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***A Collaborative Care program for patients
with severe personality disorders:
Analyzing the feasibility of a complex
intervention for complex nursing situations.***

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*Under review with Administration and Policy in Mental Health and
Mental Health Research*

ABSTRACT

We analyzed the feasibility of a Collaborative Care Program to assess whether CCP may be an adequate treatment model for patients with severe personality disorders. In 57 % of the cases CCP was applied moderately to well as opposed to 43% poorly applied CCPs. Four factors were identified explaining the process of execution, related to: the context in which CCP was executed, the patient population, CCP itself and the individual application of CCP by nurses. Several nurses were able to achieve effective execution and preliminary results of CCP are encouraging, indicating that CCP is feasible and might be beneficial to patients and nurses.

Trial registration number: NTR2763

Background

During the past two decades several structured psychotherapies regarding the treatment of patients with personality disorders have been developed and tested for effectiveness with positive results (Verheul and Herbrink, 2007; Bateman and Fonagy, 2008; McMMain et al, 2012). A substantial group of patients, however, does not benefit from these psychotherapies or does not have access (van Luyn, 2007; Hermens et al, 2011; van Manen et al, 2012). These patients usually receive community mental health care (CMHC), mostly provided by (community) mental health nurses (Paris, 2007; Koekkoek et al, 2010). The treatment delivered by CMHC teams is, however, not standardized and generally unstructured (Koekkoek et al 2009a; Koekkoek et al 2010; Amianto et al 2011),

The treatment of patients with severe (borderline) personality disorders is considered as highly stressful for all care providers, but as several studies suggest, especially for nurses (Markham and Trower, 2003; Deans and Meocevic, 2006; Newton-Howes et al, 2008). Strong emotional responses towards the patient arise frequently, particularly when the disruptive behaviour of the patient is unpredictable and difficult to understand (Woollaston and Hixenbaugh, 2008; McGrath and Dowling, 2012). Combined with occasionally insufficient understanding of the complexity of BPD and a lack of evidence based interventions, nurses frequently feel frustrated when their efforts are not accepted and appreciated by the patient, thus reducing the effectiveness of care (Koekkoek et al, 2009b; Newton-Howes et al, 2008).

In order to optimize treatment for this vulnerable patient group and to support nurses in the difficult task to take care of these patients, we developed a Collaborative Care Program (CCP), managed by (community) mental health nurses. The strength of Collaborative Care models is that they combine the implementation of organizational aspects of care with the application of effective therapeutic interventions. Nurses have a prominent position in these models as they function as Collaborative Care managers, being responsible for both an optimal organization of treatment and a proper implementation. Collaborative Care models have proven to be effective for a variety of mental disorders in various settings (Woltmann et al, 2012). The CCP used in this study consists of several aligned structured interventions elaborated in a manual for professionals and patients (Stringer et al, 2011). In previous research we presented the feasibility and preliminary results of the CCP compared to Care as Usual, suggesting that CCP is feasible and could be beneficial to patients, their informal carers and nurses (Stringer et al, submitted).

The present study examines the process of execution of the Collaborative Care Program in order to gain a more profound insight in its feasibility. It may be expected that the above-mentioned factors specific to the population of patients with severe personality disorder complicate straightforward execution of CCP. At

the same time, other variables, such as organizational preconditions, and the fit of the intervention with existing work manners or the aimed target population, may also influence the process of execution (Grol and Grimshaw, 2003; Forsner et al, 2010). Making this process subject of study gives us the opportunity to learn how composite intervention programs could be implemented most effectively in clinical practice. In this study we aim to analyze the process of execution of the CCP for patients with severe personality disorders, and identify hampering and fostering factors in this process. The following research questions are formulated:

1. To what extent is the execution of the CCP realized?
2. Which factors hamper or foster effective execution?

Methods

Design

We used a comparative multiple case study design to study the process of execution of the CCP. This design is suitable when testing a new intervention, implemented in complex patient situations, in order to obtain a profound insight into its value (Stake, 2006). The study consisted of three measurements: at baseline (T0), at five (T1) and at nine (T2) months after baseline. Mixed research methods, both quantitative and qualitative, were used. To achieve the study objectives of this sub-study the qualitative data were used. In addition, to provide a general insight in the quantitative results, descriptives of the main outcome indicators were presented. A detailed description of the study protocol has been published elsewhere (Stringer et al, 2011).

The research project has been approved by the Medical Ethics Committee of the VU Medical Centre in Amsterdam, the Netherlands. All participants signed for informed consent based on both oral and written information about the research project.

Sample

Participants were recruited from two comparable CMHC teams of a large mental health organization in the Netherlands. In this study two treatment conditions were compared: an experimental condition in which one CMHC team provided the Collaborative Care program, and a control condition in which the other CMHC team offered Care as Usual (CAU). Usually, CMHC teams provide long-term support to patients who mostly had received (unfinished) specialized treatments before. Within both conditions, caseloads of participating nurses were screened for eligible patients, who were approached in random order. In the experimental condition a maximum of three patients was set for every nurse, to limit the required efforts regarding the execution of CCP.

Patients, aged between 18 and 65 years, had a main diagnosis of borderline personality disorder (BPD) or personality disorder not otherwise specified (PD NOS) (DSM-IV-TR). They had a score of 15 or higher on the Borderline Personality Disorder Severity Index (BPDSI, range 0-90) (Arntz et al, 2003;Giesen-Bloo et al, 2010) and had received psychiatric care for at least two years. In the study 53 patients were eligible for inclusion, the final sample consisted of 26 patients: sixteen in the experimental condition and ten in the control condition (Figure 1).

Ten nurses from the experimental condition and five nurses from the control condition were included in the study. Participation took place on a voluntary basis. Nurses who participated in the experimental condition received a three-days training in providing the Collaborative Care Program. From the originally ten nurses who were trained, four changed jobs during the research period. Three new nurses started and were trained individually by the first author. They continued the execution of the CCP where the previous nurses had stopped. In the end, 14 nurses could be followed up.

Based on our previous research, no significant differences in sample characteristics were found between the experimental and control condition (Table 1).

Figure 1: Flow chart of included patients

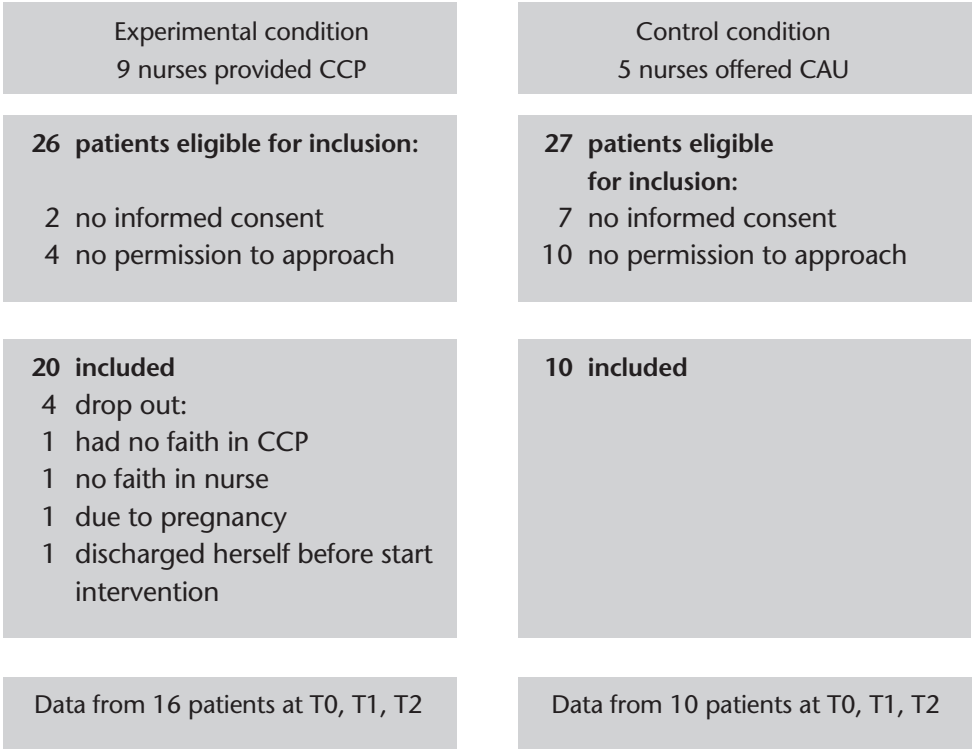


Table 1: Sample characteristics

	Total	Experimental condition	Control condition	p-value
<i>Patients n=26</i>				
Age (mean, SD)	44.15 (10.4)	43.94 (11.7)	44.5 (8.7)	.897
Sexe (n, % female)	23 (88.5)	15 (93.8)	8 (80)	.286
Marital status (n, % unmarried)	20 (83.3)	12 (80)	8 (88.9)	.572
Diagnosis				.780
Main diagnosis BPD (n, %)	19 (73.1)	12 (75)	7 (70)	
Main diagnosis PD NOS (n, %)	7 (26.9)	4 (25)	3 (30)	
Co-morbid axis I-disorder(s) (n, %)	26 (100)	16 (100)	10 (100)	
Co-morbid somatic disorder(s) (n, %)	25 (96.2)	15 (93.8)	10 (100)	
GAF (mean, SD)	52.0 (9.9)	49.8 (11.0)	55.5 (6.9)	.153
Years of MHC treatment (mean, SD)	16.41 (10.0)	16.6 (10.7)	16.1 (9.5)	.923
Years in CMHC team (mean, SD)	2.68 (3.6)	1.9 (2.1)	3.8 (5.1)	.323
<i>Nurses n= 14</i>				
Age (mean, SD)	44.54 (7.8)	43.5 (5.5)	46.2 (11.1)	.567
Experience MHC (mean, SD)	19.90 (12.0)	17.26 (10.9)	25.16 (13.9)	.302
Experience CMHC team (mean, SD)	3.37 (3.7)	1.59 (1.2)	6.22 (4.7)	.093

The Collaborative Care Program

A detailed description of the content and aims of the CCP is provided elsewhere (Stringer et al, 2011). In short, the Collaborative Care Program consists of five components:

1. Adequate organization and coordination of care, with optimal collaboration between the main partners: patients, their informal carers, psychiatrists and nurses. This first component consisted of several activities:
 - a. *Introduction* of the principles of Collaborative Care to the patient and informal carers;
 - b. Forming of a *Collaborative Care team*, consisting of the above-mentioned partners;
 - c. Evaluation of treatment history and coping skills with life-events, by means of a *time-line*;
 - d. Explication of collaboration agreements. To emphasize the collaboration and mutual expectations and responsibilities, in the CCP a metaphor was used that described the collaboration as a therapeutic road trip in which the patient is the driver and the care provider the navigator (Jobes, 2006).
With this road trip in mind, collaboration agreements were established;
 - e. *Crisis management* by drafting a crisis response card;
 - f. *Systematic assessment of needs* by means of the Camberwell Assessment of Needs (CAN);
 - g. Formulation of a *treatment plan*, agreed upon in the Collaborative Care team.
2. Early recognition of destructive behaviours (i.e. suicidal, self-harm, aggressive or addictive behaviours) followed by early interventions, to promote self-management using a relapse prevention plan;
3. Application of Problem Solving Treatment (PST) to promote problem solving skills;
4. Application of elements of Solution Focused Treatment to support a more positive life orientation;
5. Provision of psychoeducation.

The first component referred to the preparation stage of the program, while the components 2 to 5 comprised the treatment per se. The objectives as described in the treatment plan were evaluated every three months within the Collaborative Care team.

Data collection

Qualitative data:

- a. Individual in-depth interviews with nurses and patients were carried out. Interviews took place after the last measurement (T2) with all participating nurses (n=14). They were interviewed about one of their participating patients. These patients were interviewed as well after the last measurement, except one (lost to follow-up). The interviews with the nurses were conducted by a research assistant (PK); the interviews with the patients by the first author (BS). These separate responsibilities in the interviews were motivated by the fact that the first author was too closely involved with the nurses to ensure objectivity. All interviews were audio taped.
In the interviews a topic list was used, referring to the underlying, neutrally formulated, principles of the CCP, e.g. quality of the therapeutic relationship, involvement of stakeholders, problem solving, coping with destructive behaviour, and self-management. For both conditions the same interview topic list was used, however the questions were adapted in line with the different treatment contexts in the experimental and control condition. From the perspective of either the nurse or the patient each topic was questioned on the basis of the following questions: 1) How was the topic applied in treatment, 2) What were the reasons for (un)successful application, 3) What were the actual consequences for treatment of successful or unsuccessful application of the topic, 4) What factors hampered or fostered the application of this topic? Preceding these questions, all participants were asked to reflect on the individual quantitative outcomes: How do these outcomes match with their expectations and how would they explain these outcomes? Ultimately, the participants from the experimental condition were asked to reflect on the feasibility of CCP in general.
- b. Supervision records. During the application of the CCP nurses received monthly supervision, supervised by the first author. These supervisions were audio taped. These meetings focused on the individual application of the CCP and on hampering and fostering factors during the execution process.
- c. Nurses from both conditions filled out process forms in which the number and content of contacts were registered. In the experimental group items were added to these forms, which provided additional insight in the treatment integrity of the CCP. In both conditions available treatment plans, crisis response cards and/or relapse prevention plans, derived from the electronic health record, provided additional information about the actual content of treatment.

Additional quantitative data:

The main outcomes were quality of life, measured with the Manchester Short Appraisal (MANSA) (Priebe et al, 1999), and severity of the borderline manifestations, measured with the Borderline Personality Disorder Severity Index (BPDSI) (Arntz et al, 2003;Giesen-Bloo et al, 2010). The MANSA is a 16-item self-report scale, which measures quality of life with 7-point Likert scales, with higher scores indicating higher quality of life. The BPDSI is a semi-structured interview conducted among patients, which represents the current severity and frequency of the DSM-IV BPD manifestations. The BPDSI consists of 70 items, with a total score ranging from 0-90. A cut-off score of 15 was found to distinguish patients with BPD from healthy controls (Giesen-Bloo et al, 2006).

Analyses

For determining the actual application of the CCP, referring to the first research question, the well-applied components were assessed by using a classification with four levels: components could be applied optimally, appropriately, moderately or not/barely (Stringer et al., submitted). The sum of optimally or appropriately applied components (range 0-12) was used as a measure of treatment adherence in which three levels were distinguished: 0-5 poor application; 6-8 moderate application; 9-12 good application. In the control condition an assessment was made to which extent the underlying principles of the CCP had been applied recognizably in Care as Usual. This assessment was only possible for the cases with interview data (n=5). The scoring was repeated by a second rater (PK) to assess inter-rater reliability. The intra-class correlation was .96 ($p < .000$).

For answering the second research question, i.e. investigating hampering and fostering factors in the process of execution, a content analysis was performed of all qualitative interviews and supervision sessions, which were transcribed verbatim. With regard to the interviews, single case descriptions were made as a first step to acquire insight into the process of the execution at individual case level and identify fostering and hampering factors. With regard to the transcriptions of the supervision sessions, recurring surpassing themes were identified referring to problems with the individual application of the CCP. Subsequently, we used the aggregated qualitative data of the single case descriptions and content analysis of the transcriptions of the supervision sessions to analyse these factors at group level.

Additionally, at individual case level difference scores (T2 - T0) were computed for the main outcome indicators quality of life (MANSA) and severity of BPD manifestations (BPDSI).

The qualitative data were analysed using ATLAS-TI qualitative text analysis software. The credibility and dependability of the data were ensured by peer debriefing among members of the research group and member checking, meaning

that the single case descriptions were presented to the interviewees for feedback (Polit and Beck, 2003). Quantitative data were analysed using SPSS 20.

Results

Initial acceptance of the intervention

The flow chart for inclusion (Figure 1) shows that in the experimental condition 13% of the patients were lost for inclusion, because no permission of the nurse had been obtained to approach them, due to presumed vulnerability of patients, compared to 40% in the control condition. The nurses in the control condition were more reluctant than those in the experimental condition, to allow their patients to participate in research, because they expected no benefits from participation in the control condition and considered the burden of participation unacceptably high. Further, in the experimental condition 6% refusals for informed consent were encountered, opposed to 28% in control condition, indicating a high acceptance rate of the CCP research project. In the experimental condition 20% dropped out, but only one due to a lack of giving credence to CCP, compared to no drop out in the control condition. The CCP training, given to the nurses in the experimental condition in advance of the actual start, was well received with a mean appreciation score of 4 (SD 0.9; scoring range 0-5) and a mean score for perceived competency in applying the CCP of 6.5 (SD 1.1; scoring range 0-10).

The application of the CCP compared to the treatment applied in CAU

Based on Table 2, it can be seen that in 4 cases (25%) the CCP was applied well, because at least 9 out of 12 of the CCP components were executed optimally or appropriately. In another 32% of the cases CCP was moderately applied (6 or 7 components optimally / appropriately applied). In 43% of the cases the CCP was poorly applied, with two well-applied components of CCP as minimum; these cases should be considered as treatment drop outs, because patients were insufficiently exposed to the intervention.

Table 3 (pag. 112-113) relates treatment adherence in the experimental condition to the results of the main outcome indicators at individual case level. With some exceptions, there seems to be a positive relation between treatment adherence and results.

Influencing factors for effective execution of CCP

Based on the aggregated data of the interviews and supervision records, four interdependent factors could be identified:

1. Factors related to the context in which CCP was executed;
2. Factors related to the patient population
3. Factors related to the CCP
4. Factors related to the individual application of CCP by the nurses

In the following section the factors will be elucidated sequentially and are summarized in Table 4.

1. Context of CCP

The application of the CCP took place in a context in which several preconditions were poorly met during the research period. The CMHC team was highly instable during the research period, i.a. due to many changes within treatment staff. This threatened the continuity of care and entire implementation of the research project. The work and administration burden was considered high because of vacancies and training of new nurses. As a result of these vacancies, the case loads of the nurses were overcrowded. Further, nurses considered the multidisciplinary embedment and support of CCP insufficient: they perceived little commitment of other disciplines and management staff. Moreover, no shared caseloads were accomplished, as a result of which especially three nurses perceived high levels of work-related stress in caring for their most severely ill patients. The patients involved did such a strong emotional appeal to the nurses by continuously expressing suicidal behaviour, which the nurses could hardly endure and burned them out. This hampered execution of CCP, because it resulted in the premature detachment of the CCP protocol.

Although the CCP training was well received, the time between training and actual start of CCP was long due to inclusion delay. As a consequence the acquired knowledge and skills weakened and nurses' self-confidence regarding the application of the CCP diminished, hampering effective execution. Lastly, presence during supervision sessions was limited to an average of three participants per session, mainly because of the high work burden. Because of this limited participation of the nurses the supervision sessions were made obligatory half way the research period. This obligation ensured that more nurses attended the sessions,

Table 2: Actual application of treatment: the CCP compared to CAU

Components/ Cases	Experimental condition										Control condition															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
<i>Preparation</i>																										
1a. Introduction	++	+	+	+	+	+	+	+	+	+	+	+	++	+	+	+	-		+	+			-			+
1b. Forming a CCT	+	+	+	-	-	+	-	+/-	+	-	-	-	-	+	+	++	+		-	-			+			+
1c. Time-line	+	+	+	+	-	+	+	+	++	+	++	+	++	+	-	++	+		-	-			-			-
1d. Collaboration agreements	+	++	+	-	-	++	-	-	++	-	-	+	++	++	+	++	-		-	-			-			-
1e. Crisis management	+	-	+	-	-	-	-	-	++	-	+/-	-	-	-	-	++	-		-	-			-			+
1f. Assessment of Needs	++	+/-	+	+	-	+	+	+	++	-	+/-	+	++	+	+	++	-		-	-			-			-
1g. Treatment plan	-	++	++	+	+	++	+	+	++	+	+	+	++	+	+	++	+		+	+			+			+
<i>Treatment</i>																										
2. Early recognition and intervention of destructive behaviour	-	++	+/-	-	-	++	-	-	++	-	-	-	++	-	-	+/-	-		-	-			-			+
3. Problem Solving Treatment	+/-	+	-	-	-	+	-	-	+	-	-	-	++	-	-	-	-		-	-			+/-			-
4. Life orientation	+/-	++	+/-	+/-	-	+/-	-	-	+/-	-	-	-	+	-	-	-	+/-		+	+/-			+/-			+/-
5. Psychoeducation	-	+	-	-	-	-	-	-	+/-	-	-	-	-	+	-	+	-		-	+/-			-			-
<i>Evaluation</i>																										
Treatment plan	-	+	-	-	-	+	-	-	-	-	-	-	+	-	+	-	-		-	+			-			?
Total 'treatment adherence'	6	10	7	4	2	9	4	4	10	3	3	5	9	7	6	7	3		3	3			1			5

- ++ : Component was optimally applied; worksheets, documents from the electronic health record and/or process forms as proof
- + : Component was appropriately applied; process forms, statements in interviews with patient and nurse as proof
- +/- : Component was moderately applied; statements in interviews with patient or nurse as proof
- : Component was not or barely applied; no proof available or statements in interviews with patient and nurse as proof

Table 3: Treatment adherence related to the results of the main outcome indicators at individual case level

CASES experimental condition	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Treatment adherence ¹	6	10	7	4	2	9	4	4	10	3	3	5	9	7	6	7
Diff MANSA ²	-10	17	.	1	-4	4	0	3	0	8	16	0	4	12	7	10
Diff BPDSI ³	-6.15	-16.73 ⁴	-9.96 ⁴	5.64	-0.03	-16.6 ⁴	11.36	-9.52 ⁴	4.66	-18.24 ⁴	-7.80 ⁴	.	-9.52	-12.38 ⁴	-4.87	-18.11 ⁴

1 Treatment adherence derived from Table 2.

2 Difference score T2-T0 for the Manchester Short Appraisal at individual case level.

3 Difference score T2-T0 for the Borderline Personality Severity Index at individual case level.

4 BPDSI score dropped below cut-off point of 15 points.

but initially it decreased motivation for CCP. During supervision sessions experiences with CCP were shared and the execution of the diverse components of CCP, including maintaining effective therapeutic relationships, was boosted. This increased specific skills related to the application of CCP and basic knowledge and skills regarding the treatment of patients with severe personality disorders. Consequently, it fostered accurate execution of CCP.

2. Specific features of the patient population

The patient population for which the CCP has been developed can be characterized by a strong will to survive despite long-lasting suffering. However, the patient population had also several features that complicated effective execution.

Firstly, presumed incapacities of patients to work according to CCP were repeatedly put forward in supervision sessions and the interviews. Some of these incapacities were related to the aforementioned 'therapeutic road trip': 'Does every patient have a driver's license?' or 'Is each patient at least able to attain one?' or 'Is it safe that this patient drives?' were frequently asked questions during the supervision sessions. And consequently, what if not? CCP relied on autonomy and responsibility of the patients, but questions raised how to apply CCP when patients could not manage this autonomy or responsibility. This accounted especially for five patients with severe cognitive problems (and low IQ). Besides dilemmas with regard to autonomy, severe cognitive problems had also negative consequences for concentration, memory and understanding. This impeded execution because provided information had to be repeated frequently and homework was not made.

Secondly, difficulties to establish and maintain stable interpersonal relationships, specific to patients with severe personality disorders, hampered or delayed execution of CCP. These difficulties were often put forward in supervision sessions and were also related to the 'therapeutic road trip': 'How to act if you, as a nurse, are kicked out the car?' or 'What if the patient just stopped the car?' In at least five cases effective execution was hampered, because of problems within the therapeutic relationship. On the one hand, frequent no shows, expressing ambivalence towards treatment, raised questions about when treatments could or should be ended. On the other hand, when patients claimed frequent contacts, while they simultaneously expressed an extreme passive or dependent attitude, the same questions raised about the added value of continuing treatment. A related problem was that several patients expected their nurses to solve all their problems: they forgot 'how to drive' or they had no idea 'where to go or how to get there'. After many years of treatment, they were ingrained with MHC and heavily dependent on MHC. As a result they unlearned skills how to take responsibility for their own lives and how to cope with daily problems. Again, the emphasis on self management skills in the CCP might have overcharged some of the patients.

Thirdly, demoralization lurked among patients. Patients reported that the occurrence or burden of several core features of their BPD diminished over time, e.g. acting out, avoidance of /withdrawal from relationships, and lack of stable support. However, they considered the remaining symptoms, such as affect instability, emptiness, chronic suicidal behaviours, and severe social problems as difficult to cope with and less responsive to change. As a consequence, due to this limited responsiveness to change, demoralization arose. This demoralization hampered effective execution in cases where patients did not expect that CCP

Table 4: Summary of hampering and fostering factors

	1. Context	2. Specific features of patient population	3. CCP intervention	4. Individualized application the of CCP
Hampering	<ul style="list-style-type: none"> • Discontinuity of care providers due to long-lasting illnesses, burn outs, frequent job changing and a vacancy stop due to cost reductions • Insufficient multidisciplinary embedment and support of CCP • Change of electronic health record (EHR) software system requiring extra effort to get used to the new system • Time between training and actual start of CCP • Limited presence during supervision session 	<ul style="list-style-type: none"> • Limited autonomy and self management • Turbulent therapeutic relationships • Cognitive problems • Limited responsiveness to change leading to demoralization • Dependency on MHC • High crisis sensitivity • Severe life events and social problems 	<ul style="list-style-type: none"> • Unfamiliarity with working according to protocol • Uncertainty regarding the new intervention • Limited overview of CCP due to multitude of components • Difficulties to position the function of CC manager • Insufficient integration of CCP with (new) EHR: it needed relocation of information from the workbook to EHR and information was not available for stakeholders 	<ul style="list-style-type: none"> • Problems in adjusting the protocol to the individual patient • Non-commitment and demoralization • Poor agenda setting • Avoiding addressing serious problems
Fostering	<ul style="list-style-type: none"> • High acceptance rate of CCP project • Well received CCP training • Eagerness to enlarge knowledge and skills with regard to the specific patient population • Sufficient perceived competency in applying CCP in advance • Supervision sessions boosted generic and specific skills regarding the application of CCP 	<ul style="list-style-type: none"> • Strong will to survive • Highly motivated to participate in CCP project 	<ul style="list-style-type: none"> • CCP considered as helpful and 'effective' • CCP provided necessary structure • Improvement of generic skills in treatment of target population • 'Therapeutic road trip' • Positive evaluation of increased collaboration with stakeholders 	<ul style="list-style-type: none"> • Endurance • Creativity • Eclectic working style • Higher education level

would change anything. Moreover, nurses were at risk to be contaminated by this demoralization.

3. The intervention CCP

To approach this patient population CCP was developed as an easy-accessible composite intervention program, but application appeared to be more complex than expected, with negative consequences for the execution. In general, nurses were positive about the intervention itself and several components of the CCP were considered 'effective' and 'helpful'. They reported that it provided necessary structure to the treatment process and that relevant skills were trained for effectively treating patients with severe personality disorders. Especially the 'therapeutic road trip' and the increased attention paid to goal orientation were attractive to nurses.

However, the application of the composite intervention and executing the function of CC manager appeared to be complex for most nurses. Nurses found it difficult to deal with the experienced tension between working according to the protocol and providing patient-oriented care based on the specific needs and preferences of patients. Generally, the participating nurses were unfamiliar with working according to protocols. They reported uncertainty regarding the execution of CCP, partly due to the time elapsed between the training and start of the CCP. This seems inconsistent with the fact that the manual, intended to provide the necessary support when executing the intervention, was not or barely used. It seems also inconsistent with the limited presence during supervision sessions. Some nurses also reported insufficient skills needed to apply the single treatment components of the CCP properly.

The organization and coordination of care within the Collaborative Care team and with stake holders, as elaborated in the CCP, raised questions about the degree of outreach and responsibility of the members of the CMHC team with regard to this patient population: How to deal with no-shows? In which situations are home visits advisable? At what point can treatment be ended? How pro-active should we act towards family guardians, and care providers of addiction or general health care services? Apart from these questions, nurses considered the increased collaboration with stakeholders and informal carers a valuable component of CCP.

4. Individualized application of CCP

Applying the CCP among difficult-to-treat patients required much effort and skills of nurses. It was emphasized during the CCP training and repeated during supervision sessions that the different components of the program, especially during the treatment stage, could be applied in a flexible order, dependent on the priorities in unmet needs and the preferences of the patient. Although CCP offered

a goal-oriented structure, it was up to the nurses to adjust this structure to the preferences and characteristics of each individual patient. Four nurses who had an eclectic working style were able to switch between and adapt components of CCP in order to meet patient's needs, resulting in effective execution of CCP. However, in several cases this process of adjusting did not work out and in some cases it even shifted towards non-commitment. Some nurses appeared to be unable to switch between components of CCP without 'losing' the patient; they got stuck and ultimately put aside CCP. Nurses confronted with highly complex patients considered this process of adjusting as (too) difficult, motivated by problems within the therapeutic relationship, cognitive problems, crisis sensitivity or demoralization.

Another related problem was the poor agenda setting: nurses were overruled by daily worries of patients, e.g. severe life events, discontinuity due to psychotic episodes or admissions, severe social problems and high crisis sensitivity. It appeared to be highly complicated for nurses to relate these daily problems to components of CCP, explaining the limited execution of specifically the components problem solving treatment and life orientation. Nonetheless, nurses reported that the repeated emphasis on goal orientation had a positive effect on the management of the treatment process, independent of the strict application of the CCP.

Finally, in some cases execution was hampered because nurses avoided addressing the core problems as elaborated in CCP. Occasionally, nurses reported to avoid discussing suicidal ideation or behaviours out of fear to trigger suicidal crisis or to disturb 'agreeable' therapeutic relationships. Moreover, they reported not feeling sufficiently competent to cope with crisis: they had a strong emphasis on preventing suicide instead of trying to understand the underlying distress and to refocus the patient to work at resolving life problems. As a result of this avoidance, drafting crisis response cards and relapse prevention plans combined with providing psychoeducation and the component life orientation were implemented inadequately. Another topic of avoidance was that nurses not always addressed lack of progress in treatment out of fear to disturb these 'agreeable' therapeutic relationships. In several cases, however, after discussing these avoidances in supervision sessions, nurses brought up the core problems after all and yielded a breakthrough in the treatment.

Discussion

Main findings

In this study we aimed to analyze the process of execution of CCP for patients with severe personality disorders and identify hampering and fostering factors in this process. One main finding is that CCP is feasible. In 57% of the treatments CCP was moderately to well applied as opposed to 43% of the treatments poorly carried out. Execution was most successful in the preparation stage of CCP. Four interdependent factors were identified explaining the process of execution. Firstly, context variables are indicative for (in-) effective implementation (Grol & Grimshaw, 2003; Forsner et al., 2010). In our study we found a high initial acceptance rate of the project, a well received CCP training and sufficient perceived competence among nurses. However, to some extent, conducting research in everyday clinical practice is subject to adverse conditions and both researchers and professionals have to deal with them in the best possible way, in the end being modest in their expectations. In line with our expectations, features of the target population had a hampering effect on the execution of CCP. These features, however, are specific to the patients' psychopathology and the main reason why CCP was developed in an effort to meet their problems and needs. Nonetheless, one might wonder if we still have overcharged some patients with the appeal to autonomy and self management and if CCP is applicable to all patients. Some patients suffer from such poor identity integration and ego-strength, needing a more supportive treatment than CCP might offer (van Manen et al., 2012). On the other hand, unsuccessful execution of CCP should not too easily being attributed to patient characteristics only, because our findings also reveal that the incapacity of nurses to manage the CCP intervention in complex situations play a role. Thirdly, the CCP intervention itself appeared to have both fostering and hampering features. These features give indications how to adapt CCP to improve feasibility and facilitate execution. Finally, the key to successful execution is the individualized application of CCP by the nurses. As has been shown, four nurses with an eclectic working style were capable to execute the CCP properly. However, our research revealed also that this step was most complicating due to a more general unfamiliarity of nurses with working according to a protocol, problems in adjusting this specific protocol to the individual patient, poor agenda setting and avoidance of core problems of patients of our target group. Simultaneously, nurses made limited use of the provided support (supervision sessions and manual). Apparently, with respect to five nurses, we and perhaps they also, have underestimated the required knowledge and skills needed to apply CCP adequately. Nonetheless, it could be argued that nurses need to be capable to apply composite intervention programs, in order to meet the specific problems and needs of the patient population. Many of these problems and needs belong (at least partially) to the nursing intervention domain,

as they are related to living with the consequences of a chronic psychiatric illness: a combination of mostly reduced psychopathological symptoms and severe social and interpersonal problems. Besides, the current organization structure of CMHC with limited availability of psychiatrists and psychotherapists, motivated by cost reductions and shift of tasks towards the nursing profession, stresses the urgency that nurses are well equipped to fulfill their professional responsibility.

When compared to studies concerning CCPs for other mental disorders, mainly affective and anxiety disorders, one could argue that we have overstretched the concept of Collaborative Care in applying it to difficult-to-treat patients within a specialized mental health care setting. Critical features distinguish patients with severe personality disorders from other target populations: easily triggered disturbances within therapeutic relationships and the persistent threat of suicidal, self harm and addictive behaviours complicate a straight-forward application of a CCP. However, these critical features also stress the urgency for CCP for this patient population and both patients and nurses evaluated the intervention positively. Moreover, we found a satisfying effect size for decrease in borderline symptoms in previous research, indicating that CCP is promising (Stringer et al, submitted).

Recommendations for effective execution

Based on the findings of this study several recommendations can be made to facilitate effective execution. Even though we may have little influence on the conditions under which interventions are implemented, it is important to stress that working with this target group is demanding upon nurses and professionals from other disciplines, and consequently, support and facilitation from managers is necessary (van Luyn, 2007). This target population justifies a lower caseload, given the complexity of their problems and needs, and high care consumption. Furthermore, to reduce the perceived burden, CCP should be adequately embedded in the multidisciplinary collaboration by involving the other disciplines more actively in training, supervision and treatment. Moreover, the treatment of patients with severe personality disorders within a CMHC setting requires organizational policy in relation to patient groups with other psychiatric, mainly psychotic, disorders: policy regarding degree of outreach, intensive outpatient treatment, short admissions, and criteria for in- and outflow will be different for our target population. The CCP itself might need some adaptation as well: a modular system of the different treatment components, as opposed to the current protocol, might facilitate execution. With a modular system it may be easier to motivate why some treatment components have priority in a given patient situation. For patients it may be easier to choose which components correspond with their needs and to define priorities. Finally, the prominent position of nurses in complex and composite intervention programs is relatively new, posing new challenges for mental

health nurses to make these programs work. This has consequences for the required competence levels of mental health nurses regarding clinical reasoning, proper use of different theoretical frameworks, methodical execution of interventions, and adequate planning and coordination of care within multidisciplinary cooperation. Higher educated nurses are needed, preferably coached on the job by clinical nurse specialists and academically trained professionals. Also, more profound training in the skills needed to apply CCP appeared to be necessary. Permanent supervision sessions are needed to support nurses in the execution of these complex interventions programs for difficult-to-treat target groups.

Strengths and limitations

In this research project we conducted a comparative multiple case pilot study as a first step to assess whether CCP may be an adequate treatment model for patients with severe personality disorders, in particular patients who are currently treated in community mental health centres. The most important strength of the comparative multiple case study design is that it allows highly structured and systematic evaluation of the implementation and outcomes of CCP, within both an experimental and control condition. For methodological triangulation we used quantitative and qualitative data, thus obtaining insight into both the experiences of patients and professionals, and into the quantitative outcomes of the intervention program. This study also has a number of limitations that should be recognised. Firstly, the involvement of the primary investigator (BS): she developed the manuals, served as the supervisor of the supervision sessions, interviewed the patients and was leading in all analyses. However, to warrant the quality of research the following precautions were made: assigning the interview with nurses to an independent co-author (PK), peer reviewing of all analysis with this co-author (PK), peer reviewing findings within the research group, assessing the inter-rater reliability of the classification of application, and member checking. Secondly, some bias may be caused by including nurses on voluntary basis, implicating that they had affinity with the target population.

Conclusion

In this study four factors could be illuminated which influenced effective execution of a collaborative intervention program for patients with severe personality disorder. Although challenging, effective execution of CCP was achieved by some of the nurses and preliminary results of CCP are encouraging. This indicates that CCP is feasible and might be beneficial to patients, their informal carers and nurses. Following the recommendations for effective execution, effectiveness of CCP might be increased and tested in a future RCT.

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