 7 points in WEMWBS