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Reducing restrictive measures in complex long-term care for people with intellectual disabilities: Implementation interventions through the lens of normalisation process theory

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ABSTRACT

Background: The multi-disciplinarity of long-term care for people with intellectual disabilities makes organisations seek stability and predictability, complicating implementing innovations. Interventions to implement a method for reducing restrictive measures were analysed through the lens of Normalisation Process Theory to understand the social mechanisms at play.
Methods: Process notes, collected during a trial in which a method to reduce restrictive measures was implemented, were analysed guided by implementation interventions defined by Cochrane Effective Practice and Organisation of Care Review Group. These interventions were mapped to social mechanisms of Normalisation Process Theory.
Results: Implementation interventions were widely used in which clients' perspectives were expressed (client-related-interventions), and consensus processes were held with care professionals. These interventions initiated NPT's social mechanisms' Coherence, Cognitive Participation and Collective Action.
Conclusions: The emphasis on consensus and clients' perspectives when methodically reducing restrictive measures reflects some unique implementation challenges in long-term intellectual disability care.

Implementing and sustaining new methods in complex organisational and policy contexts in health care is a challenge. Dynamic and often unpredictable inter-actions and behaviours occur between various actors within complex adaptive contexts (Greenhalgh et al., 2004; May et al., 2016; Plsek & Greenhalgh, 2001). These interactions and behaviours are also known as the social mechanisms, which determine the outcome of implementation processes (May et al., 2009). Various implementation interventions have been identified to be used to steer these social mechanisms towards successful implementation. To facilitate the evaluation of these interventions, the Cochrane Effective Practice and Organisation of Care Review Group (EPOC, 2002) have defined four types of such interventions: professional, organisational, financial and regulatory. Professional implementation interventions as identified by EPOC, such as educational meetings and reminders (Table 2), have been used to explain and comprehend the take-up of innovations by professionals in various

medical fields, such as hospitals, nursing homes (Breimaier et al., 2013), mental health care (Williams & Beidas, 2019), and oral health care (Weening-Verbree et al., 2013). However, professional implementation interventions and their definitions may be specific to their domains of practice and need to be described in detail (Michie et al., 2009). Little is known about interventions promoting professional behaviour change used in implementation processes in complex long-term care organisations for people with intellectual disabilities. Scientific knowledge about implementation in curative health care cannot simply be generalised to long-term care, because this type of care involves integrated and lifelong 24/7 care and support (Kersten et al., 2018). Moreover, these care organisations usually have conservative systems, which pursue stability and predictability. Change is perceived as challenging by clients and professionals. From this perspective, it is valuable to evaluate EPOC's implementation interventions used in a Dutch long-term care organisation for people with

intellectual disabilities and analyse social mechanisms initiated by these interventions.

What was implemented?

The present study focused on a research-led implementation of the method Multi-Disciplinary Expertise Team (MDET). MDET was developed and tested for effectiveness in a large organisation for people with intellectual disabilities in the Netherlands (Schippers, 2019). It is a multi-component program focusing on the reduction of restrictive measures in care for people with intellectual disabilities. Involuntary care is reduced through multi-disciplinary consultation at the level of residential care units and multi-disciplinary treatment interventions at the level of residents. MDET includes psychologists, occupational therapists, physicians, and video feedback trainers (Schippers, 2019) and the like. The involvement of these disciplines is tailored to the demands and challenges around restrictive measures in group homes. MDET produces a consultation plan based on descriptions of restrictive measures in residents' care plans and leads to written advice on which evidence-based clinical interventions to deploy to reduce the need for restrictive measures. The protocol for MDET follows a series of six consecutive phases (Table 1). However, the actions in each phase are flexible and have to be tailored to the culture, structure, and circumstances of care organisations and group homes and the factors that have led to putting restrictive measures in place.

The complexity of implementation (Clark, 2013) was, in the case of MDET, linked to the breadth of expertise that the multi-disciplinary teams had to wield and the multiple actors (experts, support staff and residents) who had to be involved. Furthermore, implementation had to occur in the complex and adaptive organisational and policy context of long-term care for people with intellectual disability, requiring normative and relational restructuring to mould elements of the environment to allow the method to do its work (May et al., 2016).

MDET was implemented when the Dutch government prepared a new legal Act to regulate the use of involuntary care for people with disabilities (Care_and_Coercion_Act, 2018). This Care and Coercion Act was meant to improve the protection of the rights of people with intellectual disabilities on self-determination, based on the Convention on the Rights of Persons with Disabilities (United_Nations, 2006). Implementation of MDET at the level of care teams, therefore, became intertwined with the more significant issue of how the care organisation should prepare for implementing the regulations in the Act more generally.

Theoretical background

Normalisation Process Theory (NPT) (May et al., 2009; Murray et al., 2010) may help explore social mechanisms in implementation processes in complex long-term care for people with intellectual disabilities. It is a mid-range sociological theory about what people individually and collectively do to make new methods routine in their everyday practice (May & Finch, 2009). NPT does not focus on individual attitudes, opinions, and intentions. It highlights the social organisation of the work (implementation), of making a practice (a way of doing) into a regular and taken-for-granted routine (embedding), and of sustaining this practice in the social context (integration). NPT has guided qualitative analyses across several healthcare settings and informed implementation processes (McEvoy et al., 2014). It offers four core constructs (or social mechanisms) for the normalisation processes involved in implementing a new technique, intervention, or method. The social mechanisms of coherence, cognitive participation, collective action, and reflexive monitoring are supposed to be in dynamic relationships with each other across

Table 1. Phases of MDET (Multi-Disciplinary Expertise Team) (summary).

Phase	Actions
1. Preparation	Informing residents, legal representatives and the care team. Inventory and description of restrictive measures.
2. Start	Consultation with care team to determine the urgency of reducing restrictive measures and gain consensus. Outcomes are described in the consultation plan. The capacity and motivation of the team are taken into account.
3. Plan	Completing the consultation plan by including a treatment plan. Treatment plans are based on evidence-based practice, experts' experiences, preferences of residents, legal representatives and support staff. The description is submitted to the care team in an iterative process to ensure agreement.
4. Action	Reducing restrictive measures as described in the consultation plan. The steps taken are registered in the registration module to follow progress. The treatment plan can be adjusted to new insights.
5. Completion	The expert and care team establish that the highest possible reduction of restrictive measures has been achieved. The team may opt for a follow-up appointment in a few months.
6. Follow-up	After a few months, the expert and the team discuss the state of affairs regarding restrictive measures, registration, the progress of phasing out and cooperation between disciplines. If issues cannot be answered adequately, MDET can be initiated again.

organisational contexts, structures, social norms, group processes, and conventions (Murray et al., 2010).

Coherence is about sense-making. The question "*What is the work?*" is being answered through the mechanisms: *differentiation* (the practice is defined by its differences from other practices), *communal specification* (the practice is understandable in relation to its distinctive features and perceived suitability), *individual specification* (actors individually understand their specific tasks and responsibilities), and *internalisation* (the value, benefits and importance of the practice is understandable).

Cognitive participation is about engagement in a complex practice. The question "*Who does the work?*" is being answered through mechanisms as *initiation* (work that brings a practice forth), *enrolment* (actors working together and organising themselves to participate), *legitimation* (ensuring actors that it is right to be involved), and *activation* (effectively organising the practice into actions, materials and procedures).

Collective action is about enacting the practice. The question "*How does the work get done?*" is being answered through the mechanisms: *interactional workability* (how actors operationalise the practice), *relational integration* (the way a practice is mediated and understood within the networks of people around it), *skill set workability* (the allocation and distribution of work that underpin the division of labour as a practice is conducted), and *contextual integration* (the incorporation of a practice within a social context).

Reflexive monitoring is about evaluating and appraising the practice. The question "*How is the work understood?*" is being answered through mechanisms as *systematization* (actors collect information to determine how effective and useful the practice is), *communal appraisal* (formal or informal evaluation of the worth of a practice in an organised systematic manner), *individual appraisal* (experiential and unsystematic appraisal of the effect of the practice), and *reconfiguration* (appraisal attempts to redefine procedures or modify the practice) (Finch et al., 2013; Johnson & May, 2015; May et al., 2009; May & Finch, 2009).

While the social mechanisms of Normalisation Process Theory may be rather abstract, Johnson and May (2015) found that it was possible to link these mechanisms to the more concrete implementation interventions described within the aforementioned EPOC taxonomy. Furthermore, the social mechanisms of NPT offered explanations for the differences in effectiveness for these implementation interventions found in their systematic review of the literature. They found that more effective implementation interventions, such as Patient-Mediated Interventions, Audit and Feedback,

Educational Outreach Visits and Reminders tended to initiate more social mechanisms of NPT, especially in *Collective Action* and *Reflexive Monitoring*. Less effective interventions, such as Local Consensus Processes and Local Opinion Leaders, tended to initiate *Coherence* or *Cognitive Participation* (Johnson & May, 2015).

In long-term care for people with intellectual disabilities, little is known about the effectiveness of implementation interventions on social mechanisms in implementation processes. The MDET trial was set up without a pre-established implementation plan. Interventions were used by the coordinating researchers and MDET experts when hindering factors occurred in the uptake or progress of the method. They assumed interventions to be effective based on their tacit knowledge or previous experiences with overcoming impeding factors in dissemination or implementation processes. Studying this tacit knowledge might reveal valuable knowledge on implementation interventions and their influence on social mechanisms in long-term intellectual disability care.

Aim and objectives

This paper aimed to understand the social mechanisms at work in implementation processes in long-term care for people with intellectual disabilities. These mechanisms may manifest themselves when professional implementation interventions are applied. The EPOC taxonomy provides a well-known terminology for identifying such interventions. However, given the differences between regular health care and long-term care, the terminology and definitions might need to be tailored to what happened in this context. Our first research question was: *Which professional implementation interventions were used to implement the MDET method in long-term care for people with intellectual disabilities?*

To identify the social mechanisms activated by these interventions we built on the NPT-EPOC framework developed by Johnson and May (2015) based on their systematic review. Our second research question was: *What social mechanisms were initiated by implementation interventions during an implementation process in long-term intellectual disability care?*

Methods

Study context and data collection

We used data of the consultation processes of MDET in 19 residential group homes from the trial of Schippers (2019). The trial was conducted in a large long-term care organisation for people with intellectual disabilities

in the Netherlands. The organisation provided a broad spectrum of care, including support for living with intellectual and physical disabilities as well as treatment for additional psychiatric problems and challenging behaviour, to approximately (at the time) 9500 people with intellectual disabilities across all levels of severity and all ages. In the trial, group homes ($N = 50$) providing 24/7 care for at least four residents were randomly selected from 566, and randomly allocated to an experimental ($n = 25$) or control condition. Only group homes in the experimental condition implemented MDET. For this present study we included data if a start had been made with implementing MDET, and a consultation plan was written and discussed (phase 1 and 2). Data of 19 group homes were available, with 178 documents.

Data content

Units of analysis were information letters to managers, behavioural consultants, support staff and clients or their representatives, the written consultation plans for the reduction of restrictive measures, notes of discussions in care teams, e-mails and notes of telephone conversations, and written comments, questions and tips by the coordinating researcher. Letters sent at the beginning of the implementation process of MDET contained information about restrictive measures and the need for reducing these measures. The letters also informed participants about the MDET method and asked their permission to be included in the trial effectiveness study.

Consultation plans were written by the coordinating researcher and experts of the Multi-Disciplinary Expertise Team. These consultation plans described the group home and each individual client, and particularly the restrictive measures applied. Each consultation plan contained hypotheses on the origins and persistence of the restrictive measures and a report of the expert's consultation with care professionals of the group home. Finally, the consultation plan contained a treatment plan in which interventions were proposed to reduce restrictive measures.

Notes of discussions, phone calls and e-mails were mostly written by the expert. In a few cases these were written by a professional working at the group home where MDET was implemented. Comments, questions and tips were written by the coordinating researcher.

Ethics

The trial of Schippers (2019) was approved by the Ethics Committee of the faculty of Behavioural and Movement Science, Vrije Universiteit Amsterdam vcw.1310.009.

Participants gave their informed consent, which included qualitative analysis of written materials regarding the implementation of the method collected during this trial.

Data analysis and procedure

A research assistant of the care organisation anonymised all data of 19 group homes and organised the data along a timeline of actions and events. We started with directed qualitative content analysis (Naupess, 2019) and used the overview of professional implementation interventions of the Cochrane Effective Practice and Organization of Care Review Group (EPOC, 2002) as a coding scheme.

The first author coded data and discussed the findings with the second and third authors. This led to preliminary adaptations of EPOC's professional implementation interventions, creating a better fit with the data. Subsequently, the first author recoded the data of 12 group homes, and a research assistant independently recoded data of seven group homes. They also made narrative descriptions for each group home in line with the six consecutive phases of MDET (Table 1) to follow the implementation process. When rich data were available, implementation interventions in phases 1–5 were easily recognisable. Group homes with less available data showed gaps in the completion of the phases. In a few cases the sixth phase (follow-up) was mentioned in the data although we did not find any notes reflecting this phase. Therefore, implementation interventions could not be coded for phase 6. In the results we excluded phase 6.

The first and second authors and the research assistant reviewed the adapted coding scheme for reliability. Developing the adaptations in EPOC's implementation interventions was an iterative process. Doubts and questions were discussed with the project leader until they reached consensus. This resulted in a new adapted coding scheme, as presented in Table 2. Data and narrative descriptions of 15 group homes were independently reviewed by two researchers. The data of 4 group homes were so limited that review was not necessary. Differences in the coding of data were discussed until consensus was reached.

In the final step, the first author checked all 19 group homes to make sure data were coded in line with the final coding scheme. For each group home, an excel-overview of implementation interventions used in each phase of MDET was made. If an implementation intervention was coded several times in a single phase of MDET, this intervention was counted only once.

Table 3 shows the range of implementation interventions, adapted for MDET, used in 19 group homes. The numbers present the total group homes where an implementation intervention was used, which implementation interventions were most commonly used, and in which phase.

The narrative descriptions of the implementation processes in each group home were used to get more insight into the application of implementation interventions to understand the relation between these interventions and NPT's social mechanisms at play. Using the framework method for analysing qualitative health care data (Gale et al., 2013) the content of the adaptations of EPOC professional interventions were mapped on the 16 subconstructs of Normalisation Process Theory. This resulted in a matrix (Table 4) providing insight into what social mechanisms were initiated by professional implementation interventions adapted for MDET.

Positionality and reflexivity

The first author is a behavioural consultant in care for people with intellectual disabilities, specialised in treating residents with challenging behaviour and restrictive measures. Although she worked at the care organisation where the data were collected, she was not involved. She knows the care organisation well, which made it easier to relate to the social mechanisms during the implementation of MDET. To counter bias, the data were reviewed by a research assistant and the second author. Both had minimal experience working in care for people with intellectual disabilities. Mapping the EPOC interventions to NPT constructs was an analysis made by the first author. To further counter bias, the NPT-EPOC matrix was discussed with the project leader.

Results

The Results section is structured as follows: First, adaptations of EPOC professional implementation interventions are described. Second, an overview is given of the range of implementation interventions across different phases of MDET. Finally, we place the implementation interventions in an NPT-EPOC framework to identify the social mechanisms at play.

Adaptations of EPOC's interventions to describe the implementation of MDET

Developing the adaptations in EPOC's professional implementation interventions (Table 2) was an iterative process. The intervention *Distribution of educational materials* (DEM) according to EPOC involves published or printed recommendations for clinical care to stimulate behavioural change. The data revealed that within the implementation of MDET, multiple stakeholders received information letters about MDET and the effectiveness trial. This led to the start of implementation. Therefore, we added a new subcategory *Distribution of information materials* (DIM).

The intervention *educational outreach visits* focuses on meetings of trained persons with caregivers in their working practice to give information and change practice. Because educational outreach may be done in person, online or by phone, we abbreviated this label to *educational outreach (EO)*. Two subtypes were recognised. The intervention described as "*educational outreach-general*" (EO-G) aimed at increasing care staffs' insights into the background of challenging behaviour among people with intellectual disabilities. The intervention described as "*educational outreach-treatment interventions*" (EO-T) involved experts proposing treatment for one client to reduce restrictive measures.

The category "*Patient-mediated interventions*" in EPOC focuses on new clinical information collected directly from patients and given to the provider. Two adaptations were made. Within the Dutch context of long-term care, residents are not seen as "patients." They are called "clients." The "mediated"-part is complicated in care for people with intellectual disabilities because some may have difficulty speaking for themselves. Representatives such as parents or siblings, and in this research mainly personal caregivers, spoke on behalf of their clients. Therefore, we renamed this as *client-related interventions* (CRI). At the organisational level, this intervention involved the systematic recordings of restrictive measures in client files, supporting the need to implement methods, such as MDET, to comply with the Care and Coercion Act. At the client level CRI was recognised in obtaining descriptions of the forms of restrictive measures used, providing the basis for consulting with support staff to consider alternatives.

EPOC's implementation intervention *local consensus processes* is about including caregivers in discussions to ensure they agree the clinical problem is important and the approach to managing the problem is appropriate. In starting up the method, consensus processes in various layers of the organisation (from the Board to clients and their representatives) took place; therefore, we omitted the word "local." *Consensus Processes (CP)* were mostly held with direct care staff, the physician, behaviour consultant, and manager responsible for providing daily care and the MDET-coordinator and -expert(s). In a few cases review committees for restrictive measures were also involved.

Table 2. Adaptations of EPOC's professional implementation interventions.

Professional implementation interventions	Description by Cochrane EPOC review group (2002)	Description of adaptations of professional implementation interventions for MDET	Code
Distribution of educational materials	Distribution of published or printed recommendations for clinical care, including clinical practice guidelines, audio-visual materials and electronic publications. The materials have been delivered personally or through mass mailings.	Distribution of educational materials. Distribution of information materials.	DEM DIM
Educational meetings	Health care providers who have participated in conferences, lectures, workshops or traineeships.	*No adaptations were made.*	EM
Local consensus processes	Inclusion of participating providers in discussion to ensure that they agreed that the chosen clinical problem was important and the approach to managing the problem was appropriate.	*The word "local" has been omitted because Consensus Processes were held throughout various layers within the organization.* Discussions with those directly or indirectly involved in care provided to residents to achieve consensus regarding the process of MDET. If consensus is not reached, a follow-up is needed.	CP
Educational outreach visits	Use of a trained person who met with providers in their practice settings to give information to change the provider's practice. The information given may have included feedback on the provider's performance (s). *Note: The word "visit" has been omitted because Educational Outreach can have other forms as well (phone, e-mail etc.).*	In educational outreach general (G) background information is given about additional psychiatric or behavioural problems occurring in people with intellectual disabilities, such as anxiety, autism, attachment, PTSD, challenging behaviour and applied restrictive measures. This kind of educational outreach aims to enhance the knowledge and understanding of support staff.	EO-G
		The expert asks questions about the behaviour or standard treatment of an individual resident based on his experience and knowledge. The expert provides educational outreach by proposing a specific treatment (T) intervention for an individual resident.	EO-T
Local opinion leaders	The use of providers nominated by their colleagues as "educationally influential." The investigators must have explicitly stated that their colleagues identified the opinion leaders.	Local professionals who have a significant influence on the care team. For example, a team leader, a caregiver with substantial expertise, the behavioural consultant, physician or manager. These professionals are often involved in making decisions and explaining these to their care team.	LOL
Patient mediated interventions	New clinical information (not previously available) is collected directly from patients and given to the provider e.g., depression scores from an instrument. *Note: In Dutch long-term care people with intellectual disabilities are not seen as patients, but referred to as clients.*	People with intellectual disabilities often have difficulty speaking for themselves. Relatives and personal caregivers act as proxies. Therefore, we renamed this intervention to client-related interventions. Descriptions of the restrictive measures in client's personal files or in notes of discussions about the meaning of client's behaviour leading to the use of restrictive measures or the effects of treatment interventions on residents' behaviour.	CRI
Audit and Feedback	Any summary of clinical performance of health care over a specified period of time. The summary may also have included recommendations for clinical action. The information may have been obtained from medical records, computerised databases, or observations from patients.	After applying treatment interventions to reduce restrictive measures, the expert evaluates the performance of support staff in daily support of residents. Feedback is given to further the process. This can be positive or negative feedback, questions for further clarification, proposals for improvement, or acknowledging progress towards the goals of the new care plans.	AF
Reminders	The patient or provider encounters specific information, provided verbally or on a computer screen, which is designed or intended to prompt a health professional to recall information. This would usually be encountered through their general education, in the medical records or through interaction with peers, remind them to perform or avoid some action to aid individual patient care. Computer-aided decision support and drugs dosage are included.	*No adaptations were made.*	R
Marketing	Use of personal interviewing, group discussion (focus groups) or a survey of targeted providers to identify barriers to change and subsequent design of an intervention that addresses identified barriers.	*The MDET method itself is a form of marketing. Within the method we did not code marketing as a separate implementation intervention.*	M
Mass Media	Varied use of communication that reached , including television, radio, newspapers, posters, leaflets, and booklets, alone or in conjunction with other interventions targeted at the population level.	*This implementation intervention was not found in this study.*	MM

Local opinion leaders (LOL), according to EPOC, are explicitly identified as being influential by their colleagues. In long-term care for people with intellectual disabilities, a care team works together permanently to meet the needs of residents. To organise this collaboration, members of a care team have various functions

and roles. For example, a personal caregiver has a leading role in shaping care for a resident and acts as his primary spokesperson. The behavioural consultant responsible for the treatment and daily care also has a leading role. To get a care team to start implementing MDET these leading roles were used to make first contact. In reducing restrictive measures other care team members, besides the personal caregiver and behaviour consultant, were also identified as Local Opinion Leaders.

Audit and Feedback (AF) is referred to as "Any summary of clinical performance of health care over a specified period. The summary may also have included recommendations for clinical action." This implementation intervention was used after applying treatment interventions to reduce restrictive measures. The MDET expert summarised and evaluated performance and gave feedback to further the process.

The implementation intervention *Educational Meetings* (EM) was observed in the implementation of MDET, in workshops based on Video Reflection Training (Meadows et al., 2020). The intervention *Reminder* (R) was used to prompt support staff to perform or avoid action. The implementation interventions *Marketing* and *Mass Media* were not found in the data of MDET.

Range of EPOCprofessional implementation interventions

An overview of professional implementation interventions, observed in 19 group homes in five consecutive phases of MDET, was created to identify frequently used interventions (Table 3). If in one group home an implementation intervention was observed more than once in an MDET phase, this intervention was counted only once. The overview showed 317 professional implementation interventions. Most interventions were observed in the first phase (91), the second phase (78) and the fourth phase (75). Consensus Processes were most frequently observed (67). This is closely followed by Client-Related Interventions (60) and

Educational Outreach-Treatment Interventions (50). Distribution of Educational Materials (DEM) was least observed (3).

Mapping adaptations of EPOC professional interventions to social mechanisms of normalisation process theory

To understand how professional implementation interventions may have initiated the social mechanisms of Normalisation Process Theory during the implementation of MDET, an NPT-EPOC coding framework adapted for MDET was developed (Table 4), following the example of Johnson and May (2015). The order of EPOC professional interventions was based on the range of interventions (Table 3). The table shows that frequently used EPOC implementation interventions linked to a diversity of social mechanisms, whereas less frequently used interventions were linked to one or just a few social mechanisms.

To pursue *Coherence,* EPOC's implementation intervention Consensus Processes (CP) was used frequently. CP targeted 3 sub-constructs of *Coherence*: *Communal Specification*, *Individual Specification* and *Internalization.* Professionals involved in implementing MDET built a shared understanding of the aims and expected benefits of MDET. They explored their collective and individual tasks and responsibilities and added value to the method by connecting it to their clients' needs. Client-Related Interventions (CRI) manifested in recordings of restrictive measures in client files were also an intervention to pursue *Coherence*. CRI added value and importance to the MDET method from a client's perspective (*Internalization)*. Pursuing *Coherence* was also observed in the small circle of support staff around one specific client. Educational Outreach-Treatment interventions (EO-T) with step-by-step advice on how to reduce restrictive measures helped caregivers understand their specific tasks (*Individual Specification)* and the benefits and purpose of MDET (*Internalization*).

Table 3. Range of (adaptations of) EPOC's professional implementation interventions across MDET phases.

	DEM	DIM	EM	CP	EO-G	EO-T	LOL	CRI	AF	R	Total interventions/phase
Phase 1	2	19	0	16	9	16	9	19	1	0	91
Phase 2	1	1	1	19	8	13	12	19	3	1	78
Phase 3	0	0	1	6	3	8	6	4	2	1	31
Phase 4	0	1	4	19	4	11	10	15	9	2	75
Phase 5	0	8	0	7	3	2	2	3	8	9	42
Total interventions	3	29	6	67	27	50	39	60	23	13	317

Notes: the numbers present the total amount of group homes where an implementation intervention was coded in one phase; for example, the number 19 in phase 1 (CRI) means this intervention was used in all 19 group homes in phase 1.

Table 4. NPT-EPOC framework adapted for MDET.

frequency used intervention high to low	Coherence				Cognitive participation				Collective Action				Reflexive monitoring				Total
	Differentiation	communal specification	individual specification	Internalization	Initiation	Enrolment	Legitimation	Activation	Interactional workability	Relational Integration	Skill set workability	Contextual Integration	Systematization	Communal appraisal	Individual appraisal	Reconfiguration	
CP		X	X	X	X		X	X		X		X	X	X			10
CRI		X		X		X			X				X	X	X		7
EO-T			X	X				X	X		X						5
LOL				X	X	X	X	X	X	X		X					8
DIM	X	X											X				3
EO-G									X	X							2
AF							X	X	X		X		X	X		X	7
R							X			X	X	X					4
EM									X		X						2
DEM									X								1
Total	1	3	2	4	2	2	4	4	7	4	4	3	4	3	1	1	

(Top spanning header: "Spread of NPT constructs within intervention")

Within the social mechanism *Collective Action* seven EPOC's implementation interventions were mapped on the interactional work that people do with each other to operationalise the MDET method in practice (*Interactional workability*): support staff discussed restrictive measures of residents in team meetings to seek consensus (CP) about which measures should be phased out first and in what way this should be operationalised (EO-T). To inform their decisions, they relied on the client's perspective (CRI), formulated by personal caregivers (LOL) and on general knowledge about common background problems of people with intellectual disabilities (EO-G, DEM, EM). This general knowledge provided through Educational Outreach-General (EO-G) and Educational Meetings (EM) helped build accountability and confidence in MDET and among support staff teams who were collectively in action to reduce restrictive measures (*Relational integration*).

Cognitive Participation was initiated by EPOC's implementation interventions, Consensus processes (CP) and Local Opinion Leaders (LOL). These interventions were used to drive the method forward *(Initiation)* and stay involved *(Activation)*. Support staff teams needed to (re)-organise themselves and others to be able to build communal engagement (*Enrolment*) and collectively believe that it was justified to be involved in reducing restrictive measures (*Legitimation*).

To pursue *Reflexive Monitoring* Audit and Feedback (AF) and Consensus processes (CP) were used for Individual and Communal Appraisal. Client-related Interventions (CRI) manifested in recordings of restrictive measures in the clients' files were used to collect quantitative information about the effectiveness of MDET (Systematisation).

Discussion

Large long-term intellectual disability care organisations in the Netherlands are complex systems in which clients and care professionals seek stability and predictability. Change is perceived as challenging, which complicates implementing innovations. Within this complex context this study explored the application of EPOC's professional implementation interventions (EPOC, 2002) to understand social mechanisms, as described by Normalisation Process Theory (May et al., 2009), at work in an implementation process.

EPOC's professional implementation interventions needed to be tailored to match the content of implementation actions we observed and to enhance granularity within EPOC's professional interventions to allow more accurate classification (Mazza et al., 2013). Although adaptations of implementation interventions in this study were made in the context of implementing MDET, interventions, such as Consensus Processes (CP), Local Opinion Leaders (LOL) and Client Related Interventions (CRI), may also be useful in implementing other innovations in complex long-term care organisations.

In contrast to Johnson and May's (2015) findings in their systematic review, we found that Consensus Processes involving Local Opinion Leaders may be widely effective in implementation processes in long-term intellectual disability care. This might be due to the

integrative nature of this type of care in which professionals of various disciplines need to align their actions. Our observations align with studies conducted from the perspective of Normalisation Process Theory in long-term care for the elderly. Implementation of monitoring technology appeared to be enhanced by involving stakeholders within discussions and decisions (i.e., consensus processes) (Hall et al., 2017). Resnick et al. pointed out (2004) involving "committed champions" (i.e., local opinion leaders) as part of a support team facilitated implementation and motivated care teams to learn new skills (Resnick et al., 2004). Woo et al. (2017) also identified the use of "champions, who foster and reinforce changes for improvement" (i.e., local opinion leaders) as the most effective implementation intervention (Woo et al., 2017).

Client-Related Interventions appeared to be key in motivating support staff to implement a new method requiring behavioural change. This is in line with the findings of Johnson and May (2015). Moreover, recent studies in long-term care for people with intellectual disabilities also show the importance of involving client's opinions' concerning choices and evaluations of methods or treatment interventions (Wolkorte et al., 2019). In identifying barriers to implementation processes and composing implementation strategies clients' engagement is also valuable (van Rooijen et al., 2021).

Johnson and May (2015) ranked implementation interventions in order of effectiveness based on their systematic review. In the present study interventions were ranked in order of frequency of use by the coordinating researcher and the MDET experts. They used interventions that they assumed to be effective in long-term intellectual disability care based on their tacit knowledge or previous experiences with implementation. In developing an NPT-EPOC framework adapted for MDET, we found that frequently used implementation interventions tended to initiate many social mechanisms described by Normalisation Process Theory (May et al., 2009), especially when relative to the NPT-EPOC framework by Johnson and May (2015). Ten (out of sixteen) social mechanisms of NPT were activated by the implementation intervention Consensus Processes and eight by Local Opinion Leaders. Thus, we identified these interventions to have a broad effect on social implementation mechanisms, in contrast to the more narrow effects that Johnson and May identified on three or fewer social mechanisms.

This might indicate the differences in contexts between regular health care and this long-term care setting. First, in regular health care, implementation processes of new methods are often limited to the ward or clinic that provides a certain type of care for which

the new method is suitable. While, in long-term intellectual disability care, professionals from multiple disciplines work together to provide care in various life domains. This increases the number of professionals who need to be involved in the implementation. Second, in regular health care, care professionals apply new methods to patients newly admitted to the ward or clinic. The patients usually have no experience with the old method and will, therefore, not notice any difference in their treatment. In long-term intellectual disability care, new methods are implemented in the care and support of clients who previously had to deal with the old method, and, therefore, changes in care need to be discussed and justified not only among the professionals but also with the clients and their families. For this reason, the Consensus Processes were prominent and initiated more social mechanisms of NPT, relative to what Johnson and May found.

In implementing MDET the most commonly used implementation interventions initiated *Coherence, Cognitive Participation and Collective Action.* These findings also differ from the findings of Johnson and May (2015): they found that more effective interventions tended to act across the social mechanisms of Collective Action and Reflexive Monitoring, less effective interventions tended to focus on Coherence and Cognitive Participation. This might be an indication of the differences between implementation processes in regular health care and long-term care for people with intellectual disabilities.

Coherence, which is about sense-making and understanding the practice throughout all layers of the organisation (from the Board to support staff providing daily care), might be more relevant in long-term intellectual disability care because it fosters broad and continuous support of all involved actors in changing their daily routines and behaviour. Agreement of management boards about which innovation makes sense for their care professionals in daily practice with clients may catalyse consensus processes and foster collaboration between various disciplines (Carney, 2007).

This also underscores the need for *Collective Action* across various care disciplines. The importance of Collective Action is reflected in the amount and diversity of implementation interventions acting across this social mechanism, especially when relative to the NPT-EPOC framework of Johnson and May (2015). Collective action is about how to perform a practice (May et al., 2009). Since MDET is a complex method, based on a broad domain of evidence-based knowledge and treatment, pieces of advice on how to implement the method and how to reduce restrictive measures need to be tailored to the specific circumstances in an

organisation, in a group home and to their individual needs. Within each phase of MDET components of the method can be moulded to fit these specific circumstances and needs, which is referred to as the *plasticity of the method* (May et al., 2016). However, the core components of the method MDET must remain intact to guarantee the effectiveness of the method and to work collectively towards the same goals and outcomes (Chambers & Norton, 2016). Therefore, all involved professionals of various disciplines need to align their support and behaviour. To make collective action possible, changes in interpersonal interactions and group processes throughout all layers of a long-term care organisation might be needed, which is referred to as the *elasticity of relations within an organization* (May et al., 2016).

The degree to which professionals within a long-term care organisation are prepared to restructure their relations and adapt their individual and collective behaviour to the requirements of the new method and its goals determine the outcomes of an implementation process (May et al., 2016). The relational work that the coordinator researcher, MDET experts, local opinion leaders and support staff did to collaborate, engage in the new method, and pursue the shared goals regarding the reduction of restrictive measures is captured in the social mechanism *Cognitive Participation* (Hall et al., 2017).

Implications

Organisations in long-term care for people with intellectual disabilities in the Netherlands have to deal with the engagement of various disciplines in the care, treatment and support of a client. Professionals from these disciplines have to collaborate and agree on the right treatment and support for these clients, who are themselves often to a limited degree able to express their needs and wishes. When innovations are being implemented, all actors will have to adjust their actions. Therefore, implementation requires careful preparation, starting with a common understanding of the innovation and why it needs to be implemented. The social mechanisms, as described by Normalisation Process Theory, and especially *Coherence* and *Collective Action*, might be important to consider when organisations embark on the implementation of new practices. The adaptations of EPOC's implementation interventions can be used by policymakers, implementation experts and managers to embed innovations in the daily practice of support staff.

The adapted NPT-EPOC framework might help design implementation plans for long-term intellectual disability care. The framework gives direction in speculating on the possible effects of these interventions on the social mechanisms at play in implementation processes. It also shows the complexity of using and analysing implementation interventions because single interventions often share elements with other interventions, or single interventions are used together to pursue the desired effect (Johnson & May, 2015). Nevertheless, organisations in long-term care for people with intellectual disabilities and other long-term care facilities can benefit from the adapted EPOC taxonomy of professional interventions and the adapted NPT-EPOC framework, as described in this article, to design implementation plans and strategies for implementing complex methods, practices and tools.

Limitations

In this study, consultation plans and notes were analysed. These data were not generated to identify implementation interventions and social mechanisms in implementation processes. Data of group homes were selected if a start had been made with implementing MDET and if a consultation plan had been written and discussed with the care team. However, not all group homes went through the MDET method from start to finish. Also, some phases of MDET were not identifiable in the data. This may have affected the findings.

All data of 19 group homes were analysed by the first author, data of 15 out of 19 group homes were reviewed. Discussions about codes of implementation interventions were held in the beginning of the analysing process. After that, the first author discussed changes with the project leader because the research assistant and the second author were not available. Also, the development of the NPT-EPOC framework was discussed only by the first author and project leader. This might have influenced our analysing process.

During the analysis we realised there were two goals for which implementation interventions were used. The first goal was to guideline implementation of MDET. As a multi-component program with consecutive phases, interventions were needed to get people starting up and continuing the method. The second goal of reducing restrictive measures using the MDET method entailed behavioural changes of support staff. At the same time, some implementation interventions were used to achieve both goals at once. Earlier research also pointed out the intersection of professional implementation interventions and behavioural change techniques (Mazza et al., 2013). In this article, we had chosen to describe the distinction only when it was necessary to follow the implementation process.

The taxonomy of the Cochrane EPOC review group was updated in 2015 (EPOC, 2015). However, professional implementation interventions described by the Cochrane EPOC review group in 2002 were used for this study to remain in line with the NPT-EPOC framework published by Johnson & May (Johnson & May, 2015).

Conclusion

Professional implementation interventions aim to implement new methods and changing the behaviour of professionals in everyday work (EPOC, 2002). Study findings indicate that these interventions need to be tailored to long-term care for people with intellectual disabilities. Adaptations of these interventions have been highlighted in this study.

In long-term care, clients receive integrated 24/7 care, support and treatment. This means that their whole lives happen within the organisation. Implementation of innovations to reduce restrictive measures faces a complex reality because various disciplines need to work together equally to pursue the same goals. These actors need to find a mutual agreement and coordinate their collective behaviour to provide care, reflecting the social mechanisms, Coherence and Collective Action of Normalisation Process Theory. This also explains the large role of the implementation intervention Consensus Processes in normalising the method MDET and the fact that, contrary to Johnson and May (2015), we found that this intervention related to all 4 constructs of NPT.

Getting started with implementation processes in long-term care for people with intellectual disabilities and changing support staff behaviour requires careful preparation. The adaptations of implementation interventions for this care setting and the NPT-EPOC framework could be useful for long-term care organisations to gain insight into which implementation interventions are most effective and in which way underlying social processes will be affected.

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