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How do recovery-oriented interventions contribute to personal mental health recovery? A systematic review and logic model

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Introduction

Mental health recovery is a complex construct comprising many inter-connecting processes

and outcomes underpinned by access to personal and social resources or "recovery capital" (Tew,

2013). There are many definitions of mental health recovery, which have developed in parallel across

different English-speaking countries. Early definitions set the groundwork for contemporary

descriptions, and it is illuminating to track the progress of these concepts over the past few decades.

In the 1990s, William Anthony set out a "guiding vision" of recovery for the US mental

health service system (Anthony, 1993). Recovery was described as a deeply personal and unique

process of living a satisfying and contributing life irrespective of the limitations caused by mental

illness. Anthony asserted that by growing beyond the catastrophic effects of mental illness, the

individual can experience new meaning and purpose. A decade later in Australia, Andresen, Oades,

and Caputi (2003) advanced a model of recovery underpinned by four component processes (finding

hope, re-establishing a positive identity, finding meaning, and taking responsibility) and five stages

(moratorium, awareness, preparation, rebuilding and growth). Reminiscent of Anthony's model,

hope and self-determination were believed to lead to a meaningful life regardless of whether mental

illness persisted. While these earlier models focused on psychological recovery, Whitley and Drake

(2010) articulated a broader model of mental health recovery describing five core domains: clinical

(e.g., symptoms), physical (e.g., exercise), functional (e.g., employment), existential (e.g., self-

determination) and social (e.g., social support). The clinical and physical domains align more closely

with the medical model of recovery (Slade et al., 2014) and are outside the scope of the current

review. We focus on functional, existential, and social recovery as they are congruent with

contemporary definitions of "personal recovery" (Leamy, Bird, Le Boutillier, Williams, & Slade,

2011; Tew, 2013), which is now central to mental health policy throughout the English-speaking world (Rosenheck, 2012).

In confluence with the abundance of personal recovery definitions, there are a host of validated tools tapping into the underlying mechanisms, processes and outcomes of mental health recovery. Some tools address a single mechanism (e.g., the Working Alliance Inventory) or outcome (e.g., the Quality of Life Index). Other scales consider outcomes associated with a specific intervention (e.g., Illness Management and Recovery Scale), or take a multi-dimensional (e.g., the Recovery Assessment Scale) or multi-stage (e.g., Stages of Recovery Instrument) approach (Sklar, Groessl, O'Connell, Davidson, & Aarons, 2013). These scales tend to cover similar elements of recovery, though their focus varies across clinical (e.g., symptom distress), physical (e.g., self-care), functional (e.g., employment), existential (e.g., empowerment, hope), and social (e.g., social/family relations) domains. A full description of these scales is beyond the scope of this review (the interested reader is directed towards Sklar et al. (2013) for an in-depth review).

In a comprehensive systematic literature review, Leamy et al. (2011) built a conceptual framework of personal recovery to provide an empirical basis for future recovery-oriented research and practice. They described recovery as a non-linear process comprising five elements labelled CHIME (Connectedness, Hope, Identity, Meaning, and Empowerment). The authors highlighted several important targets for future research on recovery including an understanding of which interventions support the CHIME recovery processes, the relative contributions of each CHIME process to personal recovery, and how CHIME processes relate to one another. To address these complex research questions, we need to go beyond traditional systematic review methodology, which is based on the successionist model of causality, i.e., when cause (X) is switched on (e.g., clinical trial), an effect (Y) follows. In contrast, a realist approach states that in order to infer a causal outcome (O) between two events (X and Y), we need to understand the underlying mechanisms (M)

and the contexts (C) that trigger these mechanisms (Pawson, Greenhalgh, Harvey, & Walshe, 2005). As the realist model assumes that intervention mechanisms (rather than the interventions themselves) trigger change, a realist systematic review focuses on "families of mechanisms," (Pawson, 2002) that are common across different interventions (Farkas, Gagne, Anthony, & Chamberlin, 2005). This is a powerful technique, as identifying common critical mechanisms (and their contextual moderators) can inform the development and design of recovery-oriented practices, commissioning and service provision (Topor & Ljungberg, 2016).

Logic model methodology can enhance the realist systematic review (Baxter et al., 2014; Subirana, Long, Greenhalgh, & Firth, 2014) by enabling the researcher to visually map out intervention typologies and their anticipated intermediate and longer-term outcomes to make explicit the mechanisms underpinning these pathways (Baxter et al., 2014). The success of complex interventions depends on the cumulative success of an entire sequence of mechanisms as the programme unfolds (Pawson et al., 2005). The logic model allows us to articulate which intermediate outputs need to be in place for successful final outcomes to occur.

The current study

In the current review, we combine rigorous systematic review and theory driven (realist) logic model techniques to address the following four research questions:

1) Which recovery-oriented interventions support personal (i.e., functional, existential, and social) recovery?

2) How are functional, existential, and social recovery domains inter-related?

3) What are the putative mechanisms of action linking recovery-oriented interventions to their intermediate and longer-term recovery outcomes?

4) What are the contextual moderators of intervention mechanisms and outcomes?

Method

Development of the draft logic model

We produced a draft logic model to provide a framework for the development of our

systematic review protocol (PROSPERO registration number: CRD42017058662). This was initially

informed by preliminary discussions between the researchers and clinicians from four NHS Trusts

in the West Midlands as part of the MERIT Vanguard programme (http://www.wmmeritvan

guard.nhs.uk/about-us/merit-documents/case-studies/focusing-recovery-mental-health). We sought

feedback on the draft logic model (**Supplementary Figure A.1**) from the MERIT recovery

workstream (a group of practitioners, service-users and academics), and at multi-disciplinary mental

health research forums within the MERIT Trusts, regional and national NHS conferences (e.g.,

Expo 2017), and international mental health recovery conferences (e.g., REFOCUS 2017). This

feedback guided subsequent amendments to the draft logic model.

Search and selection strategy

We searched MEDLINE, CINHAL, Embase, PsycINFO, ASSIA, and IBSS from 1990 to

June 2017. We conducted an updated search on 18th March 2019 to ensure inclusion of the most

recent literature. Search-term strings combined intervention types (e.g., individual placement and

support) with the three core components (i.e., putative mechanisms, intermediate, and longer-term

recovery outcomes) of the draft logic model (**Supplementary Table A.1**). The main inclusion

criterion was that the study informed any pathway in the draft logic model (e.g., link between

intervention and mechanism). Studies also had to: 1) be published in a peer reviewed journal; 2)

include participants between 18 and 65 years of age; 3) be written in English; and 4) be conducted in

a high-income country. Studies were excluded if they: 1) examined physical health; 2) had forensic

populations; 3) had veteran populations; 4) had homeless populations; 5) examined substance abuse;

6) studied inpatients; 7) were reviews; or 8) were case studies.

Screening procedure

Search citations were imported into the Covidence review management tool (https://www.covidence.org/). C.W and S.J.F independently screened titles and abstracts against the inclusion criteria. We took an over-inclusive approach: if there was doubt over an abstract, we obtained the full text article for further investigation. C.W screened full text articles for inclusion in the final review.

Data extraction and synthesis of results

We developed a data extraction form prior to conducting the review. It included study details (i.e., author, date, country, sample, setting, study methodology & analysis, intervention) and key findings on mechanisms, contextual moderators and recovery outcomes. We synthesised results in tables, narratively, and in the final logic model.

Critical appraisal of the evidence

Consistent with the ethos of the realist review, we tailored our critical appraisal to eclectically address the divergent subject matter and methodology (Baxter et al., 2014). As recommended by Pawson et al. (2005), we included the key criteria of relevance and rigour. Relevance refers to whether the study addresses the theory/theories under test. Rigour refers to whether an inference drawn by the original researchers has enough weight to make a credible contribution to the test of an intervention theory. As part of our critical appraisal, we also considered converging evidence (i.e., the extent to which individual study findings were corroborated or contradicted by findings from other studies). Finally, we outlined the methodological limitations of each study to enable the reader to judge the weight of evidence for each recovery mechanism, process or outcome identified. When considering individual study limitations, however, it is worth noting that different research methodologies (e.g., qualitative interviews, randomised control trials) have their own strengths and weaknesses (Pawson et al., 2005). The comprehensive approach we took allowed for the inclusion of complementary methodologies.

Results

Description of studies

Of the original 8, 076 abstracts, 675 full text articles were selected for full text retrieval. The updated search (March 2019) yielded a further 1, 508 abstracts, and 109 articles for full text retrieval (totaling 784 full text articles). Of the 784 full text articles, 271 were selected for inclusion with an additional 38 identified by hand search (totaling 309 articles in the final review, **Figure 1**). Details of all included studies are given in **Supplementary Table A.2**. In summary, quantitative studies included: randomised and non-randomised controlled trials, quasi-experimental, before and after, prospective, and cross-sectional designs. Qualitative studies included: ethnographic, interview, focus group, nominal group technique, and photovoice designs.

[Insert Figure 1 about here]

Intervention typologies

We identified four main intervention typologies, though it should be noted that categories are for heuristic purposes only and are not mutually exclusive (e.g., psychoeducational interventions are sometimes delivered by peers).

- *Psychoeducational (individual or group):* illness management and recovery (IMR), psychiatric advance directives (PADs), wellness recovery & action planning (WRAP), the recovery workbook, and recovery colleges.

- *Peer:* peer-support and peer-led programs delivered by peer specialists (i.e., individuals who use their lived experience to deliver mental health services).

- *Social inclusion:* supported employment (including individual placement & support and individual enabling and support), supported housing, community development programs, community wellbeing champions, personal budgets, and strengths model.

- *Pro-recovery & mental health literacy training*: Recovery-oriented training for mental health professionals (e.g., REFOCUS/REFOCUS-PULSAR, the Collaborative Recovery Training Program: CRTP), and mental health first aid (MHFA) training for members of the public.

Recovery outcomes

Most studies examined service user recovery outcomes. Some assessed outcomes experienced by peer specialists as a result of their working role. We grouped personal recovery outcomes into: functional (e.g., employment, education, or housing), existential (e.g., personal confidence, self-esteem, empowerment, identity, meaning, reduction in self-stigma) and social (e.g., social functioning and support, community integration) domains (Whitley & Drake, 2010). We defined QoL and well-being as downstream recovery outcomes, i.e., subsequent to other recovery processes (Gillard, Gibson, Holley, & Lucock, 2015). A small number of studies examined mental health professional (e.g., pro-recovery attitudes) and general public (e.g., stigma reduction) outcomes. We included these in our analysis as we hypothesised that they might contribute towards service users' personal recovery.

Mechanisms of action

Consistent with Pawson's (2005) definition, we defined mechanisms of action as the underlying processes via which interventions can help to bring about recovery outcomes. This definition encompasses the service user as an active participant (e.g., personal budgets provide economic capital, which may, or may not, be used by the service user to promote their recovery). We gathered quantitative evidence for putative mechanisms (e.g., significant associations between proposed mechanisms and recovery outcomes). However, we derived most data on mechanisms from qualitative studies, which referred to mechanisms explicitly, e.g., "theoretical mechanisms" (Proudfoot et al., 2012), "mechanisms of action" (Gidugu et al., 2015), or described "change

models" (Gillard et al., 2015), "dynamic models" (Siu, Tsang, & Bond, 2010) "logic models,"

(Mancini, Hardiman, & Lawson, 2005) or "conceptual models,"(Aikawa & Yasui, 2017).

Contextual moderators

By examining different outcomes (from quantitative studies) of the "same" intervention in

different settings, we could begin to identify potential contexts in which interventions were

successful or unsuccessful (Pawson et al., 2005). We complemented this analysis with a scrutiny of

qualitative studies discussing potential moderators of intervention outcomes (often referred to as

"barriers" or "challenges"). Moderators were identified at the service user, mental health service, and

wider-environmental level (Pawson, 2002).

Research question 1: Which recovery-oriented interventions support functional, existential,

and social recovery?

We collated results from quantitative studies to answer our first research question.

Supplementary Table A.3. presents an overview of all study results.

Functional recovery

Supported employment interventions (e.g., individual placement and support: IPS)

significantly increased likelihood of competitive employment in 36 (out of 39) studies. Potential

reasons for null findings included sub-optimal implementation (Howard et al., 2010) and lack of

integration between vocational and mental health services (Hellström et al., 2017). The strengths

model (*n*=1), working as a peer specialist (*n*=1), supported housing (*n*=1) and peer support (*n*=1)

significantly increased likelihood of positive functional outcomes (e.g., employment, education,

volunteer activities, valued activities). However, Castellanos, Capo, Valderrama, Jean-Francois, and

Luna (2018) found that service users receiving peer specialist services were not more likely to gain

employment than those in the treatment as usual group.

Existential recovery

Existential recovery includes the psychological factors (e.g., self-determination) that can enable service users to feel more in control of their lives (Whitley & Drake, 2010).

Self-confidence, esteem and determination.

Peer-led/support interventions were associated with significant increases in service-user confidence (positive feelings about one's abilities) in three (out of four) studies. In Rabenschlag et al. (2012) the peer-to-peer intervention was only delivered once, which might explain null findings. Working as a peer specialist significantly increased personal confidence in one study. Fourteen studies reported significant increases in service user self-esteem (positive feelings about one's self-worth) or self-efficacy (beliefs about one's capabilities) following illness management and recovery (IMR, $n=2$), IPS ($n=5$), peer-led ($n=5$), peer support ($n=1$) and lay mental health ambassador ($n=1$) interventions. Working as a peer specialist significantly improved self-esteem in one study. Six IPS studies did not report significant improvements in self-esteem. Lack of program level associations between IPS and self-esteem could indicate that the effects of IPS on self-esteem are indirect, e.g., only service users who found competitive work experienced increases in self-esteem (Becker et al., 2001; e.g Michon et al., 2014). Six out of seven studies reported significant improvements in self-determination (i.e., autonomy, proactive behaviour) following IMR ($n=2$), peer-led/support ($n=2$), recovery college ($n=1$) and supported housing ($n=1$) interventions. Peer specialists experienced a significant improvement in self-determination in one study. While a supported housing study did not report an increase in perception of mastery (i.e., self-determination) overall, the sub-group of service users who received higher levels of support experienced significant increases (Grant & Westhues, 2010).

Hope and empowerment

Twelve studies reported significant increases in service-user hope following IMR ($n = 3$), peer-led ($n = 7$), peer support ($n=1$), and recovery workbook group ($n = 1$) interventions. Peer

specialists reported a significant increase in hope in one study. Five studies (peer support, $n = 2$;

IMR, $n = 2$; and service-led wellness recovery and action planning: WRAP, $n = 1$) did not report

significant increases in hope. Authors of the peer support studies suggested that methodological

reasons were behind the null findings, e.g., heterogenous samples, single delivery of the intervention

(Rabenschlag et al., 2012), and small sample size (Simpson et al., 2014). Null findings in the WRAP

study were attributed to the mode of delivery, i.e., by a service provider rather than peer specialist

(Mak et al., 2016). In the IMR study, control participants received an intensive problem-solving

program (rather than treatment as usual) which could explain the lack of significant difference

between intervention and control group. However, low participation rates and small sample size

were also cited as potential reasons (Salyers et al., 2014).

Fourteen (out of 17) studies reported significant improvements in service-user

empowerment (perception of reclaiming power over one's life) following IPS ($n = 2$), peer-led ($n = 9$), peer support ($n = 1$), supported housing ($n = 1$) and recovery workbook group ($n = 1$)

interventions. Peer specialists experienced increased levels of empowerment in two studies. There

were no significant differences in empowerment in three studies (service-led WRAP, $n = 1$; peer-led

"coming out proud", $n = 1$, IPS for mood/anxiety, $n = 1$). Methodological reasons (e.g., small sample

size) and mode of delivery were suggested for the null findings (Mak et al., 2016; Rüsch et al., 2014).

Peer-led WRAP significantly decreased service-user empowerment in one study. Authors

hypothesised that peer-led interventions might provide a more realistic appraisal of the degree of

control service users have over their lives, thus lowering self-perceived empowerment (Cook et al.,

2009).

Identity and meaning

Identity and meaning were not assessed as outcomes in any of the quantitative studies.

Reductions in self-stigma

Only two studies examined self-stigma outcomes (service-led WRAP, peer-led "coming out proud: COP") and reported non-significant findings. Authors of the WRAP study suggested that the null findings could be attributable to the mismatch between the origins of WRAP (United States) and the cultural origins of the Chinese participants, or the delivery of the program by a non-peer (Mak et al., 2016). There was no significant decrease in self-stigma following the peer-led COP intervention. The authors suggested that the three-session intervention may have provided too small a therapeutic dose to achieve changes within the study period (Rüsch et al., 2014).

Quality of life (QoL)

Seventeen studies reported significant improvements in service user QoL following IMR (n = 2), IPS (n= 5), peer-led (n= 3), peer support (n= 3), recovery college (n = 1), strengths model (n=1), and supported housing (n=2) interventions. However, many studies (n=22) did not report significant program level associations with QoL. Most IPS studies (n=12) reported null findings, which might indicate that improvements in QoL are indirect, e.g., follow as a result of gaining work rather than directly as a result of the intervention (e.g Michon et al., 2014; Twamley, Narvaez, Becker, Bartels, & Jeste, 2008). Indeed, Jäckel, Kupper, Glauser, Mueser, and Hoffmann (2017) found that the significant positive effects of supported employment on QoL were fully mediated (i.e., explained) by the program's effects on increasing competitive employment. Three IMR studies reported non-significant results, which might have been attributable to small sample sizes (Egeland et al., 2017; Färdig, Lewander, Melin, Folke, & Fredriksson, 2011), nature of the control intervention (e.g., high intensity) or low participation rates (Salyers et al., 2014). Five peer-led/support studies did not report significant associations with QoL. Authors offered several explanations including: changes in QoL take time to develop (van Gestel-Timmermans, Brouwers, van Assen, & van Nieuwenhuizen, 2012), it is the working alliance rather than modality of delivery (e.g., mental health versus peer worker) that improves QoL (Wrobleski, Walker, Jarus-Hakak, & Suto, 2015), and high

attendance is required for significant impacts on QoL (Stant et al., 2011). The strengths model was not associated with increased QoL in one study, which might relate to the poorer social networks and worse symptoms reported in the intervention group at baseline (Björkman, Hansson, & Sandlund, 2002). Two supported housing studies did not report significant associations with QoL. Authors hypothesised that social isolation or risks to personal safety could have hindered any positive effects on QoL (Killaspy et al., 2016; Weiner et al., 2010).

Wellbeing

Five studies reported significant associations with service user wellbeing following IPS ($n =$ 1), peer-led ($n = 2$), and peer support ($n = 2$) programs. Peer specialists experienced significant improvements in wellbeing in one (of two) studies. Moran, Russinova, and Stepas (2012) found no significant associations between the characteristics of peer specialists' current jobs (e.g., job satisfaction, number of roles) and psychological wellbeing. Two RCTs comparing IPS/IPS for mood/anxiety to traditional vocational rehabilitation also found no significant differences in wellbeing (Hellström et al., 2017; Tsang, Fung, Leung, Li, & Cheung, 2010). The authors of both studies suggested that null findings could be linked to methodology, e.g., small and heterogeneous samples.

Social recovery

Social recovery comprises interpersonal (e.g., establishing and maintaining rewarding relationships) and community (e.g., citizenship or community integration) arenas (Whitley & Drake, 2010).

Social functioning

Only six (out of twelve) studies reported significant improvements in social functioning (e.g., comfort with relationships) following IMR ($n=3$), peer-support ($n=2$) and supported housing ($n=1$) interventions. Two IPS studies found no significant group differences in social functioning, though

significant improvements were observed for the sub-groups returning to work (Burns et al., 2008; Mueser et al., 2004). Peer support did not improve social functioning in two studies, one of which only delivered a single session of training (Rabenschlag et al., 2012). Authors hypothesised that interventions delivered by mental health staff can achieve comparable results to those delivered by peers providing there is a strong therapeutic alliance (Wrobleski et al., 2015). Social functioning significantly decreased in one peer support study. The authors suggested that peer services may be beneficial to some individuals in certain circumstances and settings, but the nature of these circumstances is currently unclear (Castellanos et al., 2018). There was no significant association between the strengths model and improved social functioning in one study, though the intervention group had significantly poorer social networks at baseline (Björkman et al., 2002).

Social networks and support

Numerous studies examined social network or support outcomes (e.g., number and availability of individuals for instrumental and emotional support). Eleven (out of twenty-eight) studies reported significant increases in social networks/support following IMR (n= 1), peer-led (n = 4), peer support (n = 3), service-led WRAP (n=1) and supported housing (n=2) interventions. Peer specialists experienced a significant increase in social support in one study. Two IMR studies reported no significant differences in social support following the intervention. Authors conjectured that improvements in social support may take longer to accrue than illness management skills, as initiating and establishing social relationships is a complex process (Hasson-Ohayon, Roe, & Kravetz, 2007; Mueser et al., 2006). In a third IMR study, the waitlist control group showed a significant improvement in perceived social support in comparison to the intervention group. The authors did not offer an explanation for this result, but did highlight the small sample size in their study (Pratt, Lu, Swarbrick, & Murphy, 2011). There were no program level associations between IPS and social support (n = 4), which might suggest that increasing social support is an indirect

effect of gaining employment (Burns et al., 2008; Latimer et al., 2006; Mueser et al., 2004). Three peer-led interventions found no associations with increased social support (Cook et al., 2009; Pickett et al., 2010; van Gestel-Timmermans et al., 2012), which was attributed to the prolonged time it takes to form social networks (Cook et al., 2009; van Gestel-Timmermans et al., 2012). Two supported housing studies reported no significant increases in social networks (Brunt & Hansson, 2002) or social support (Grant & Westhues, 2010). Two studies reported significantly lower social support (e.g., friendly contact) for individuals in supported housing compared to those in group homes (Weiner et al., 2010) and living independently (de Heer-Wunderink, Visser, Caro-Nienhuis, Sytema, & Wiersma, 2012). Authors hypothesised that there might have been insufficient time (during the study period) for service users to form social contacts, or that social and self-stigma might have affected their desire to form social contacts (Weiner et al., 2010).

Citizenship/community integration

Community integration or "citizenship" describes full and equal participation (e.g., recreational pursuits) within the community. Only four (supported housing) studies explicitly examined community integration outcomes (e.g., involvement in community activities, social participation and recreational interests). All four reported significant improvements in community integration following the intervention.

Outcomes of pro-recovery & mental health literacy training interventions

We identified a small body of studies examining outcomes of recovery-oriented training programmes for mental health professionals. Several studies reported significant improvements in mental health staffs' pro-recovery knowledge, attitudes (Crowe, Deane, Oades, Caputi, & Morland, 2006; Doughty, Tse, Duncan, & McIntyre, 2008; Higgins et al., 2012; Meehan & Glover, 2009; Peebles et al., 2009; Salgado, Deane, Crowe, & Oades, 2010; Slade et al., 2015; Walsh, Meskell, Burke, & Dowling, 2017; Wilrycx, Croon, Van den Broek, & Van Nieuwenhuizen, 2012; Young et

al., 2005), and behaviours, e.g., shift to person-centred support and shared responsibility (Gilburt, Slade, Bird, Oduola, & Craig, 2013).

Three studies examined the impact of recovery-oriented training programmes on service user outcomes. In an RCT of a team-level intervention targeting staff recovery behaviours (REFOCUS) there was no significant difference in service user recovery between intervention and control groups. However, service users in the high-implementing teams had higher recovery scores. (Slade et al., 2015). In a subsequent adaptation of this intervention (REFOCUS-PULSAR), measures of service user recovery were significantly higher in the intervention group (Meadows et al., 2019). Training professionals in CARe (comprehensive approach to rehabilitation) methodology did not lead to significant improvements (in comparison to the care as usual group) in service user recovery, QoL, or social functioning (Bitter, Roeg, van Assen, Van Nieuwenhuizen, & van Weeghel, 2017). The authors suggested three reasons for the null findings: 1) modest fidelity rates (below 60%); 2) characteristics of the CARe methodology, e.g., doesn't incorporate integration of rehabilitation and psychiatric treatment; 3) service users may have had severe impairments precluding the effectiveness of the intervention.

Seventeen studies examined outcomes of mental health first aid (MHFA) training with a range of participant groups including public sector employees, nursing/pharmacy students, community members, and sports coaches. All seventeen studies reported a significant increase in participant skills and knowledge (e.g., about appropriate MHFA strategies). Fourteen (out of fourteen) studies reported a significant increase in participant-reported confidence in helping someone in a mental health crisis. Thirteen out of fourteen studies reported a significant reduction in stigmatising attitudes (e.g., social distance scale). The one study reporting null findings was piloting MHFA for eating disorders. The authors suggested that direct contact with individuals affected by eating disorders may have improved results (Hart, Jorm, & Paxton, 2012). Six out of nine

studies reported significant increases in participant willingness to help someone (e.g., likelihood of advising an individual to seek professional help, first aid actions taken). In Anderson and Pierce (2012) sports coaches were not more likely to offer help following MHFA training. Feedback from participants indicated that they were not approached for help. Again, the pilot MFHA training for eating disorders reported null findings, the reasons for which are unclear (Hart et al., 2012).

Research question 2: How are functional, existential and social recovery domains inter-related?

See **Supplementary Table A.4** for an overview of results from quantitative studies.

Supplementary Table A.5 presents an overview of findings from qualitative studies.

Functional recovery

Gaining competitive employment is a central aspect of functional recovery (Whitley & Drake, 2010), and can help facilitate existential and social recovery (Cabassa, Nicasio, & Whitley, 2013). Quantitative studies reported significant associations between gaining competitive employment and increased service user self-esteem (n=5), hope (n=1), empowerment (n=1) social functioning (n=2), QoL (n=3), wellbeing (n=1), and meaning (n=1).

In qualitative studies, service users (and peer specialists) described four processes via which gaining competitive employment had contributed to their recovery. First, by providing structure, normality and an opportunity to spend time with colleagues, work helped individuals to increase their psychological wellbeing (Liu, Hollis, Warren, & Williamson, 2007), improve their social life (e.g., more social contacts), gain purpose, and reintegrate into society, i.e., citizenship (Koletsi et al., 2009; Moran, Russinova, Gidugu, Yim, & Sprague, 2012). Further, by giving back to society, they increased their sense of interpersonal competence (Salzer & Shear, 2002). Second, by providing a source of economic capital, work gave individuals choices enabling them to increase their self-determination (Koletsi et al., 2009) and improve their QoL (Dunn, Wewiorski, & Rogers, 2008).

Third, by facilitating tangible achievements and a validation of skills, work increased individuals'

hope, confidence, empowerment and self-esteem (Cabassa et al., 2013; Mayer & McKenzie, 2017;

Salzer & Shear, 2002). Finally, work enabled individuals' to develop alternative (i.e., non-illness

related) identities (Porter, Lexén, Johansson, & Bejerholm, 2018) and a better self-image (Liu et al.,

2007), which subsequently increased their feelings of empowerment (Cooke, Daiches, & Hickey,

2015) and reduced self-stigma (Moran, Russinova, Gidugu, et al., 2012).

Existential recovery

Existential and functional recovery share a reciprocal relationship (Cabassa et al., 2013).

Functional recovery can contribute towards existential outcomes (e.g., through the effects of

working), while existential factors (e.g., self-esteem) can contribute towards functional recovery

(Corbière et al., 2011) and downstream recovery processes such as QoL (Jonikas et al., 2013) and

wellbeing (Dunstan, Falconer, & Price, 2017). Self-determination, in particular, is a pre-requisite to

effective participation and citizenship, i.e., social recovery (Petersen, Hounsgaard, Borg, & Nielsen,

2012).

Social recovery

In quantitative studies, social recovery (i.e., social networks and support) contributed

towards functional and existential recovery (Cabassa et al., 2013) by significantly increasing service

user confidence, hope, self-determination (Corrigan & Phelan, 2004), QoL (Brunt & Hansson,

2002), and chance of job acquisition (Corbière et al., 2011). In qualitative studies, service users

described how being part of a supportive group encouraged them to share their thoughts and

experience feelings of equality. These processes, in turn, increased their self-esteem, confidence, and

wellbeing (Dos Santos & Beavan, 2015), and enabled them to change their illness dominated identity

(van Langen, Beentjes, van Gaal, Nijhuis-van der Sanden, & Goossens, 2016).

Research question 3: What are the putative mechanisms of action linking recovery-oriented

interventions to their intermediate and longer-term recovery outcomes?

We identified four putative mechanisms of action via which recovery-oriented interventions

were hypothesised to help service users progress in their recovery journey.

By providing information and teaching skills

By providing information about mental illness and teaching life skills, interventions

(psychoeducational, peer-based and social inclusion) enabled service users to develop the knowledge

and "wellness tools" (Mancini et al., 2005) they needed to manage their own illness and pursue their

goals, i.e., increase self-determination (van Langen et al., 2016). Service users perceived training by

peer specialists (e.g., peer-led WRAP) as especially helpful because they had experiential knowledge

which led to empathic and practical assistance (Proudfoot et al., 2012). Working as a peer specialist,

in turn, fed back into the recovery process by increasing understanding of how to manage one's own

condition, thus improving wellbeing (Proudfoot et al., 2012; Salzer & Shear, 2002). Supported

employment helped service users gain functional recovery (i.e., employment) by teaching work-

related knowledge and skills, thus removing barriers to job seeking (Liu et al., 2007) and acquisition

(Corbière et al., 2011). Finally, mental health literacy interventions (i.e., MHFA) helped reduce

stigmatising attitudes by providing information about mental illness to members of the general

public (Svensson & Hansson, 2014).

By promoting a working alliance

The working (or therapeutic) alliance describes the sense of bonding felt between

practitioner and service user (Moran et al., 2014). In an RCT of peer support, strength of therapeutic

relationship significantly predicted service user QoL in both (peer and mental health practitioner)

conditions (Solomon, Draine, & Delaney, 1995). In a cross-sectional study of IMR, working alliance

was significantly associated with personal confidence and hope, and significantly mediated (i.e.,

partly explained) the positive association between providers' recovery promoting strategies and recovery outcomes (Moran et al., 2014). Moran, Westman, Weissberg, and Melamed (2017) found that working alliance (e.g., professional staff assistance) was significantly associated with personal recovery for supported housing residents. Qualitative studies highlighted working alliance as an important mechanism across several interventions including IMR, IPS, peer support, recovery colleges, supported housing, and REFOCUS. Service users described feelings of connectedness (e.g., "two instead of one"), which in turn, encouraged them to do things for themselves (i.e., self-determination) by building on their strengths (Areberg, Björkman, & Bejerholm, 2013). As a result, they experienced feelings of hope, confidence, empowerment (Austin, Ramakrishnan, & Hopper, 2014; Wallace et al., 2016), meaning (Areberg & Bejerholm, 2013), and a shift in identity from "sick person" to "productive contributor" (Coniglio, Hancock, & Ellis, 2012). Peer-specialists, in particular, can inspire a strong working alliance, underpinned by reciprocity and shared understanding (Jones, Corrigan, James, Parker, & Larson, 2013) encouraging service users to learn, change, and grow to improve their wellbeing and QoL (Bertram & McDonald, 2015; Gillard et al., 2015).

By role modelling individual recovery

Role modelling is a powerful mechanism via which peer specialists can help service users launch their recovery journey. Peer specialists present an example of how to live a "normal life" despite illness, increasing service users' hope for the future as they witness "recovery in action" (Gillard et al., 2015; Proudfoot et al., 2012; van Langen et al., 2016). By embodying how to maintain stability and wellness and navigate social interactions and roles, peer specialists enabled service users to make upward social comparisons (Wood, 1996), engendering feelings of motivation and subsequently positive behavioral change, i.e., self-determination (Proudfoot et al., 2012).

By increasing choice and opportunities

Interventions that increase choice, access, and resources (e.g., psychiatric advance directives, personal budgets, supported housing and employment, recovery colleges, peer-led clubhouses) can increase service-users' perceptions of empowerment (Parkinson & Nelson, 2003; Tew et al., 2015) and self-determination (Bertram & McDonald, 2015; Kim et al., 2007). The provision of economic capital (e.g., personal budgets) enabled service users to select activities outside of the mental health setting, presenting opportunities for mutual and normalised relationships (Tew et al., 2015) and citizenship (Liu et al., 2007). Through the provision of safe, supportive and non-stigmatising environments (e.g., community development projects, recovery colleges) interventions can give service users a social arena in which to meet and talk with peers, increase their social networks (Kaminskiy & Moore, 2015; Ochocka, Nelson, Janzen, & Trainor, 2006; Whatley, Fortune, & Williams, 2015), and learn more about mental health and wellbeing (Zabel, Donegan, Lawrence, & French, 2016). By giving service users their own home, supported housing can present opportunities for engagement in "rehabilitative interactions" and shared daily events, increasing citizenship and feelings of well-being (Lindström, Lindberg, & Sjöström, 2011).

4) *What are the contextual moderators of intervention mechanisms and outcomes?*

We identified contextual moderators at the service user, mental health service, and wider-environmental level.

Service user

For interventions to be successful they need to trigger recovery-promoting actions. Therefore, participants must be willing and able to successfully engage with the intervention (Brantschen et al., 2017). Service user passivity was identified as a negative moderator of functional, existential and social recovery outcomes across several interventions including supported employment (Brantschen et al., 2017), peer support (Castelein et al., 2008), illness management and recovery (Salyers, Matthias, Sidenbender, & Green, 2013) and the strengths model (Tse, Divis, & Li,

2010). Providers described service users' lack of interest in working, their internalised negative views and a lack of work-related skills as key barriers to making referrals for supported employment (Costa et al., 2017). Higher levels of psychiatric symptoms (Nygren et al., 2013) and poorer cognitive functioning (McGurk et al., 2017; McGurk & Mueser, 2006; Metcalfe et al., 2018) significantly reduced the odds of gaining employment or hours of weekly work. In qualitative studies, individuals described psychiatric symptoms (e.g., voices making it difficult to concentrate) as a significant barrier to finding and maintaining work (Koletsi et al., 2009; Moll, Holmes, Geronimo, & Sherman, 2009) and engaging and benefiting from recovery college courses (Zabel et al., 2016). A few studies indicated that cultural background could moderate intervention uptake and success. Cultural mismatch (e.g., between intervention philosophy and service user culture, or service user and practitioner) was found to hinder engagement with the intervention (Mak et al., 2016; Tse et al., 2010) and the development of an optimal working alliance (Chao, Steffen, & Heiby, 2012). In a pilot intervention for African and African Caribbean groups, community and wellbeing champions (CWBCs) experienced resistance from the people they were attempting to engage with as a result of lack of knowledge, taboos and stigma surrounding mental illness in these groups (Mantovani, Pizzolati, & Gillard, 2017).

Mental health services

The success of recovery-oriented interventions is dependent on the implementation of critical components including staffing, organisation, and services (Becker, Xie, McHugo, Halliday, & Martinez, 2006). Studies indicated that high performing supported employment programs (e.g., high competitive employment rates) had case managers who emphasised the strengths approach, were "on board" with the importance of service users working, effectively balanced service users' and employers' needs, and engaged in intra-agency collaboration (Gowdy, Carlson, & Rapp, 2004; Lidz & Smith, 2016; Rapp et al., 2010). In less successful programs, staff were pessimistic about service

users' ability to gain employment (Howard et al., 2010), took a paternalistic role (Glover & Frounfelker, 2013; Mancini et al., 2005), and resisted new practices (Rapp et al., 2010). These attitudes and behaviours were underpinned by weak leadership and a lack of expectations from supervisors (Rapp et al., 2010). Clinicians who do not view employment or self-sufficiency as important factors in recovery present a key barrier to referral to supported employment services, and compound the erroneous view that individuals with mental illness are unable to, or are uninterested, in working (Costa et al., 2017). Paternalistic staff attitudes (e.g., unwillingness to share power or allow service users to make their own decisions) and negative organisational culture (e.g., avoidance of innovation) were also highlighted as potential moderators of the success of psychiatric advance directives (Van Dorn et al., 2006), personal budgets (Tew et al., 2015) supported housing (Petersen et al., 2012), and IMR (Whitley, Gingerich, Lutz, & Mueser, 2009) interventions. Peer specialists reported organisational barriers which engendered feelings of inequality, disempowerment and uncertainty about identity (Gillard, Edwards, Gibson, Owen, & Wright, 2013). They faced a lack of clarity about their job role (Moll et al., 2009), attitudinal (e.g., not being taken seriously), resource (e.g., insufficient renumeration, lack of training) and infrastructure (e.g., lack of control over budgets and organisational decision making) challenges (Bennetts, Pinches, Paluch, & Fossey, 2013; Moll et al., 2009).

Wider environmental moderators

Most evidence for wider environmental moderators was obtained from supported employment studies. An unfavourable labor market was highlighted as a key barrier to competitive employment in sites across Holland (van Erp et al., 2007), London, Ulm-Gunzburg, Rimini, Zurich, Groningen, Sofia (Koletsi et al., 2009) and the US (Becker et al., 2006). Economic disincentives (e.g., perceived benefit trap) were associated with lower likelihood of gaining employment in IPS programs across several countries (Burns et al., 2007; van Erp et al., 2007). Stigma from employers

or managers was highlighted as another barrier (Corbière et al., 2011; Costa et al., 2017; Porter et al., 2018; van Erp et al., 2007). Employment specialists described shying away from words such as "mental illness" and "disability," because of the resistance they had faced from employers when trying to secure employment for individuals with mental illness (Lidz & Smith, 2016).

Critical appraisal of included studies

Please see **Supplementary Table A.6.** for our critical appraisal of the evidence. Each study demonstrated relevance by examining at least one of the pathways (e.g., direct association between an intervention and recovery mechanism or outcome) delineated in our final logic model (see column 5). Some studies (mostly qualitative) examined recovery outcomes associated with an intervention, but also unpacked the mechanisms underpinning these outcomes. Other studies addressed just one part of a pathway (e.g., link between mechanism and outcome), without reference to a specific intervention. Together these studies enabled us to refine our draft logic model. All studies demonstrated a degree of rigour (e.g., carefully described robust methodology), which is to be expected as we only included peer reviewed published articles (column 6). All studies had limitations; however, which are outlined in column 7.

We suggest that the strongest evidence for pathways in our logic model exists when there are converging findings (column 4) from several studies with different methodologies (Baxter et al., 2014). Conversely, weaker evidence exists when there are contradictory findings or results from just one study. Areas of stronger and weaker evidence are highlighted in our logic model (**Figure 2**). Some interventions received much less research attention than others (e.g., personal budgets, community development, recovery workbook). Evidence was strong (converging quantitative and qualitative) for peer interventions, supported employment and illness management and recovery. There was strong converging evidence for three (information and skills, working alliance, & choice and opportunities) of the mechanisms, and strong qualitative evidence for the fourth (role

modelling). There was strong evidence linking interventions (primarily supported employment) to functional recovery; however, evidence for direct links with existential and social recovery, and QoL and wellbeing was inconsistent (discussed below in detail). There was strong quantitative evidence linking pro-recovery and mental health literacy training to general public (increased knowledge, decreased stigma) and mental health professional (recovery-oriented knowledge and attitudes) outcomes. Evidence was weaker or inconsistent for actual changes in behaviour, or for benefits to the recipients of these interventions.

[Insert Figure 2 about here]

Discussion

The main aim of our review was to develop a theoretical framework describing how recovery-oriented interventions can help service users progress towards mental health recovery. Using rich data from over 300 studies, we mapped out a tentative logic model. We delineated intervention typologies and their recovery outcomes (research question 1), the inter-relationships between functional, existential and social recovery domains (research question 2), mechanisms of action linking interventions to their outcomes (research question 3), and the contextual moderators of these mechanisms and outcomes (research question 4).

We identified four main intervention typologies (psychoeducational, peer, social inclusion, and pro-recovery and mental health literacy training) and their outcomes at the service user, mental health service, and general public level. Quantitative studies demonstrated significant associations between psychoeducational, peer and social inclusion interventions and aspects of functional, existential and, to a lesser extent (i.e., results were more inconsistent), social recovery.

There were several inconsistencies in results across quantitative studies (e.g., null versus significant findings). We identified five possible explanations for these inconsistencies, some of which helped further guide development of the logic model: 1) study methodology, e.g., small,

heterogeneous samples and variations in control groups; 2) temporal ordering of recovery outcomes, e.g., some outcomes (e.g., social networks) were contingent on intermediate recovery outcomes (e.g., employment); 3) length of follow-up periods, i.e., some recovery outcomes may have taken longer to develop; 4) intervention and control groups were equally successful as they shared common mechanisms of action (e.g., working alliance); and 5) interventions for recovery outcomes were only successful in certain contexts. We will expand on these points below.

As depicted in the logic model, studies indicated that functional, existential, and social recovery are mutually beneficial, i.e., gains in one domain can contribute to gains in another (Cabassa et al., 2013). For example, functional recovery (e.g., competitive employment) contributed to existential (e.g., self-esteem) and social (e.g., social networks) recovery via several processes (e.g., facilitating social opportunities), while existential recovery (e.g., self-esteem) increased the likelihood of functional (e.g., gaining employment) recovery (Corbière et al., 2011). Thus, interventions were associated with recovery outcomes in bi-directional and reinforcing chains of processes. For example, supported employment increased self-esteem and social support, which both contributed to functional recovery (Corbière et al., 2011). Functional recovery, in turn, further strengthened self-esteem (Corbière, Lanctôt, Sanquirgo, & Lecomte, 2009) and social support (Liu et al., 2007).

We identified four common mechanisms of action (providing information and skills, promoting a working alliance, role modelling individual recovery, and increasing choice and opportunities) via which interventions helped service users to initiate these processes. Each of these mechanisms appeared to trigger increases in self-determination which subsequently led to further recovery gains (Petersen et al., 2012; Slade, 2012). Evidence highlighted the importance of peer interventions, which not only enhanced common mechanisms of action (e.g., experiential knowledge), but were unique in providing role models of individual recovery enabling service users to make upward social comparisons (Wood, 1996).

Recovery-oriented interventions operate within complex systems, the elements of which can moderate their effectiveness. Within the logic model we included moderators at the service user, mental health service and wider environmental level. While service user characteristics (e.g., symptomatology) might impact on intervention outcomes (e.g., Nygren et al., 2013), waiting until the individual is "clinically cured" or "work ready" can be unhelpful and unintentionally iatrogenic (Slade, 2012). To help facilitate recovery, services need to include a structured evaluation of "readiness for recovery" taking into account current personal and environmental states and situational influences on the process of goal attainment (Moran, Baruch, Azaiza, & Lachman, 2016). Approaches to assessing rehabilitation readiness have been articulated by Oades and colleagues through their motivational interviewing techniques (Oades & Anderson, 2012) and by the Boston University Center with their rehabilitation readiness construct (Farkas, Soydan, & Gagne, 2000). The successful evaluation of readiness necessitates a person centred approach, in which the service user is integrally involved in the process to ensure that the judgement of readiness is not solely made by the practitioner (Roberts & Pratt, 2007).

Strengths and limitations

In conducting this realist review of complex interventions, we were subject to theoretical and practical limitations (Pawson et al., 2005). First, mental health recovery is a vast area, meaning we could not cover all recovery domains. We focused on "personal recovery" (and thus recovery-oriented services) in line with growing prominence in international research and policy (Jackson-Blott, Hare, Davies, & Morgan, 2019). This restriction meant that we did not explicitly examine the inter-relationships between all potential recovery domains (i.e., we did not include clinical or physical recovery outcomes in our logic model). Thus, we cannot make definitive statements about the extent of their impact on the other recovery domains (e.g., whether clinical recovery mediated some of the observed associations between functional, existential or social recovery). It is highly plausible that

the five recovery outcomes (functional, existential, social, clinical and physical) have complex and mutually beneficial interrelations (Whitley & Drake, 2010). We found some evidence to suggest that clinical recovery (e.g., a reduction in psychiatric symptoms) can facilitate functional (Nygren et al., 2013) and existential recovery (Macpherson et al., 2016). Conversely, service users described functional recovery as contributing towards their clinical recovery (Koletsi et al., 2009). Likewise, it seems reasonable to hypothesise that similar mechanisms and processes to those underpinning personal recovery could also underpin clinical and physical recovery. The provision of information and skills, for example, enabled service users to manage their symptoms, thus preventing relapse (van Langen et al., 2016), while self-determination has been highlighted as integral to better health outcomes (Ryan, Patrick, Deci, & Williams, 2008). While we acknowledge the importance of clinical and physical recovery, it should be reiterated that personal recovery describes "recovering a life" rather than the elimination of clinical symptoms or illness (Slade et al., 2014). Indeed, personal recovery outcomes (e.g., existential and social domains) present potential clinical end-points for interventions in contrast to the current dominance of clinical recovery (e.g., symptomatology, hospitalisation rates) end-points (Leamy et al., 2011). Future work could be directed towards a deeper understanding of how the five recovery domains interact throughout the recovery journey to develop an understanding of how different interventions, or multiple components within interventions, may complement one another.

Second, we took a macro approach collating evidence from generally defined interventions (e.g., psychoeducational, social inclusion) across a large number of studies. Subsequently, we explicated broadly sketched mechanisms and processes, meaning we could not consider all the nuances associated with delivering interventions in practice. This suited our goal of identifying common critical mechanisms across interventions to inform the development and design of recovery-oriented practices (Topor & Ljungberg, 2016). Future work might incorporate a micro

approach (e.g., smaller sub-set of multi-component interventions delivered at varying intensities) to deepen our understanding of active ingredients, barriers and facilitators (e.g., differential rates of uptake, mode of delivery, duration of follow-up).

Third, we limited our systematic search to published articles meaning we potentially missed (unpublished) work on some of the recovery-oriented interventions we identified in our draft logic model (e.g., timebanks and mental health trialogues). Timebanks offer potential as a 'community currency' to remove barriers to active citizenship (Seyfang, 2003), while mental health trialogues could empower communities to become proactive in communicating about mental health and reduce societal stigma. As these remain crucial barriers to mental health recovery (Slade et al., 2014), empirical research in these two areas is warranted. Fourth, as we were conducting a secondary analysis, we were restricted regarding the outcomes that the individual studies assessed (e.g., mechanisms, functional, existential and social recovery outcomes, moderators of mechanisms and outcomes). Thus, some of the proposed pathways (e.g., from intervention typology to mechanism to recovery outcome) in our logic model were assumed rather than empirically supported.

Clinical and research implications

We have built a tentative logic model delineating some of the mechanisms via which recovery-oriented interventions can help to promote personal recovery, and some of the contexts in which these interventions are likely to be effective. This model (though preliminary) provides an initial framework for commissioning decisions and service provision by identifying the critical components that need to be in place to ensure that recovery outcomes are produced. This information can inform fidelity criteria and governance frameworks, shifting commissioning decisions from a "list" of projects and interventions to an "evidence-based" understanding of how to obtain the outcomes that service users and communities are striving for.

Our critical appraisal indicated that certain aspects of our logic model had more empirical support than others. For example, we hypothesised that pro-recovery and mental health literacy training interventions could potentially help to remove some of the organisational and societal barriers to personal recovery. However, evidential gaps in our chains of reasoning remain. These include the extent to which these interventions impact on actual (as oppose to intended) behaviours, and subsequently, potential benefits to individuals with mental health problems. We need, for example, data on the views of people receiving MHFA support (McCartney, 2017) and on whether MHFA actually leads to more people seeking help (Jensen, Morthorst, Vendsborg, Hjorthøj, & Nordentoft, 2016). Similarly, we identified scant (and conflicting) evidence on the impact of practitioner pro-recovery training on service user outcomes (Bitter et al., 2017; Slade et al., 2015). While there was strong evidence supporting the utility of staff training in improving recovery-oriented staff outcomes, more work is needed to clarify how these changes can translate into clinical practice (Jackson-Blott et al., 2019).

We mapped out a sequence of events contributing to personal recovery and conjectured that QoL and wellbeing were downstream outcomes occurring subsequent to other mechanisms and processes. We based this premise on several observations. First, there were inconsistent (i.e., often non-significant) program level associations with QoL and wellbeing. Second, we found quantitative evidence (some prospective) of significant links between recovery mechanisms and outcomes (e.g., increasing choice, gaining employment) and QoL (e.g Michon et al., 2014) and wellbeing (e.g Negrini, Corbière, Fortin, & Lecomte, 2014). This suggests that there are intermediary processes linking recovery-oriented interventions to QoL and wellbeing. Finally, in qualitative studies, service users described several chains of processes underpinning increases in their wellbeing and QoL (e.g., gaining employment leading to structure, economic capital and social contact, thus improving wellbeing and QoL). Future studies may seek to verify the direction of these proposed chains of

reasoning by modelling longitudinal pathways from interventions to various recovery-related processes and outcomes. This could be achieved through the repeated long-term assessment of mechanisms and outcomes (as delineated in the logic model) and longitudinal data analysis approaches (e.g., cross-lagged and/or path analysis to test the direction of effects and mediational associations).

Despite calls for reform, bio-medical views of recovery still prevail amongst many mental health professionals and the provision of recovery-oriented services remains inconsistent (Jackson-Blott et al., 2019). Future investigations should include increasing our understanding of how we can further promote societal change by challenging the stigmatising assumptions that prevent individuals with mental illness from having the same entitlements as everyone else in the community. Determining news ways of working will be central to this mission (Slade et al., 2014). Transformational co-production presents one way in which we can continue to progress the redistribution of power and control within mental health services, to enhance the design, delivery and monitoring of services and projects (Carr, 2016). Akin to the peer specialist role, co-production recognises that individuals with mental health problems have the knowledge and experience to help make services and society better (Clark, 2015). In this way, co-production could be tested within our logic model framework to examine its contribution to personal recovery (e.g., the recognition of skills and knowledge, self-determination), mental health service milieu (e.g., recovery-oriented behaviours) and the wider community (e.g., the building of social capital). Incorporating co-production into mainstream NHS services; however, will necessitate a willingness to challenge restrictive procedures, professional practice, and cultural norms. Otherwise, there is the danger that it will be absorbed into, and defined, by mainstream mental health organisations (Carr, 2016).

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