



## Peer support and skills training through an eating club for people with psychotic disorders: A feasibility study<sup>☆</sup>

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### ABSTRACT

**Objective:** The HospitalitY (HY) intervention is a novel recovery oriented intervention for people with psychotic disorders in which peer support and home-based skill training are combined in an eating club. A feasibility study was conducted to inform a subsequent randomised trial.

**Methods:** This study evaluated three eating clubs consisting of nine participants and three nurses. Semi-structured interviews and pre- and post-intervention measures (18 weeks) of personal recovery, quality of life and functioning were used to evaluate the intervention. Participants received individual skills training, guided by self-identified goals, while organising a dinner at their home. During each dinner, participants engaged in peer support, led by a nurse.

**Results:** In personal interviews participants reported positive effects on social support, loneliness, and self-esteem. Nurses reported that participants became more independent during the intervention. Participants were satisfied with the HY-intervention (attendance rate = 93%). All were able to organise a dinner for their peers with practical support from a nurse. Pre- and post-intervention measures did not show important improvements. **Limitations:** Outcome measures were not sensitive to change, likely due to a short intervention period (5 months) and a limited number of participants (N = 9). Using Goal Attainment Scaling to evaluate personal goals turned out to be unfeasible.

**Conclusions:** The HY-intervention is feasible for participants with psychotic disorders. This study refined intervention and research design for the upcoming multicentre randomised controlled trial. We expect that the Experience Sampling Method will be more sensitive to changes in recovery outcomes than regular pre-post intervention measures.

### 1. Introduction

People with a psychotic disorder, such as schizophrenia, often have to cope with severe limitations in functioning related to their illness (Jääskeläinen et al., 2013; Revier et al., 2015). These can lead to a loss of self-management (Gunzler et al., 2017) and social and community functioning (Bellack et al., 2007) and in turn to loneliness, social isolation, and internalised stigma (Revier et al., 2015; Sharaf, Ossman, & Lachine, 2012). During the last decades, personal recovery has gained

more attention in the mental health field (Davidson & Roe, 2007; Noiseux & Ricard, 2008). Personal recovery focuses on living a satisfying, hopeful and contributing life in spite of illness-related limitations (Anthony, 1993). A systematic review identified five processes involved in personal recovery: Connectedness, Hope and optimism, Identity, Meaning in life and Empowerment (CHIME) (Leamy, Bird, Le Boutillier, Williams, & Slade, 2011). Many of these processes emerge in relationships with others. This conceptual framework therefore highlights the need for interventions that target loneliness and social

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isolation as well as social and community skills, which facilitate social contact.

Improving skills for people with psychotic disorders has been an important subject of research in mental health during the last decades. Skills training in a clinical setting has a limited generalisation to real life situations (Kopelowicz, Liberman, & Zarate, 2006). Home-based interventions are expected to be more effective, because skills are learned in the same context as needed in daily life (Liberman, Glynn, Blair, Ross, & Marder, 2002; Lyman et al., 2014). Previous studies indeed showed that home-based interventions in schizophrenia led to more improvement in social and community functioning compared to traditional clinic-based interventions (Glynn et al., 2002; Sellwood et al., 1999). Severe neuropsychological impairments in episodic memory and executive control processes are present in schizophrenia (Reichenberg & Harvey, 2007). Evidence shows that these cognitive deficits result in poor functioning (Velligan et al., 1997). Recent research shows that compensating interventions for cognitive deficits lead to improvements in functioning (Velligan et al., 2015).

Peer contact and support groups are widely used interventions to foster social connectedness as stated in the CHIME framework (Bird et al., 2014; Leamy et al., 2011). This is confirmed by research demonstrating the effect of peer support on social networks and social support (Castelein et al., 2008; Soundy et al., 2015). Peer support is based on mutual recognition through similar experiences. Therefore, peers can offer authentic empathy and validation (Repper & Carter, 2011). Also, identity forming is one of the pathways in which social connectedness is positively influenced by peer support (Vandewalle et al., 2018). Furthermore, peer support effectively improves recovery, empowerment and feelings of hope (Chinman et al., 2014; Lloyd-Evans et al., 2014). Barriers in peer contact are deficits in social cognitive domains, known to be present in people with schizophrenia (Savla, Vella, Armstrong, Penn, & Twamley, 2013). A more proximal mechanism is found in defeatist beliefs that contribute to the avoidance of social activities (Grant & Beck, 2009). Therefore, in group activities a safe atmosphere should be facilitated for peers to engage in social contact.

In light of promising results in both home-based skills training and peer support, we developed a synergistic approach that is expected to improve patients' functional and personal recovery. This paper presents a feasibility study of the HospitalitY intervention: a recovery-oriented intervention combining peer-support and home-based skills training for people with psychotic disorders. This creates an integrated approach that combines functional and personal recovery domains (Liberman & Kopelowicz, 2005; Mueser, 2012). The intervention is structured around an eating club. Having dinner together creates a peer support setting and organising a dinner offers many naturally occurring opportunities to work on social and community living skills in the participant's personal environment. An appointed nurse provides a safe atmosphere by being present (Baart, 2004) and providing encouragement and positive reinforcement (Kopelowicz et al., 2006), as a prevention to defeatist beliefs (Grant & Beck, 2009). Furthermore, based on social learning principles, motivation to work on personal goals is leveraged by participating in a meaningful group activity (Gard et al., 2014; Granholm, Ben-Zeev, Fulford, & Swendsen, 2013).

We developed a personal recovery focused intervention with input from a service user. Subsequently, we conducted a feasibility study to evaluate the suitability of this intervention for people with psychotic disorders and nurses. Furthermore, this study aimed to calculate a sample size for our primary outcome and to explore several potential outcome measures for a subsequent randomised trial.

## 2. Materials and methods

### 2.1. Intervention

The intervention comprises three phases. In the first phase,

participants have an individual meeting with the allocated nurse for an introduction, preferably at the participants' home. During this meeting, the intervention is explained and goals and wishes of the participant are explored in a semi-structured interview (e.g. What are your wishes and goals for the eating club?).

In the second phase, the peer group members ( $n = 3$ ) and the nurse meet at a hospital or community centre to get acquainted with each other. In this meeting, participants make agreements about the planning of the biweekly dinners and other practicalities (e.g. dates, diets, finances) and brainstorm about topics that can be discussed during the future peer group sessions (i.e. dinners). The eating club is expected to be self-supporting where possible. Therefore, financial costs of the dinners are shared between the members and participants learn how to organise such dinners within their own financial situation.

The third phase is a period of 18 weeks in which participants take turns in organising a total of nine dinners (three per participant) at home and with support from a nurse. Participants receive individual home-based skills training while organising a dinner for their peers and the nurse three different times. By hosting a dinner, participants will work on several skills such as planning, cooking and social skills to increase their functional recovery. The skills training is focused on the self-identified goals and is counselled by the nurse. The frequency and mode (e.g. in person or by telephone) of counselling varies per participant depending on the patients' needs and progress throughout the intervention period. Skills training consist of practical support in organising a dinner for peers (Bird et al., 2014) and techniques to adapt the environment to the participants needs. Adaptation techniques are utilized to compensate for cognitive deficits, known to be present in people with psychotic disorders (Stiekema et al., 2015). Applying these simple and straightforward adaptations can increase functional independence in participants who experience cognitive difficulties. Examples of adaptation techniques are: structuring kitchen cabinets with the use of labels or making use of calendars. Furthermore, standardised nursing interventions were used as described in the Nursing Interventions Classification (NIC) (Bulechek, Howard, Dochterman, & Wagner, 2016), such as behaviour modification, social skills, self-esteem enhancement or self-responsibility facilitation.

During dinner the nurse offers support according to the Guided Peer Support Groups (GPSG) method (Castelein, Mulder, & Bruggeman, 2008) (i.e. offering structure without interfering in conversations between participants). Peer support is structured around a two-course dinner. During the main course, participants exchange positive experiences they had during the past two weeks. During the second course an illness-related topic of conversation is chosen and afterwards discussed in a twenty-minute session. An outline of the intervention is presented in Table 1.

### 2.2. Measurements

The intervention was evaluated on five different aspects. First, attendance of participants to the dinners was registered by the mean number of attended dinners during the intervention period for each participant (maximum is 9). Second, experiences from participants and nurses were collected with semi-structured interviews conducted by the first author and research assistants. Participants were prompted to talk about their thoughts regarding the skills training, goals, peer support, nurse support, and organising the dinners. Interviews were interpreted with an inductive strategy: repeatedly reported themes where clustered and matching opinions were summed. Third, goal attainment of participants was measured with the Goal Attainment Scaling (GAS) method (Krasny-Pacini, Hiebel, Pauly, Godon, & Chevignard, 2013). This method enables the achievement of personal SMART formulated goals (Specific, Measurable, Achievable, Relevant, Time bounded) to be used as an intervention outcome. The nurse and participant determine attainment on a 5-point scale (1 = much less than expected outcome and 5 = much more than expected outcome). Goals were considered

**Table 1**  
Outline of the HospitalitY project.

Phase	Description	Time	Goal
Recruitment of participants	The nurse and participant meet for the first time, preferably at the participant's home. The intervention is explained. Goals and wishes of the participant are explored with a semi structured interview.	30 min per participant.	Determining the suitability of the participant for this intervention and inclusion in the study.
Start-up meeting	The peer group, including the appointed nurse, will meet at a hospital or community centre. The participants will make agreements about practicalities. The participants brainstorm about topics that can be discussed during the peer group sessions.	60 min per session.	Participants will meet to get to know each other.
Intervention	Home-based skill training: in turn, participants will organise dinners at home for their peers and the nurse. Peer support: during dinner, peer support is carried out using the Guided Peer Support Groups methodology for nurses.	Varying from 30 to 120 min. 120 min per session.	Facilitating participants in obtaining functional recovery. Fostering social contact and peer support.

achieved with scores  $\geq 3$ . Fourth, treatment fidelity of the nurses was assessed with an open interview and a protocol adherence questionnaire (27 items), which was completed by the nurse after each meeting of the eating club. The questionnaire comprised four topics: self-identified goals (4 items), organising a dinner (6 items), peer support (9 items) and group process (8 items). Items were scored on a 5-point Likert scale (1 = completely disagree and 5 = completely agree), where higher scores equal more adherence. Protocol adherence was analysed by calculating the mean scores on the protocol adherence questionnaire, where a mean score of  $\geq 88$  (range 27–135) was considered sufficient. Fifth, standardised measures were used to determine their sensitivity and feasibility for this intervention. We calculated a Reliable Change Index (RCI) for each measure if the Cronbach's alpha for the questionnaire was available (Kraus, Castonguay, Boswell, Nordberg, & Hayes, 2011). The outcome of the RCI shows the minimal change needed for a reliable improvement. Measurements of personal recovery, quality of life, functional recovery and psychopathology were administered within a range of one to three weeks pre- and post-intervention. All measures were self-rated, except for the Personal and Social Performance (PSP) scale (Morosini, Magliano, Brambilla, Ugolini, & Pioli, 2000). Questionnaires were analysed on responsiveness by comparing pre- and post-intervention scores. Missing values were imputed by using the means of the total score or by Last Observation Carried Forward when questionnaires were smaller than 20 items. The results of a questionnaire were not included in the analysis if  $> 50\%$  of the values on a measure were missing.

Personal recovery domains were measured with the:

- Recovery Assessment Scale (RAS) (range: 41–205, Chronbachs'  $\alpha = 0.76$ – $0.97$ . Test-retest reliability:  $r = 0.65$ – $0.88$  (Corrigan, Salzer, Ralph, Sangster, & Keck, 2004; Salzer & Brusilovskiy, 2014). Higher scores indicate more personal recovery.
- Netherlands Empowerment List (NEL) (range: 40–200, Chronbachs'  $\alpha = 0.94$ , test-retest reliability =  $0.79$ ) (Boevink, Kroon, Delespaul, & Van Os, 2017). Higher scores indicate more personal recovery.
- Lubben Social Network Scale, six item version (LSNS-6) (range: 0–30, Chronbachs'  $\alpha = 0.83$ ) (Lubben et al., 2006). Higher scores indicate a greater social network.
- Personal Network Questionnaire (PNQ) (range: 0–18). The PNQ was developed in a previous study (Castelein et al., 2008) and measures the satisfaction of the amount of contact the patient has with important "others" in his/her life. Psychometric properties are not available. Lower scores indicate a higher satisfaction.

Quality of Life (QoL) was measured with the:

- Manchester Short Assessment of Quality of Life (MANSA) (range: 0–72, Chronbachs'  $\alpha = 0.74$ ) (Priebe, Huxley, Knight, & Evans, 1999). Higher scores indicate more quality of life.

- Short Form Health Survey 12 item version (SF-12) (range: 0–100, Mosier's  $\alpha = 0.69$ – $0.70$  test-retest reliability =  $0.60$ – $0.71$  (Huo, Guo, Shenkman, & Muller, 2018; Ware, Kosinski, & Keller, 1996)). Higher scores indicate more quality of life.

Functional recovery was measured with the:

- Personal and Social Performance scale (PSP) (range: 0–100, intraclass correlation coefficient =  $0.98$ ) (Morosini et al., 2000). Higher scores indicate a better personal and social functioning.
- Daily Task List (DTL). The DTL measures basic functional living skills and was developed specifically for this project, broadly based on the following subscales of the Independent Living Skills Survey (ILSS) (Wallace, Liberman, Tauber, & Wallace, 2000): Appearance and Clothing, Personal Hygiene, Care of Personal Possessions and Food Preparation/Storage. The DTL was developed for this intervention as standard questionnaires were not deemed suitable for this intervention. Psychometric properties are not available. Higher scores indicate better functioning.

Psychopathology with the:

- Community Assessment of Psychic Experiences (CAPE), which measures frequency and distress of symptoms on three dimensions: positive (range: 40–160, Chronbachs'  $\alpha = 0.84$ ), negative (Chronbachs'  $\alpha = 0.81$ ) and depressive (Chronbachs'  $\alpha = 0.76$ ) (Konings, Bak, Hanssen, van Os, & Krabbendam, 2006; Mark & Touloupoulou, 2018). The CAPE is an accessible questionnaire that is used as a self-report questionnaire for this population in previous research (Castelein et al., 2008). This psychopathology measure was included to evaluate adverse effects. Higher scores indicate a higher frequency and more distress of symptoms.

### 2.3. Procedures

A blueprint of the HospitalitY intervention was developed based on scientific literature and the expert knowledge of a panel, consisting of a person with lived experience, a researcher and several mental health-care professionals. The first author developed a detailed treatment protocol. Study procedures were in accordance with local and international ethical standards and the Declaration of Helsinki (World Medical Association (WMA) (2013), as confirmed by the review board of the University Medical Centre Groningen (UMCG), The Netherlands (file number: 2014.479).

The intervention was delivered by mental health nurses or health-care workers with similar professional profiles (e.g. social workers) based on the best fit with their job descriptions and on comparable interventions in previous research (Castelein et al., 2008). Nurses received a manual, a full day of training and supervision from a nurse

consultant specialised in psychotic disorders and in facilitating peer support groups for this group. During the project, a two-hour inter-professional coaching session was organised to reinforce the methodology. Participants who were interested in the HospitalitY intervention were recruited from a Flexible Assertive Community Team (F-ACT) of Lentis Psychiatric Institute between April 2014 and March 2015. Follow-up ended in September 2015. Participants were enrolled in an eating club, in order of entry to the study. All participants provided written informed consent. Participants had a DSM-IV chart diagnosis of schizophrenia, schizoaffective disorder, or psychotic mood disorder (American Psychiatric Association, 2000). Inclusion criteria were: 18–65 years of age and sufficient fluency in Dutch language. The exclusion criteria were: severe psychotic symptoms or group disturbing behaviour, substance dependence on alcohol or other drugs; frequent existing participation in dinners with peers and personal contribution (i.e. cooking).

### 3. Results

#### 3.1. Sample

Nine participants were included in the study. The median age was 38 (range: 27–62). Gender was evenly distributed (n = 5 male, n = 4 female). Participants received income from welfare assistance (n = 8) or employment (n = 1). One participant received higher education and the other eight received secondary education. Participants were single (n = 7), divorced (n = 1) or had a partner (n = 1) and were diagnosed with schizophrenia (n = 7), bipolar disorder (n = 1) or schizoaffective disorder (n = 1).

#### 3.2. Attendance

The mean attendance for all participants during the nine dinners was 93%. Per eating club, the full attendance rate was seven out of nine dinners (range: 6–8). Eight participants completed the project and one dropped out before the final session due to an exacerbation of symptoms. No clear relationship between the project and the exacerbation of symptoms was found after interviewing the participant and case manager.

#### 3.3. Interview reports

Overall, seven out of nine participants were interviewed. Participants described their participation in the HospitalitY intervention as a positive experience. They either expressed a desire to continue (n = 3) or initiated a new dinner group with members from other eating clubs (n = 3). They reported being nervous to invite people into their home at first and that the HospitalitY intervention was demanding. However, in retrospect they were pleased they joined the project and would recommend it to their peers. All participants were able to properly organise a dinner according to nurses' and participants' judgements. Participants reported that three participants per group is comfortable in terms of interpersonal contact as well as practical in modest housing space and preparing a dinner.

*Peer support:* approximately half of the participants reported that the twenty-minute peer support sessions gave them insight in their illness or a feeling of freedom to share psychiatry related experiences they could not share with others (n = 4). Others had mixed views: some reported this was a forced way of talking about difficult matters and not really worthwhile, because having social contact and being in a group was more important (n = 4). Most participants reported they valued social contact during the dinners, felt less lonely and experienced a sense of community participation (n = 6).

*Skills:* participants enjoyed preparing dinner for their peers (n = 4), which increased their self-confidence despite concerns prior to the start of the project. Increased insight in functioning and social contexts (e.g.

how one is viewed by others) was also reported (n = 6). Participants stipulated that the group was used as a mirror to gain insight in how to deal with life in general and living with a psychiatric diagnosis. Furthermore, participants talked about how they gained insight in their personal tendencies through the group process and mediation from the nurse. Nurses evaluated the process of the organisation and the course of the dinner with the individual participant after the other participants had left.

*Nurse support:* nurse-support was perceived as useful and gave participants a sense of security (n = 5). Some participants stated they would not have partaken the project without the nurse. Important features of the nurse were described as being present, creating a sense of safety and structuring the sessions.

*Reports from nurses:* nurses highlighted that they experienced a contrast between the routine care, that is problem-focused, and the recovery oriented care offered during the HospitalitY intervention. They emphasised that it was energising to focus on strengths rather than deficits and that working in a group increased participants' motivation to work on skills. Participation was initially demanding for nurses as the counselling was time-consuming. However, participants became more independent, which led to less involvement from the nurse during the preparation of the dinner.

#### 3.4. Goal attainment

Participants formulated a mean of 2.5 goals per person (range: 1–4). Most self-identified goals focused on gaining skills in organising and preparing group meals (n = 9) and varied from cooking and hosting a group of people to cooking healthy, dealing with budget or grocery shopping. Other goals focused on having more social contact with others (n = 6), social skills or gaining self-confidence in social situations (n = 5) and having peer contact specifically about diagnosis-related subjects (n = 3). The mean number of achieved goals was 1.9 (range: 1–3) (NB. this could not be rigorously measured using GAS as explained in the strengths and limitation section of the discussion).

#### 3.5. Treatment fidelity

Completion scores on the protocol adherence questionnaire were less than 20%. Therefore, only the personal interviews could be used to assess treatment fidelity of the nurse. In personal interviews, nurses reported they rarely used environmental adaption techniques, which were the primary techniques as instructed in the manual and training. Instead, nurses relied more on nursing interventions as described in the NIC (Bulechek et al., 2016). The NIC approach was applicable on a wide range of the participants' goals. Exercising the GPSG methodology was found difficult at the start, because nurses as well as participants needed a few sessions to get used to the role of the nurse. Nurses reported that using GAS to form and evaluate goals turned out to be unfeasible. Although participants did formulate goals, these goals did not adhere to the SMART standards. To use GAS, defining SMART formulated goals is paramount.

#### 3.6. Measurements

The measured constructs were congruent with the topics that participants and nurses described as important in the semi structured interviews. All participants were able to complete the questionnaires and the interview (PSP). Pre-and post-measures did not show to be sensitive for change during the intervention period of 18 weeks. Personal recovery and quality of life measures showed small contradicting changes (i.e. both positive and negative changes were found). On personal recovery measures mean scores improved on the NEL and the SNA, but not on the RAS and LSNS. On QoL measures, the mean score of both SF12 components improved whereas the mean score of the MANSA decreased. Measures of functioning showed small positive changes

**Table 2**  
Outcome measurement of HospitalityY intervention (N = 9): pre and post-treatment at 18 weeks.

	Pre-treatment: Mean (SD)	Post-treatment: Mean (SD)	RCI (N)
Recovery Assessment Scale (RAS) total score <sup>a</sup>	159.0 ± 23.4	154.4 ± 26.8	0
Netherlands Empowerment List (NEL) total score <sup>a</sup>	154.6 ± 21.7	155.6 ± 22.2	1
Personal Network Questionnaire (PNQ) <sup>b</sup>	4.3 ± 4.2	3.8 ± 3.2	N/A
Lubben Social Network Scale (LSNS) <sup>a</sup>	12.3 ± 5.5	11.4 ± 4.5	0
Manchester Short Assessment of Quality of Life (MANSA) <sup>a</sup>	44.6 ± 7.3	40.9 ± 13.2	0
Short Form Health Survey – 12 (SF12) physical component <sup>a</sup>	49.1 ± 11.9	51.1 ± 10.7	3
Short Form Health Survey – 12 (SF12) mental component <sup>a</sup>	42.4 ± 7.7	44.8 ± 11.4	0
Personal and Social Performance (PSP) scale total score <sup>a</sup>	64.4 ± 9.4	65.7 ± 15.9	N/A
Daily Task List (DTL) <sup>a</sup>	41.8 ± 8.4	42.0 ± 7.2	N/A
Community Assessment of Psychic Experiences (CAPE)– Positive dimension <sup>b</sup>	50.8 ± 10.6	48.3 ± 8.0	1
Community Assessment of Psychic Experiences (CAPE)– Negative dimension <sup>b</sup>	49.7 ± 9.9	48.1 ± 10.9	3
Community Assessment of Psychic Experiences (CAPE)– depressive dimension <sup>b</sup>	29.2 ± 6.7	28.2 ± 8.5	0

<sup>a</sup> Higher scores indicate better outcome.

<sup>b</sup> Higher scores indicate worse outcome; RCI = Reliable Change Index (N = number of participants with a reliable improvement).

(PSP, DTL). The CAPE showed a slight decrease in symptoms on all dimensions. The RCI of the questionnaires showed that participants did not improve on most measures. On both the SF12 physical component and the CAPE-negative three participants improved. On the NEL and CAPE-positive one participant improved. The mean scores of the measurements and the RCI are reported in Table 2.

#### 4. Discussion

In this study we examined the feasibility of the HospitalityY intervention, an eating club combining peer support with skills training for people with psychotic disorders. The intervention seemed to be feasible according to participants and nurses: Participants showed high motivation to work on personal goals; all participants were able to organise a dinner for their peers with practical support from a nurse; high satisfaction rates were found; and positive effects were reported on social support, loneliness, and self-esteem. The results on measurements showed small contradicting changes. In addition, the number of participants that reliably improved on measures is low. Therefore, outcome measures did not show responsiveness to this short intervention period.

##### 4.1. Strengths

This is the first study that evaluated peer support and home-based skills training combined in an eating club. The strength of this intervention is providing psychosocial interventions in the context of a meaningful activity. The HospitalityY intervention was well received by participants and nurses and the attendance rate was high. Participants showed high motivation to work on personal goals and the vast majority of personal goals were achieved. Personal goals in a meaningful and social context might explain this high motivation (Gard et al., 2014; Granholm et al., 2013). The presence of a nurse was pivotal for participants to feel safe in exposing themselves to socially challenging interventions, consistent with previous research (Castelein et al., 2008). Furthermore, no adverse effects on psychopathology as assessed with the CAPE, resulted from this intervention. Therefore, this novel nurse-led intervention was considered to be suitable for people with psychotic disorders.

##### 4.2. Limitations

The limited sample size (N = 9) impedes final conclusions on the sensitivity for change of the questionnaires used for this intervention. However, patients reported to have experienced positive changes in social support, loneliness and self-esteem in personal interviews. The discrepancy of the measurements not reflecting the reported improvements in recovery outcomes and skills may be due to the short

intervention period (9 sessions in 18 weeks) and the limited sample size (N = 9). Positive effects of group-interventions might require more time to develop, as previous research on peer support groups showed that high attenders to sessions ( $\geq 9$ ) improved significantly on psychosocial outcomes compared to low attenders ( $< 9$ ) (Castelein et al., 2008). Furthermore, our primary interest personal recovery is a highly individual and subjective process (Bellack, 2006; Bellack et al., 2007; Liberman, 2012), which is broadly defined construct and therefore not easily measured. This is reflected in the divergent subjects that participants brought up in their report. While some participants put a lot emphasis on social support, others experienced a change in loneliness or empowerment. Therefore, measuring personal recovery with standard questionnaires was found to be insufficient for this intervention. Similarly, no golden standard is available for measuring functioning, validity and reliability of functioning measures are highly depending on context (Bellack et al., 2007). We therefore developed the DTL based on the ILSS. The DTL, however, demonstrated insufficient sensitivity for the HospitalityY intervention in this feasibility study. Furthermore, our design (pre-post measurement) did not allow us to anticipate on participants' willingness to be randomised for the upcoming RCT.

A rigorous evaluation of the methodology was not possible due to the low number of treatment adherence forms that were completed by nurses. However, personal interviews with nurses did result in specific recommendations (for example: goal formulation and skills training) to improve the HospitalityY intervention.

With regard to intervention implementation, we found that defining SMART goals, as part of the GAS method, is a time-consuming activity that is demanding for participants with cognitive problems, similar to a previous study (Stevens, Beurskens, Koke, & van der Weijden, 2013). Therefore, using GAS was found to be unfeasible. Furthermore, adapting patients' environment to compensate for cognitive deficits was not an appropriate approach in skill training. We found this approach was too narrow for the wide variety of participants' goals.

##### 4.3. Modifications

Based on this feasibility study, four aspects were modified with regard to the intervention as well as to the measurements. First, the intervention will be extended from 18 to 30 weeks (15 dinners). This will allow for several proposed processes (e.g. group forming and skills competence), which are expected to lead to more momentum in gaining social contact, empowerment, community functioning and a decline in self-stigma. Second, less emphasis will be put on adapting patients' environment to cognitive deficits during the skills training. Instead, nurses are instructed to use a broad range of interventions as described in the NIC (Bulechek et al., 2016). Additionally, nurses are instructed to look for learning opportunities, encourage participants to use their

skills, and to reinforce skills when used (Lieberman, Kopelowicz, & Silverstein, 2005). Third, GAS will not be used as a method for measuring individual progression on goals, so that participants' goals do not need to comply with the SMART approach. However, individual goal formulation will be used to enable nurses and participants to personalise skills training. Finally, due to the small pre-post changes in the measurements we decided to shift to Experience Sampling Method (ESM) as our primary outcome for the upcoming RCT. Therefore, with regard to the primary outcome, this feasibility study was not informative anymore for a power analysis. We found that using a recovery questionnaire such as the RAS is not sensitive enough to find differences in the divergent recovery themes that patients stipulated in the interviews (Shanks et al., 2013). Therefore, in the upcoming RCT (See for study protocol: [www.isrctn.com/ISRCTN14282228](http://www.isrctn.com/ISRCTN14282228)) (Vogel, Liemburg, van der Gaag, & Castelein, 2016).) our primary outcome will be connectedness (CHIME) as a part of the recovery process (Leamy et al., 2011). This will be operationalised by measuring social contact in everyday life with the ESM. Participants will answer questions about the amount of contact, the quality and the persons they had social interactions with. The questionnaire is based on previous research (Granholtm et al., 2013). ESM measures real world phenomena and is therefore considered a suitable method to evaluate the efficacy of interventions that focus on experiences and functioning in everyday life (Myin-Germeys, Birchwood, & Kwapil, 2011). In a multicentre RCT the effects of the modified Hospitality intervention will be evaluated.

## 5. Conclusions

The Hospitality intervention was well received by participants and nurses. Participants were motivated to work on personal goals. Also, positive changes in personal recovery topics were reported by participants. The feasibility study led to refinement of the intervention. A multicentre RCT will be organised to evaluate the effects of the Hospitality intervention on social contact and recovery outcomes.

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