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ORIGINAL ARTICLE

Developing a change model for peer worker interventions in mental health services: a qualitative research study

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Aims. A range of peer worker roles are being introduced into mental health services internationally. There is some evidence that attests to the benefits of peer workers for the people they support but formal trial evidence in inconclusive, in part because the change model underpinning peer support-based interventions is underdeveloped. Complex intervention evaluation guidance suggests that understandings of how an intervention is associated with change in outcomes should be modelled, theoretically and empirically, before the intervention can be robustly evaluated. This paper aims to model the change mechanisms underlying peer worker interventions.

Methods. In a qualitative, comparative case study of ten peer worker initiatives in statutory and voluntary sector mental health services in England in-depth interviews were carried out with 71 peer workers, service users, staff and managers, exploring their experiences of peer working. Using a Grounded Theory approach we identified core processes within the peer worker role that were productive of change for service users supported by peer workers.

Results. Key change mechanisms were: (i) building trusting relationships based on shared lived experience; (ii) role-modelling individual recovery and living well with mental health problems; (iii) engaging service users with mental health services and the community. Mechanisms could be further explained by theoretical literature on role-modelling and relationship in mental health services. We were able to model process and downstream outcomes potentially associated with peer worker interventions.

Conclusions. An empirically and theoretically grounded change model can be articulated that usefully informs the development, evaluation and planning of peer worker interventions.

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Key words: Change model, mental health research, peer support, qualitative research.

Introduction

Peer workers – people with personal experiences of mental health problems employed to use those experiences in supporting others – are being introduced into mental health teams internationally. For example, recent UK policy recommended that statutory mental health organisations provide peer support as a means of improving recovery outcomes (Department of Health, 2012), with commissioning guidance for acute and community mental health care suggesting that peer workers improve the skills mix and recovery focus of services (JCPMH, 2012*a*, *b*). In the USA, the role that peer support can play in the delivery of mental health treatment has been recognised, with funding available for peer support specialists who hold state-level accreditation based on approved guidance (Kaufman *et al.* 2012). New Zealand's Mental Health Commission has indicated the use of peer support in primary and community mental health services to support people to regain resilience and prevent relapse (Mental Health Commission, 2012).

Pilot studies, mostly from the USA, have indicated potential benefits of introducing peer worker roles. A cross-sectional survey (Corrigan, 2006) demonstrated significant association between receiving support from 'consumer operated services' and individual levels of empowerment and recovery. A before-and-after study of community-based peer support among veterans found significant improvement in empowerment (Resnick & Rosenheck, 2008). Comparison group studies have found fewer re-hospitalisations (Davidson *et al.* 2006) and longer community tenure (Min *et al.* 2007) in peer support outpatient programmes compared to traditional care. In Australia an observational study found a reduction in readmission rates and bed days in a service providing peer

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support for discharge compared to historical controls (Lawn *et al.* 2008). Claims have been made on the basis of these and similar studies for the cost savings of employing peer workers (Trachtenberg *et al.* 2013).

Randomised Controlled Trial (RCT) evidence is less clear cut. A Cochrane review (Pitt *et al.* 2013) reviewed 11 RCTs, nine from the USA, one from Australia and one from the UK. Five trials compared peer workers with mental health professionals in similar roles (typically case management). Six trials compared mental health services with and without peer workers in an additional role (mentoring or advocacy). The review found no evidence of significant differences in psychosocial, satisfaction or service use outcomes, with the exception of a small reduction in use of emergency services.

The lack of a clear change model – an understanding of how what peer workers do (in comparison with what mental health professionals do) is associated with outcome – was identified as a potential limitation in existing trials (Pitt *et al.* 2013). UK Medical Research Council (MRC) guidance on evaluating complex interventions (Medical Research Council, 2008) recommends modelling, theoretical and empirically, how intervention processes are associated with change in outcome. This is particularly important in psychosocial interventions – such as peer support – where interpersonal aspects of the intervention might mediate outcomes (Ruggeri *et al.* 2013). Research into the implementation of new peer worker roles suggests that a clear understanding of what is expected of peer workers is essential if the role is not to become diluted (Bach & Della Rocca, 2000), limiting the potential benefits of the role (Gillard *et al.* 2013; Moran *et al.* 2013).

It has been theorised that mutually provided peer support between people experiencing similar mental health problems enables individuals to realise personal, relational, and social change, moving beyond a simplistic 'patient' identity (Mead *et al.* 2001). A qualitative interview study with 31 peer workers suggested that a number of role-, and work-environment-related mechanisms had a beneficial impact on the recovery of peer workers themselves; that sharing personal stories contributed to re-authoring peer workers' self-narratives (Moran *et al.* 2012). There is a lack of equivalent literature that models the mechanisms underpinning impact for the people that peer workers support, potentially inhibiting implementation and robust evaluation of peer worker interventions at a time when new peer worker roles are being introduced into mental health services internationally. This paper aims to develop an empirically and theoretically grounded model articulating the change mechanisms underpinning peer worker interventions.

Methods

Setting

A comparative, qualitative case study explored the introduction of peer worker roles into ten mental health services in voluntary and statutory sectors in England. Key features of the cases are given in Table 1.

Sample

In each case up to two peer workers, two service users, two non-peer staff colleagues and two team/line managers were interviewed ($n = 71$). Participants were purposively selected through discussion between a member of the research team and the project lead in each case to ensure that the sample included participants who would be able to provide a range of relevant data (Creswell, 2013). Characteristics of the sample are given in Table 2.

Data collection

All participants completed a structured, deductive qualitative interview exploring implementation issues related to the peer worker role – identified in current literature – including human resource issues, team working, and training and support. The findings of those structured interviews are reported elsewhere (Gillard *et al.* 2014).

Participants were also asked open-ended questions exploring what they felt to be the *essence* of the peer worker role, and what they thought were the critical success factors of the role. This part of the interview was inductive in nature; researchers encouraged participants to address issues that were important to them, asking follow-up questions to elicit in-depth data. It is this inductive part of the interview that is reported here.

Data analysis

Transcripts were analysed using a Grounded Theory approach (Strauss & Corbin, 1998) beginning with an *open-coding* of the data, staying as close to the language used by interviewees as possible, after which we grouped codes together into descriptive categories (e.g. peer expertise; relationship issues). Using a *constant comparison* process (Green & Thorogood, 2004), we next read and re-read data, constructing explanatory themes within three domains: building trusting relationships based on shared lived experience; role-modelling individual recovery and living well with mental health problems; engaging with mental health services and the community.

We applied a *coproduction* approach to the research process (Gillard *et al.* 2012); the research team

Table 1. *Case study characteristics*

Case	Organisation	Setting	Population	Role
STA1	NHS Mental Health Trust	Community Mental Health Team	General adult mental health	Peer Support Worker
STA2	NHS Mental Health Trust	Inpatient Psychiatric Ward	General adult mental health	Peer Support Worker
STA3	NHS Mental Health Trust	Community Mental Health Team/Recovery College	General adult mental health	Recovery Coach/Peer Trainer
PAR1	NHS Mental Health Trust/Peer-led organisation	Inpatient Psychiatric Ward/community activity groups	General adult mental health	Inpatient Advocacy Worker/User Involvement Worker
PAR2	NHS Mental Health Trust/Social Services	Community day service	General adult mental health	Support Worker
PAR3	NHS Mental Health Trust/Peer-led organisation	Inpatient Psychiatric Ward	General adult mental health	Peer Support Worker
VOL1	Peer-led organisation	Community crisis house	General adult mental health	Crisis Support Worker
VOL2	Peer-led organisation	Community arts project	Adult personality disorders	Project Worker
VOL3	Voluntary sector organisation	Community service user network	Black African/Black African Caribbean adult mental health	Project Worker
VOL4	Voluntary sector organisation	Community mental health awareness and wellbeing work	Black & Minority Ethnic adult mental health	Community Activists/Community Health Educators

STA, statutory; PAR, partnership; VOL, voluntary (not-for-profit) sector organisation; NHS, National Health Service.

Table 2. *Key characteristics of the sample*

		Role				Gender		Age							Ethnicity									
Case	Case total	Peer worker	Service user	Staff	Manager	Men	Women	18–25	26–35	36–45	46–55	56–65	Over 65	Not known	White British	White Irish	White European	Black African / Black African Caribbean	Indian	Bangladeshi	Chinese	Asian other	Mixed	Not known
Statutory 1	6	2	1	2	1	4	2	0	2	1	1	2	0	0	6	0	0	0	0	0	0	0	0	0
Statutory 2	7	2	1	2	2	0	7	0	1	5	0	1	0	0	6	0	0	1	0	0	0	0	0	0
Statutory 3	8	2	2	2	2	4	4	1	1	5	0	1	0	0	3	0	0	1	1	1	0	0	2	0
Subtotal	*21*	*6*	*4*	*6*	*5*	*8*	*13*	*1*	*4*	*11*	*1*	*4*	*0*	*0*	*15*	*0*	*0*	*2*	*1*	*1*	*0*	*0*	*2*	*0*
Partnership 1	7	2	2	1	2	3	4	0	1	0	1	1	0	4	2	0	0	0	0	1	0	1	1	2
Partnership 2	7	2	2	2	1	3	4	0	0	3	1	2	1	0	6	1	0	0	0	0	0	0	0	0
Partnership 3	8	2	2	2	2	3	5	2	1	1	4	0	0	0	7	0	0	0	0	0	0	1	0	0
Subtotal	*22*	*6*	*6*	*5*	*5*	*9*	*13*	*2*	*2*	*4*	*6*	*3*	*1*	*4*	*15*	*1*	*0*	*0*	*0*	*1*	*0*	*2*	*1*	*2*
Voluntary 1	7	3	2	1	1	3	4	0	1	6	0	0	0	0	6	0	0	0	0	0	0	0	1	0
Voluntary 2	8	2	2	3	1	2	6	0	2	1	3	0	0	2	3	0	2	0	0	0	0	0	1	2
Voluntary 3	5	2	2	0	1	4	1	0	1	3	1	0	0	0	0	0	0	4	0	0	0	0	1	0
Voluntary 4	8	3	2	2	1	1	7	0	0	1	3	3	1	0	1	2	0	1	0	0	4	0	0	0
Subtotal	*28*	*10*	*8*	*6*	*4*	*10*	*18*	*0*	*4*	*11*	*7*	*3*	*1*	*2*	*10*	*2*	*2*	*5*	*0*	*0*	*4*	*0*	*3*	*2*
Total	71	22	18	17	14	27	44	3	10	26	14	10	2	6	40	3	2	7	1	2	4	2	6	4

comprised clinical-, health service- and service user researchers. Our themes are the product of an iterative process involving cycles of writing and sharing our analysis. The first author, a health services researcher, led on drafting the analysis while one of the service user researchers on the research team [SLG] – who had collected much of the data – sought to ensure that our analytical narrative remained faithful to the reported experiences of our participants. A clinical member of the team – a psychologist [ML] – helped us theorise change mechanisms (see the Discussion).

Results

Core findings are presented below with exemplar quotation from the data. Participant identifiers comprise a case code (see Table 1) and participant code (peer workers, PW; service users, SU; staff, ST; managers, MA). Further data can be found in the appended additional material.

Building trusting relationships based on shared lived experience

Making a connection

Our data suggested that establishing a connection was the necessary first stage of relationship building. Peer workers voiced their lived experiences of mental health problems or of using services, and then service users might recognise that as a similar or shared experience:

> … you go and try and talk to the individual and then I'm upfront. I say, 'You know, I'm a service user. I've been on the ward like you,' and their expression immediately turns to delight and they say, 'Oh, have you! Can you help me?' And, you know, they immediately make a connection with you … (PAR1PW01)

> … it sort of slowly seeped in really that there were people with similar backgrounds and similar histories to mine. I think, at the time, I wasn't aware that … most of the workers had been in hospital … that was something that came out of conversation, when people sort of made reference to having been in … (VOL2SU02)

Building the relationship

As a next stage in relationship building it seemed important that the peer worker demonstrated an understanding of the service user's experiences based on their own lived experience, and in so doing validated the service user's experiences:

> … in her face you could see she was quite relieved as well, that she could talk to someone, I guess, that was feeling something similar to what she was feeling. (PAR3PW02)

> If somebody's coming in and they have self-harmed and if a peer worker … has actually self-harmed in the past they know what that person's going through so they can actually understand why they've done it … and how to deal with that person, because they've actually come through it themselves. (VOL1SU02)

Enabling talking and listening

Once the relationship was established it was important that the peer worker allowed the service user to initiate disclosure, rather than requiring it from them. Service users then felt able to talk openly to peer workers about their experiences and to listen to their advice:

> … they feel they can share a lot more things with you and you can get into an in-depth conversation … someone said to me, 'so what was it that you suffered with?' I just explained to them what I suffered with and they were saying how they suffered with something similar. (PAR3PW02)

Role-modelling individual recovery and living well with mental health problems

Providing hope in the future

The relationship established, our data suggest that peer workers performed a role-modelling function, demonstrating their own recovery and ability to function well socially. A sense of hope in the future – that peer workers had moved on from where service users currently saw themselves – seemed to underlie the role-modelling effect:

> … it buoys you up as well because you know that these people are able to get on with their lives. And, in my view, it's being of value to your community and to your fellow people and these people are. And they've managed to do that even through mental health issues. (PAR2SU01)

Hope held in the work *aspect of the role*

Some participants felt that the fact that the peer worker role was a job of work was important; that being able to work in a caring role represented a wider acknowledgement of the individual's usefulness and value and, as such, a powerful symbol of recovery:

> … the essence is the amount of hope that it gives to other service users, that from … having this label of service user, you might one day be able to be a service user worker … it was important in terms of recovery and hope, that I could believe that this person was doing that role had progressed so far in their own recovery that they were able to actually be part of an organisation

> that was providing services, a very useful and important service for other people. (VOL2SU02)

Challenging stigma

A core aspect of the role-modelling function seemed to lie in peer workers challenging the internalised, self-stigmatising effects of mental health experience through the *normalness* of the working role:

> … so breaking down the stigma, it's a slow and cautious process … but by being open and when people see that when you're well you just act normally … it's only when they're unwell that their behaviour might seem strange but the rest of the time they're just normal people … (PAR1PW02)

Supporting self-care, improving social functioning

A range of positive impacts of role-modelling were described, including increased resilience, empowerment and self-efficacy, supporting service users to take more control over their lives and to function better socially as a result:

> … peer support workers can be the people that help give you the confidence to start doing the activities of daily living … people naturally start backing off from you because they have to, to let you take more control. But it's at that point you can also start feeling overwhelmed and I think it's then that the peer support worker would really be able to help, to say, 'I understand where you're at. I felt so overwhelmed and this is how I dealt with it.' (STA2SU01)

Engaging with mental health services and the community

Bridging the gap

On the basis of relationships, the potential for peer workers to act as a *bridge* between the service user and mental health professionals was recognised:

> I don't know the personal history of the staff … there's that sort of gap that staff have to have with service users and I think that's the thing … [peer workers], they've been through something themselves and are here and it's benefited and they get on with the staff … (PAR2SU02)

Extending trust to the team

Through the bridging function, trust placed by service users in peer worker was also invested in non-peer members of the team:

> … it feeds down so that trust develops a little bit quicker for us … they've got a chance for working more closely with somebody. Whereas we don't have time to … I get [peer workers] in to work closely with who I think they will work well with … and then once they've got that trust he can say, 'Well, tell [staff member]. He'll sort it out for you.' And then because he's said it they trust it's going to happen, because he's developed a closer relationship than I can do. (PAR2ST01)

Removing barriers to engagement

Peer workers enabled service users to overcome their reticence about disclosing difficult personal issues. This openness was retained where service users knew that the peer worker was working as part of a multi-disciplinary team. It was the way in which peer workers related – rather than confidentiality – that seemed important to service users:

> … they tell me a lot more things that they don't tell their care coordinator. I'm sure some of them know that we all communicate anyway and we have to write our notes on the computer but it might just be that actually they feel more comfortable telling me certain things … (STA3PW01)

Peer workers were also able to address stigma that could be causally or inadvertently expressed by the mental health team, acting as a further barrier to engagement:

> It makes talking openly a lot easier. It means the moment you come through the door you know you've got somebody that's going to treat you well because they've been there themselves to some extent, in one form or another. And there isn't that stigma that you sometimes get as well. (VOL1SU01)

Engagement with the community

Peer workers were able to facilitate service users' engagement with the community – often by directly supporting people to attend activities outside of mental health services – breaking isolation, and increasing the range and quality of social contacts that people experienced as a result:

> … a lot of people then were chatting afterwards said, 'It just feels like this is what normal people do. You go out of an evening' and it just felt like a social night out… with a few people who are just making sure everything's are okay, but basically it's a night out that's safe and contained and enjoyable. (VOL2PW02)

> I think there's one lad down the allotment now and the change in that man in the last twelve months has been enormous. You know, he didn't speak to anybody … and now he chats and jokes and whatever. (PAR2PW01)

Discussion

In this discussion we complement our analysis with reference to a growing international literature exploring and explaining processes of peer support in mental health services, and to relevant theoretical literature, to

build a model of change underpinning peer worker interventions (see Fig. 1 below).

Modelling and theorising change mechanisms

Our analysis suggested that building trusting relationships based on shared lived experience was the primary mechanism underpinning peer worker interventions. Understandings of how peer support functions are grounded in shared lived experience; that 'people who have like experiences can better relate and can consequently offer more authentic empathy and validation' (Mead, 2006, p. 4). Relationship and mutuality has been used as the basis for developing peer support roles in services in New Zealand (Scott *et al.* 2011), while a US qualitative study found that a sense of *comradery* underlay the ability of peer workers to form bonds with the people they supported (Coatsworth-Puspoky *et al.* 2006).

We observed two parallel mechanisms flowing from the relationship: role-modelling of recovery by peer workers; engaging service users with mental health services and the community. In-house evaluations of peer worker initiatives often refer to the important role played by peer workers in demonstrating recovery and promoting a sense of hope (Daniels *et al.* 2010; Pollitt *et al.* 2012; Repper & Watson, 2012). Where peer workers 're-author' their own self-narratives as they enact the peer worker role (Moran *et al.* 2012), as role-models they might be said to be helping service users author alternative identities.

Social Comparison Theory (Festinger, 1955) describes the importance of comparing others with our own sense of self, and offers some explanation of how peer workers might act as authors of alternative identities. First, a sense of normality is derived from shared experiences that might otherwise be perceived of as abnormal by society as a whole. Second, where the peer worker is perceived as *doing better* by comparison, feelings of optimism can be promoted in the service user, providing a frame of reference within which to view change in their own identity. Peer workers in an employment project in the US reported that the de-stigmatising effect of their role fostered hope in the people they supported (Mowbray *et al.* 1998).

Social Learning Theory (Bandura, 1977) suggests that significant others provide compelling role-models of how to think, feel and act, determining motivation, behaviour and change. The individual pays attention to role-modelled behaviour that is relevant and has value, and is motivated to replicate that behaviour. If an individual sees someone similar to them succeed, this can increase their own self-efficacy and self-esteem by vicarious reinforcement (Bandura, 1997). Ideas around social learning have been used in theorising mentoring-type interventions in a range of contexts (Bozeman & Feeney, 2007). Our evidence suggested that encountering a peer worker in a highly valued role of work provided hope and motivation for the service user; that they too would be able to move from a dependent role into a role where they provided something of value to others. An alternative, positive self-image, rather than a 'patient identity' (Mead, *et al.* 2001) is modelled.

The relationships between service users and peer workers facilitated a bridging and engaging mechanism. Bordin's trans-theoretical formulation of the therapeutic alliance concept indicates the importance of the relational *bond*; the extent to which the patient feels understood, valued, validated and respected (Bordin, 1979). Evidence has suggested that people using community mental health services can experience difficulties forming relationships

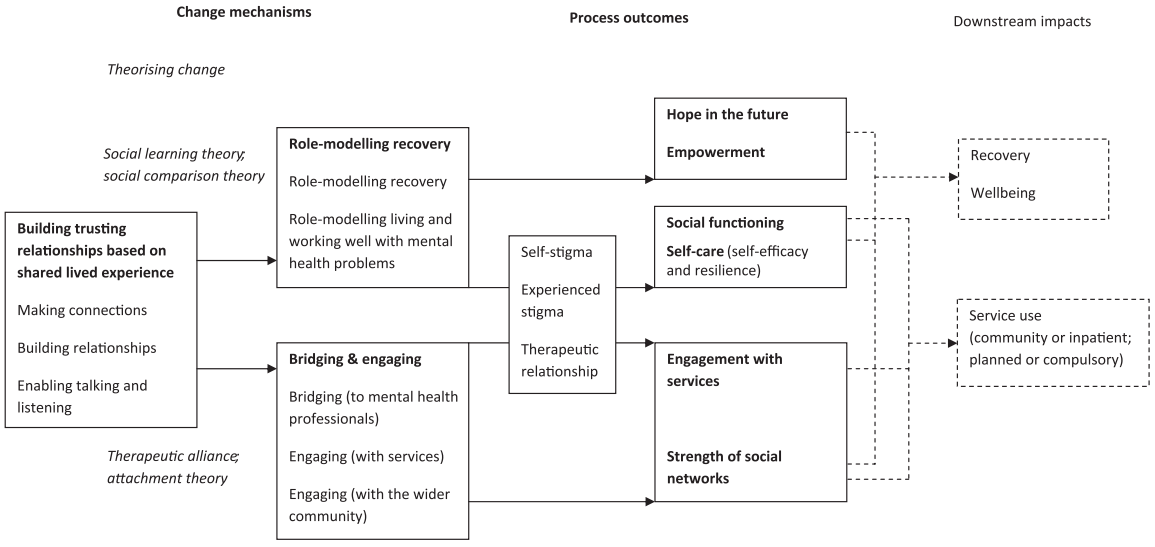

Fig. 1. Change model underpinning peer worker interventions.

with friends and families in their social networks, and with professionals providing mental health services (Catty *et al.* 2011). These difficulties can arise from early relationships with care givers, from which individuals derive a sense of their self-worth and expectations of care from others, often referred to as 'attachment style' (Bowlby, 1973). As a result of developing an insecure attachment style, individuals can have difficulty trusting others (Martin *et al.* 2007). We do not propose that peer workers *improve* attachment (Thompson, 2000). However, where mental health service users experience difficulties in forming trusting relationships, or have had adverse experiences of feeling let down by service providers, our evidence suggests that peer workers might be able to form relational bonds with service users that demonstrate the understanding, validation and respect that underpin therapeutic alliance. In turn, therapeutic alliance has been shown to be associated with attachment to the mental health service team (Catty *et al.* 2011) and to predict engagement in treatment (McCabe & Priebe, 2004; Priebe & McCabe, 2006).

Process outcomes

In the Introduction, we noted the importance of change models articulating associations between intervention processes and outcomes. Our analysis indicated that the role-modelling mechanism was associated, by participants, with a range of individual-level outcomes, including hope and social functioning. These outcomes are readily measurable and their relevance has been indicated: a pilot trial of a peer worker intervention supporting discharge from psychiatric inpatient care reported near significant improvement in hope outcomes in the intervention arm (Simpson *et al.* 2013); comparison group studies suggest that service users of peer-run community services have higher social functioning scores than those using traditional services (Yanos *et al.* 2001; Nelson *et al.* 2006).

Increased engagement, with services and with the community, is also supported in the wider literature. A US longitudinal comparison study demonstrated that people accessing community peer support programmes were more involved in their treatment, and reported more social contacts than those who did not access the service (Ochocka *et al.* 2006). US 'patient navigator' studies show that service users with a navigator are more likely to seek care from preventative, rather than emergency services (Griswold *et al.* 2010; Kelly *et al.* 2013).

Implications

Modelling change mechanisms underpinning the peer worker role has implications for practice, research and planning service delivery. Describing processes of relationship building, role-modelling and engagement enables role and training development for peer workers to be better informed (Repper & Carter, 2011). Supervision provided by managers can be directed towards supporting peer workers with the challenges of exercising those functions. For example, there is evidence that peer workers need support and supervision in managing the specific boundary issues that arise from sharing personal experiences as part of their work (Gillard *et al.* 2013).

Our modelling goes some way towards addressing limitations in the formal evidence base, indicating – empirically and theoretically – a measurable set of outcomes that can be expected to change in response to processes of peer support. We can suggest potential downstream impacts of peer worker interventions by identifying associations between process outcomes and clinical outcomes in the established clinical evidence base. For example, low social functioning has been shown to predict nonattendance at psychiatric outpatient appointments (Killaspy *et al.* 2000), psychiatric admission (Olfson *et al.* 2011) and compulsory admission (Hustoft *et al.* 2013). Service users who miss community psychiatric appointments experience greater risk of relapse and readmission (Killaspy *et al.* 2000) including compulsory admission (Van der Post *et al.* 2013). Social isolation has long been linked to psychiatric admission (Thornicroft, 1991) with an inverse relationship shown between size of social network and use of inpatient services (Webber & Huxley, 2004). Finally, levels of experienced stigma have been linked to help-seeking behaviour in mental health (Rüsch *et al.* 2014).

Our model also suggests potential individual mental health outcomes. For example, mental wellbeing has been conceptualised – as measured using *the Warwick Edinburgh Mental Wellbeing Scale* (Tennant *et al.* 2007) – as feelings of optimism, satisfying interpersonal relationships and positive functioning. A recent qualitative interview-based study found that wellbeing for people experiencing psychosis incorporated hope, empowerment and connectedness (Schrank *et al.* 2013), all broadly mapping onto a subset of our process outcomes.

As such, this extended modelling indicates a strategy for formal evaluation of peer worker interventions whereby the processes of intervention can be hypothesised as leading to specified change in outcome in comparison to a control arm. Where an appropriate primary outcome can be modelled – e.g. psychiatric admission or mental wellbeing – then the cost–benefits of peer worker interventions can be analysed.

Strengths and limitations

The range of service delivery settings and organisational contexts from which our ten cases were drawn

is indicative of the broad validity of the model we propose. However, a discrete set of inpatient or community cases, for example, would have enabled us to be particular about the mechanisms of peer support for specific populations. Nonetheless the range of participant perspectives that informs our analysis suggests a degree of 'triangulation by perspective' (Patton, 1990), lending further general validity to the model.

Our tentative efforts to model the impact of peer workers on downstream outcomes were not derived directly from our study data and are likely to prove simplistic. For example, where peer workers enable people to make progress in their mental health recovery they might become empowered to make use of services as and when they feel they have need of additional support (see, for example, Muesser *et al.* 2002). As such service use might reduce, as a positive outcome, in some situations and increase in others. The model needs further development to account for this complexity, while any experimental study that is informed by the model should accordingly be pragmatic in design (Ruggeri *et al.* 2013) and incorporate a thorough process evaluation that addresses, quantitatively and qualitatively, *a priori* change hypotheses (MRC, 2008). Those reservations notwithstanding, we hope that this paper demonstrates a sensible approach to modelling the impacts of introducing peer workers, informing future role development, planning and formal evaluation of peer worker interventions.

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Conflict of Interest

None.

Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Supplementary materials and methods

The supplementary materials referred to in this article can be found at http://dx.doi.org/10.1017/S2045796014000407

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