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**Title:** Experiences of peer workers and mental health service users with a peer support intervention: applying and critiquing a behaviour change techniques taxonomy

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**Objective**: There is growing evidence for the benefits of peer support in mental health services. Less is known about the specific mechanisms whereby peer support brings about change. The aim of this study was to explore the experiences of adults using mental health services and peer workers to investigate whether the contents of an intentionally provided one-to-one peer support intervention can be adequately described using a standard taxonomy of behaviour change techniques (BCTs).

**Method:** This qualitative comparative case study involved semi-structured interviews with 11 peer workers and 10 people they supported, in 2017-2018. They participated in a randomised controlled trial of a peer support intervention. Data were coded using both an analytical framework, derived from Michie and colleague’s taxonomy of BCTs, and inductive thematic analysis.

**Results:** The findings revealed that the intervention included BCTs from all 16 BCT groupings in the taxonomy, with the emphasis on the groupings of ‘social support’, ‘comparison of behaviour’, ’comparison of outcomes’, ‘regulation’ ‘shaping knowledge’, ‘identity’, and ‘covert learning’. Thematic analysis revealed a new group, ‘relational aspects’, consisting of five new BCTs: sharing of the peer worker’s experiential knowledge; promoting reciprocity, autonomy, and confidentiality; and validation of a safe and trusting relationship.

**Discussion:** A standard taxonomy of BCTs was shown to be broadly applicable to describing the contents of an intentional one-to-one peer support intervention for adults using mental health services. The taxonomy may need to be extended to consider additional BCTs related to encouraging the therapeutic relationship.

**Keywords:** Peer support, Behavioural Change Technique, Qualitative comparative case study.

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**Introduction**

Intentionally provided peer support is increasingly operationalised not only across the English speaking globe, but also in other cultures and languages.(1) Both Higher Income Countries (HICs) and Low and Middle Income Countries (LMICs) demonstrate, to varying degrees, incorporation of peer support in their treatment approach. For example, since reformation of Japanese mental health policy in 2004, intentional and spontaneous peer support has been shown to promote recovery in psychiatric day care users.(2) Whereas in India, for example, numerous challenges to implementing peer support in national mental health services make slow progress, although glimmers of potential opportunities to include peer support at a state level are beginning to emerge.(3) Specifically, in England their National Health Service (NHS) advocates for peer workers as an integral part of the delivery team.(4) This is supported by research indicating that peer support could improve service user experience and quality of life among those with psychosis and schizophrenia.(5) Thus, currently, there is a rapid implementation of peer support across mental health services in England, (and generally more widely in HICs(6)) Benefits have been identified both for those supported (i.e., service users) - and for peer workers. A recent systematic review of one-to-one peer support and meta-analysis of nineteen randomised controlled trials,(7) found a modest benefit for service users in terms of self-reported recovery and empowerment - the latter benefit having been previously identified.(8) Peer workers have also been shown to benefit, through increased self-esteem, enabling continued recovery.(9, 10)

Little is known, however, about the specific mechanisms whereby peer support brings about change; various empirical qualitative studies offer a change/mechanisms model. These studies propose the key mechanisms of social support, enabling engagement with community and use of experiential knowledge/lived experience. Other evidenced-based mechanisms that have been proposed include role-modelling individual recovery and living well with mental health problems;(11) social comparison and the helper therapy principle;(12) and various practical and emotional supports.(13) A further study proposes an empirically-based theoretical model to explain the factors facilitating peer-support for people with serious mental illness, but this is limited to engagement in digital health interventions.(14) A comprehensive framework has not emerged and further research is needed to describe the contents of peer support in mental health in order to better understand the potential mechanisms involved.

Individual recovery for both peer workers and supported service users is likely to involve a degree of behaviour change to achieve the reported results. In other areas of health behaviour change the contents of interventions have been commonly described using a standard taxonomy of Behavioural Change Techniques (BCTs) devised by Michie and colleagues.(15) This taxonomy specifies 93 BCTs organised into 16 groupings. For example, the grouping ‘feedback and monitoring’ includes BCTs such as ‘Monitoring of behaviour by others without feedback’, ‘Feedback on behaviour’ and ‘Self-monitoring of behaviour’. Examples of what this might mean would be firstly, where the desired behaviour change is more exercise per week, the person knows that a tally is being made of how often they exercise in a given week – but no feedback given. Secondly, the person might request feedback from a personal trainer on how their session went, and lastly, the person might take daily measurements using a pedometer of how may steps they took in a day. This taxonomy has been mostly used to describe interventions addressing harmful health behaviours, such as smoking, excessive alcohol consumption or being sedentary.(16) Several studies have used the taxonomy to describe the contents of peer support interventions, such as for breastfeeding(17) or dietary management.(18) However, we could not identify any studies that describe the contents of peer support in mental health using Michie’s BCT taxonomy.

The aim of this study was to explore the experiences of adults involved in a randomised controlled of peer support, to investigate whether the mechanisms of a one-to-one peer support intervention can be adequately described using a standard taxonomy of BCTs.

**Methods**

The current study was nested in a randomised controlled trial of one-to-one peer support for discharge from inpatient mental health care (ENRICH), which tested the effectiveness of a peer worker intervention in reducing readmission post-discharge <https://doi.org/10.1186/ISRCTN10043328>.(19) The study was ethically approved by the London Bridge Research Ethics Committee (reference: 16/LO/0470). Eligible Peer Workers (PWs) were NHS staff, who had been recruited to, and graduated from ENRICH training to support patients transitioning from acute mental health care into the community, over a period of sixteen weeks. This intervention is described in the trial’s protocol publication(19) and was informed by Michie’s BCT taxonomy.(15) Eligible Supported Peers (SPs) (i.e., service users recruited into the trial and received the peer support intervention) were recruited from adult acute psychiatric wards in seven English NHS Trusts across both rural and city geography, with the following eligibility criteria: had at least one psychiatric admission in the previous two years; likely to be discharged within the next month; did not have a diagnosis of any organic mental disorder, or primary diagnosis of eating disorders, learning disability, or drug or alcohol dependency; and assessed by the clinical team as not posing a risk to a potential PW. Exclusions only occurred if a PW or SP declined informed consent, as that was a condition of the study. Recruitment of 590 trial participants (294 allocated peer support) ended in February 2019.

Service user researchers (SUR) - researchers who identify as working from a perspective of having lived experience of mental ill-health/using mental health services - obtained written consent from SPs and PWs to take part in the qualitative part of the study. SPs gave this consent at the same time as written consent was given to take part in the trial. Thirty-eight SPs (peer support condition only) were interviewed at the end-of-intervention and 24 PWs interviewed after four months of delivering the intervention. Interviews lasted between 17-76 mins for SPs and 32-131 mins for PWs, were digitally recorded and transcribed verbatim.

Separate topic guides (see supplementary material B and C) for the SPs and PWs were developed by the ENRICH SUR team using their knowledge of the intervention and their experiential knowledge of using mental health services, peer support and mental ill-health. The topic guide did not specifically prompt the interviewees about their experience of BCTs as part of the intervention, but considered more generally the behavioural strategies employed. The main topics included: typical conversations; the relationship; sharing lived experience of mental ill-health; activities conducted; impact and practicalities of the working partnership between PWs and SPs.

*Case selection*

For the present study, a qualitative comparative case study method(20) was chosen to analyse in-depth accounts of SPs and PWs experiences of the intervention. A purposive approach to selecting a subset of interview transcripts from the main trial qualitative dataset was used to provide data rich cases that would enable us to test the BCT taxonomy. The entire qualitative interview data set had been coded using a codebook iteratively co-produced by the ENRICH research team. MMA and NS chose specific codes from the codebook that were related to elements of the BCT taxonomy and, using NVivo qualitative software, JM retrieved individual transcripts that demonstrated the highest percentage occurrence of those codes

*Analysis*

The Qualitative Comparative Analysis approach(20) allowed us to identify similarities, differences and patterns within and between cases, including comparisons between SPs and PWs. The first, deductive stage of the analysis used template analysis, a type of thematic analysis used to compare data to a given framework or template(21) to assess the extent to which the template usefully explains or theorises the phenomena under investigation, or needs modification. MMA and NS ‘primed’ themselves for the data coding process by familiarising themselves with the BCT taxonomy (our ‘template’) before coding interview data to the items in the taxonomy. The second (inductive) stage, allowed new codes (potential new BCTs) to emerge which were not part of the original taxonomy.

**Results**

Qualitative analysis was completed on 21 interview transcripts from 11 PWs and 10 SPs. Cases were from five out of the seven NHS Mental Health Trusts involved in the trial. Within this cohort there were four PW-SP supporting partnerships, six SPs who were partnered with PWs not interviewed here, and seven PWs who were partnered with other SPs, not interviewed here. This sample included: 13 women and 8 men; their ages range from 18-64 years old; and a range of ethnicities (Table 1). Sex and age were similar for PW and SP; percentage of women was 64% (7/11) and 60% (6/10) respectively, and 64% (7/11) and 70% (7/10) were age 26-64 years respectively. There were differences in ethnicity 80% (8/10, 1 =NA) white participants among PWs, and 33% (3/9, 1=NA) white participants among SPs.

*Deductive Analysis*

Of the 93 BCTs in the taxonomy, 47 were supported by quotes from the interviews; this included 10 quotes from PWs alone, 27 quotes from SPs alone and 10 by quotes from both PW and SP (Table 2). All sixteen groups of the original taxonomy were supported by at least one quote and some groups had many more quotes (groups 3 and 6 – Social Support and Comparison of Behaviour – had nearly a full complement of quotes from both PW and SP). Exemplar quotes from PW and SP are given in the supplementary material A.

*Inductive Analysis*

Inductive analysis revealed one new BCT grouping – relational aspects of behavioural change – consisting of five new BCTs that are described below and illustrated with quotes from the interviews.

1. **Sharing experiential knowledge**: An essential element of peer support involves the PW sharing experiential knowledge of mental ill-health to aid understanding and validation of the SP’s situation.

*“Yes, I suppose it’s more relaxed and more again because I’m not coming from a clinician point of view I’m coming from a shared experience. I suppose when I say oh I’ve shared experience then as well during the conversation they open up a bit more because it’s like well you know you’ve been there situation.”* (Interviewee\_PW6)

 *“…you are talking about people’s conditions and illnesses and offering some context with that… connecting is quite important actually because peers realise they’re not the only people who have been through it.”* (Interviewee\_PW5)

*“The whole reason of sharing is that they can see someone else’s perspective, point of view, that someone else has been there, they are not the only one. So I suppose that then helps them become less worried, not so anxious…”* (Interviewee\_PW4)

1. **Promote reciprocity*:*** To minimise the power imbalance and create an atmosphere of mutual influence, where as much as possible, the SP has equal choice and control as the PW***.***

*“…I think somehow you’ve got to get a balance and there will always be control, there are always power relations. So as much as you talk about mutuality and reciprocity still always power relations I think. But if you brought the peer into that equation more about them deciding when is enough that’s really important I think.”* (Interviewee\_PW8)

*“…‘there was a mutual respect... both know about, you know, cultural references… mental health in common. I felt that she understood what I was talking about which was quite good. Other than that everything, we had respect for each other… I found it was quite different actually, it was quite different to professionals that I was with. I felt I could open up a bit more”* (Interviewee\_SP1)

1. **Promote autonomy:** To empower the SP to advocate for themselves.

*“…she just wanted me to go and ring the Council for her to sort out her Council tax or fill out a form, so that was it. … So I said yes, no problem and then that’s literally what it was, she’s handing me her phone going can you phone the Council. It’s like how about you phone the Council and I’ll just be here for you.”* (Interviewee\_PW9)

*“…she had a lot of choice as well about this process.... So the choices were in her hand as much. And on our side on the ENRICH side we weren’t making that decision for her she was making the decision. …I mean we both brought things to the table in a sense, the peer brings certain maturity...*” (Interviewee\_PW8)

1. **Offer confidentiality:** To offer a secure and trusting environment to enable SPs to be open.

 ***“****I think that’s the best thing about care support worker is someone you can talk openly and they can give their opinion and it’s kept between us so it’s not going to go anywhere else.”* (Interviewee\_SP4)

1. **Validating relationship:**To provide a positive experience of a non-judgemental relationship.

 *“they’re compassionate and I feel comfortable to talk to them you know… Very close, very comfortable. She’s like a role model. Someone to look up to. I’ll never forget her that’s for sure. I’ll always remember her because she’s made a positive impact on my life and not many people have been able to do that… They are more passionate about making people change and feel better. They are more passionate about helping people. You can see it.. you are feeling comfortable, safe, confident and stable before they literally leave your life. I just thought it was one of those people. It was kind of that but completely different. It was a lot more in depth.”-* (Interviewee\_SP3)

**Discussion**

The findings make a novel contribution to the minimal literature describing BCTs in the context of peer support or mental health, suggesting that Michie’s BCT taxonomy(15) is broadly applicable to describing the mechanisms underlying a one-to-one peer support intervention in the context of mental health, with just over half of the taxonomy supported by examples from the data. Thus, the taxonomy is likely to be useful in this context for both informing intervention design and for documenting the application of the intervention, for the purpose of replication. The inductive analysis suggests that the original taxonomy could be expanded to include a further group - ‘Relational Aspects of Behavioural Change’, comprised of five additional BCTs, namely; sharing experiential knowledge, promote reciprocity, promote autonomy, offer confidentiality and, validating relationship. Further work is needed to explore whether these, and other BCTs related to the therapeutic relationship, can be applied to other contexts of peer support and to behaviour change in general.

Preliminary work conducted by JM and RF, suggested that a larger number of BCTs might be appropriate to Peer Support, however this was not supported by this data set. Further research is needed to examine the applicability of these BCTs to Peer Support.

Our findings reflect previous research that has described mechanisms of peer support. For example, Proudfoot and colleagues (2012) described social comparison as an important mechanism(12); in our study the group ‘comparison of behaviour’ (which includes the BCT ‘social comparison’) was well represented with quotations from both PW and SP. Likewise, Gidugu et al (2015) identified practical and emotional support as a key mechanism(13) which clearly aligns to another group represented well by this data; ‘Social support’. Finally, a new BCT, sharing experiential knowledge, suggested in our study would map neatly on to the ‘building trusting relationships’ mechanisms identified by Gillard and colleagues (2015).

This study’s strengths lie in its use of a substantial dataset embedded in a high-quality study, with interviews with both SPs and PWs .(19) The QCA method(20), combining deductive and inductive method, enabled an in-depth process, between and within cases, for critiquing the original taxonomy. The presence of service user researchers on the team, alongside clinical and academic research, allowed us to consider our data from multiple perspectives, coproducing our findings.(22)

There are also limitations to this research. First, the topic guides used to elicit data were not designed around the BCT taxonomy. Further research should explore experiences of specific BCTs in mental health and peer support. Second, although the QCA methodology enabled us to test the extent of fit of the BCT taxonomy to peer support in mental health, not all BCTs were validated by the data. Without use of a larger sample, and a topic guide informed by the BCT taxonomy, we cannot be sure if those BCTs are not relevant or simply missing from the current data set. A larger sample would also enable us to more confidently articulate new BCTs.

Our findings suggest that behaviour change approaches, especially where adapted to the context of mental health care, might be used to enhance peer support interventions, including training and supervision for peer workers, designed to improve implementation efforts and maximise outcomes for those being supported.(23) In addition, it maybe that using BCTs as a framework in PW training would aid PWs to transition from ‘service user’ to ‘service provider’ and/or manage dual identity.(24) Finally, by adding a new group revolving around the relational aspect between supporting and supported person, the study raises the possibility that mental health interventions delivered by other healthcare professionals that are informed by a BCT approach, might consider the importance of these new relational BCTs.

**Conclusions**

To our knowledge this is the first time that BCTs have been used to describe a peer support intervention. This research not only suggests that Michie’s taxonomy is generally applicable to peer support provided in a mental health setting but, that a new ‘relational aspects of behavioural change’ group is also apparent and would appear to be key to peer support.

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***Table 1:*** *Sample demographic characteristics*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Case** | **Sex** | **Ethnicity** | **Age** | **Setting**  |
| **Peer Workers (PWs)** | Interviewee\_PW1 | Woman | White – British | 26-64 | Setting\_1 |
| Interviewee\_PW2 | Woman | White – British | 26-64 | Setting\_1 |
| Interviewee\_PW3 | Woman | Arab | N/A | Setting\_1 |
| Interviewee\_PW4 | Woman | Asian – British | N/A | Setting\_1 |
| Interviewee\_PW5 | Man | White – Other | 26-64 | Setting\_1 |
| Interviewee\_PW6 | Woman | White – Irish | 26-64 | Setting\_2 |
| Interviewee\_PW7 | Woman | White – British | N/A | Setting\_2 |
| Interviewee\_PW8 | Man | N/A | N/A | Setting\_3 |
| Interviewee\_PW9 | Man | White – British | 26-64 | Setting\_3 |
| Interviewee\_PW10 | Woman | White – British | 26-64 | Setting\_4 |
| Interviewee\_PW11 | Man  | White – British | 26-64 | Setting\_5  |
| **Supported Peers (SPs)** | Interviewee\_SP1 | Woman | White – British | 26-64 | Setting\_5  |
| Interviewee\_SP2 | Woman | Black – British | 26-64 | Setting\_5  |
| Interviewee\_SP3 | Woman | White – British | 26-64 | Setting\_5  |
| Interviewee\_SP4 | Man | Mixed/other | 18-25 | Setting\_1 |
| Interviewee\_SP5 | Woman | Asian – British | 26-64 | Setting\_1 |
| Interviewee\_SP6 | Man | N/A | N/A | Setting\_5 |
| Interviewee\_SP7 | Woman | Asian – British | 26-64 | Setting\_2 |
| Interviewee\_SP8 | Man | Asian – British | 18-25 | Setting\_2 |
| Interviewee\_SP9 | Man | White – British | 26-64 | Setting\_3 |
| Interviewee\_SP10 | Woman | Mixed/other | 26-64 | Setting\_1 |
| **Totals** | **21 interviews** | **13 Women****8 Men** | **9 White – British****4 Asian – British****2 Mixed – Other****2 N/A****1 Arab****1 Black – British****1 White – Irish****1 White – Other** | **2 18-25****14 26-64****5 N/A** | **8 Setting\_1****4 Setting\_2****3 Setting\_3****1 Setting\_4****5 Setting\_5** |

N/A=not available as theydeclined to answer

Setting=specific NHS Trust

***Table 2:*** *Depiction of Behaviour change techniques (BCTs) and where quotes were found for peer worker (PW), supported peers (SP), both or neither.*

| **Number** | **Grouping and BCTs** | **Presence of PW quote** | **Presence of SP quote** |
| --- | --- | --- | --- |
| **1.0** | **Goals and planning** |
| **1.1** | Goal setting behaviour |  Both |
| **1.2** | Problem solving | No | Yes |
| **1.3** | Goal setting (outcome) | Neither |
| **1.4** | Action planning | Neither |
| **1.5** | Review behaviour goal(s) | No | Yes |
| **1.6** | Discrepancy between current behaviour and goal | Neither |
| **1.7** | Review outcome goal(s) | Neither |
| **1.8** | Behavioural contract | Neither |
| **1.9** | Commitment | No | Yes |
| **2.0** | **Feedback and monitoring** |
| **2.1** | Monitoring of behaviour by others without feedback | Neither |
| **2.2** | Feedback on behaviour | Neither |
| **2.3** | Self-monitoring of behaviour | No | Yes |
| **2.4** | Self-monitoring of outcome(s) of behaviour | No |
| **2.5** | Monitoring of outcome(s) of behaviour without feedback | No | Yes |
| **2.6** | Biofeedback | Neither |
| **2.7** | Feedback on outcome(s) of behaviour |  Both |
| **3.0** | **Social suppor** |
| **3.1** | Social support (unspecified) |  Both |
| **3.2** | Social support (practical) | Both |
| **3.3** | Social support (emotional) | No | Yes |
| **4.0** | **Shaping Knowledge** |
| **4.1** | Instruction on how to perform thebehaviour | Both |
| **4.2** | Information about antecedents | No | Yes |
| **4.3** | Re-attribution | No | Yes |
| **4. 4** | Behavioural experiments | Yes | No |
| **5.0** | **Natural consequences** |
| **5.1** | Information about health consequences | Neither |
| **5.2** | Salience of consequences | Yes | No |
| **5.3** | Information about social and environmental consequences | No | Yes |
| **5.4** | Monitoring of emotional consequences | Neither |
| **5.5** | Anticipated regret | Neither |
| **5.6** | Information about emotional consequences | No | Yes |
| **6.0** | **Comparison of behaviour** |
| **6.1** | Demonstration of the behaviour | Both |
| **6.2** | Social comparison | Both |
| **6.3** | Information about others’ approval | No | Yes |
| **7.0** | **Associations** |
| **7.1** | Prompts/cues | Yes | No |
| **7.2** | Cue signalling reward | Neither |
| **7.3** | Reduce prompts/cues | Neither |
| **7.4** | Remove access to the reward | Neither |
| **7.5** | Remove aversive stimulus | Neither |
| **7.6** | Satiation | Neither |
| **7.7** | Exposure | Neither |
| **7.8** | Associative learning | No | Yes |
| **8.0** | **Repetition and substitution** |
| **8.1** | Behavioural practice/rehearsal | Yes | No |
| **8.2** | Behaviour substitution | Neither |
| **8.3** | Habit formation | No | Yes |
| **8.4** | Habit reversal | No | Yes |
| **8.5** | Overcorrection | Neither |
| **8.6** | Generalisation of target behaviour | No | Yes |
| **8.7** | Graded tasks | Yes | No |
| **9.0** | **Comparison of outcomes** |
| **9.1** | Credible source | Both |
| **9.2** | Pros and cons | No | Yes |
| **9.3** | Comparative imagining of future outcomes | Neither |
| **10.0** | **Reward and threat** |
| **10.1** | Material incentive (behaviour) | Neither |
| **10.2** | Material reward (behaviour) | Neither |
| **10.3** | Non-specific reward | No | Yes |
| **10.4** | Social reward | Yes | No |
| **10.5** | Social incentive | Neither |
| **10.6** | Non-specific incentive | Neither |
| **10.7** | Self-incentive | No | Yes |
| **10.8** | Incentive (outcome) | Neither |
| **10.9** | Self-rewards | Neither |
| **10.10** | Reward (outcome) | Neither |
| **10.11** | Future punishment | Neither |
| **11.0** | **Regulation** |
| **11.1** | Pharmacological support | No | Yes |
| **11.2** | Reduce negative emotions | Both |
| **11.3** | Conserving mental resources | No | Yes |
| **11.4** | Paradoxical instructions | Neither |
| **12.0** | **Antecedents** |
| **12.1** | Restructuring the physical environment | Yes | No |
| **12.2** | Restructuring the social environment | Neither |
| **12.3** | Avoidance/reducing exposure to cues for behaviour | Neither |
| **12.4** | Distraction | Neither |
| **12.5** | Adding objects to the environment | No | Yes |
| **12.6** | Body changes | Yes | No |
| **13.0** | **Identity** |
| **13.1** | Identification as self as role model | No | Yes |
| **13.2** | Framing/reframing | Both |
| **13.3** | Incompatible beliefs | No |
| **13.4** | Valued self-identity | No | Yes |
| **13.5** | Identity associated with changed behaviour | No | Yes |
| **14.0** | **Scheduled consequences** |
| **14.1** | Behaviour cost | Neither |
| **14.2** | Punishment | Neither |
| **14.3** | Remove reward | Neither |
| **14.4** | Reward approximation | No | Yes |
| **14.5** | Rewarding completion | Neither |
| **14.6** | Situation specific reward | Neither |
| **14.7** | Reward incompatible behaviour | Neither |
| **14.8** | Reward alternative behaviour | Neither |
| **14.9** | Reduce reward frequency | Neither |
| **14.10** | Remove punishment | Neither |
| **15.0** | **Self-belief** |
| **15.1** | Verbal persuasion about capability | Yes | No |
| **15.2** | Mental rehearsal of successful performance | No | Yes |
| **15.3** | Focus on past success | Netiher |
| **15.4** | Self-talk | Neither |
| **16.0** | **Covert learning** |
| **16.1** | Imaginary punishment | Neither |
| **16.2** | Imaginary reward | No | Yes |
| **16.3** | Vicarious consequences | Yes | No |
| **Total: Yes** | 20 | 37 |