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Group dynamics in a group-based, individualized physiotherapy intervention for people with multiple sclerosis: A qualitative study

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Abstract

Objective: Group-based physiotherapy is a common and beneficial intervention for people with multiple sclerosis (MS). Most group interventions are not individually adapted to each participant's needs. Evidence on how individualization and group elements can be combined in a clinical setting is lacking. The objective of this study is to expand the knowledge base in neurological physiotherapy by investigating the nature of group dynamics in a group-based, individualized intervention for people with MS.

Methods: This qualitative study included 13 nonparticipatory video observations (14 hr 38 min) of GroupCoreDIST exercise sessions complemented by 13 interviews (12 hr 37 min) with physiotherapists (PTs). The purposively sampled participants included 40 patients with MS (expanded disability scale of 1.0–6.5) and six PTs with expertise in neurological physiotherapy. Data were analysed using systematic text condensation in an enactive theoretical framework.

Results: Two main categories emerged from the material. (a) Individual systems affect group dynamics: Individual perceptions of success through adapted and embodied approaches positively affected the dynamics of the group. (b) Disease and exercise peer support: Social support was a substantial product of dynamic group processes and was enhanced through the PTs' strategic focus on experience sharing.

Conclusion: The results revealed that group dynamics benefit from individualization and the PTs' focus on experience sharing. These findings are contrary to the prevailing view that individualization and group-based interventions are mutually exclusive and thus should be considered in group-based interventions for people with MS.

KEYWORDS

exercise therapy, multiple sclerosis, physiotherapy, qualitative research

1 | INTRODUCTION

Group-based exercise is a widespread physiotherapy intervention for people with multiple sclerosis (MS) (Rasova et al., 2016), and related effect studies indicate improvements in several vital health domains,

such as strength, gait, balance, fatigue, exercise tolerance, and quality of life (Arntzen et al., 2019; Forsberg, von Koch, & Nilsagård, 2016; McCullagh, Fitzgerald, Murphy, & Cooke, 2008; Tarakci, Yeldan, Huseyinsinoglu, Zenginler, & Eraksoy, 2013; Taylor, Dodd, Prasad, & Denisenko, 2006). Peer support is additionally considered to be a

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major benefit in group-based exercise, which is not possible to achieve in one-on-one interventions (Everett, 2010; Jones & Kulnik, 2018; Mason, 2013). Qualitative interview studies report that companionship, experience sharing, and being accepted in a group are highly valued among patients with MS participating in group-based exercise (Aubrey & Demain, 2012; Dodd, Taylor, Denisenko, & Prasad, 2006; Learmonth, Marshall-McKenna, Paul, Mattison, & Miller, 2013). To our knowledge, no studies¹ have investigated how peer support processes occur in the clinical setting, reflecting the need for qualitative observational studies to develop group-based interventions for people with MS.

In rehabilitation, physiotherapy is traditionally provided as either one-on-one or group-based interventions. One-on-one interventions are thought to provide greater effects on physical functioning, whereas group-based interventions provide greater impacts on the social aspects of support and motivation (Everett, 2010; Jones & Kulnik, 2018). According to Plow, Mathiowetz, and Lowe (2009), group-based therapy may not address patients' individual and complex needs and therefore conflicts with the prevailing principle of individualization in MS rehabilitation (Amatya, Khan, & Galea, 2019; EMSP, 2012; Freeman & Gunn, 2018; National Institute for Health and Care Excellence, 2014). Individualization is a fundamental principle in physiotherapy, where assessments and treatments are adapted to a patient's specific needs concerning physical and cognitive functioning, underlying impairments, and their life situation and desires (Norwegian Physiotherapist Association [NFF], 2015; World Confederation for Physical Therapy, 2015). Individualization is particularly vital in MS rehabilitation, where symptoms and movement problems are complex and heterogeneous (European Multiple Sclerosis Platform [EMSP], 2012; National Institute for Health and Care Excellence, 2014). To include individualization in group-based therapy, Normann, Zanaboni, Arntzen, and Øberg (2016) developed an intervention (GroupCoreDIST, described in Appendix 1) with specialized exercises combining the benefits of collectivity and individuality. Thus, to explore how group dynamic processes take place in group-based and individualized physiotherapy interventions, qualitative investigations of GroupCoreDIST exercise sessions served as the basis for our study.

The scientific view of group dynamics is that they involve social processes that influence relations within groups (Forsyth, 2014; Myers, Abell, & Sani, 2014). Originating from psychology, group dynamics mainly rely on cognitivist theories in which the body and movements (which are essential in physiotherapy; Gjelsvik & Syre, 2016; Shumway-Cook & Woollacott, 2017) are omitted. Therefore, to enrich the understanding of group-based physiotherapy, theoretical perspectives that emphasize movements and the body are needed (Nicholls & Gibson, 2010). The body and movements are cornerstones of the *enactive approach*, which is the selected theoretical framework of our study. The enactive approach argues that sense-making and understanding of others, situations, and the world emerge through an individual's movements and interactions with the environment and other individuals (Di Paolo, Rohde, & De Jaegher, 2010; Di Paolo & Thompson, 2014; Thompson, 2010). Enaction emphasizes subjective

experience, bodily movement, and continuous interactions between the individual, the task, and the environment (Gallagher, 2012), which renders the approach highly relevant for interpretation of clinical physiotherapy practice.

Considering the enactive approach, the dynamics of group-based interventions are affected by the context and by how physiotherapists (PTs) and patients interact with each other. Interaction processes emerge between people and consist of mutually influencing words, gestures, and physical interactions (De Jaegher & Di Paolo, 2007; Fuchs & De Jaegher, 2009). Interaction can be particularly complex in group-based interventions, where the PT must take care of each individual's complex and specific needs *and* the group as a whole. Given these considerations, the enactive approach seems appropriate to address the following aims of our study: (a) to explore the dynamics of interactions between PTs and patients within an individualized group-based intervention for people with MS and (2) to explore the PTs' considerations regarding how clinical strategies affect such group dynamics.

2 | METHODS

2.1 | Design

As our research question aims to *understand* the content of group processes and interactions within the clinical encounter, we selected a qualitative methodology within the *interpretive* paradigm, where the world and knowledge depend on individuals' interpretations. Phenomenology, where lived experience is given primacy, and hermeneutics, where parts only make sense in relation to the whole, are the main philosophies of the interpretative paradigm and qualitative methodologies (Malterud, 2016). However, our study is not purely phenomenological or hermeneutical but relies on a more pragmatic methodology. Accordingly, the ability to choose among relevant, consistent, and appropriate theoretical frameworks and analysis methods becomes flexible. The enactive theoretical framework complies with the interactional matters of our research question and emphasizes the most important elements of neurological physiotherapy: the body and movement. Specifically, regarding methods of data collection, we selected video observations of exercise sessions to capture critical information about PTs' and patients' interactions within a group setting, which were complemented by in-depth interviews to obtain the PTs' reflections regarding the strategies used to generate positive group dynamics.

2.2 | Context of the study

The data for this study were collected from GroupCoreDIST exercise sessions, a group-based and individualized intervention for people with MS (Normann et al., 2016). In GroupCoreDIST, groups of three patients exercise together during an intensive 6-week period with three 60-min supervised sessions and two 30-min

unsupervised home sessions per week. To include specific adaptations, the PTs individually examine each patient and then choose options from among 33 predefined core stability exercises, which each consist of five levels of difficulty. In line with the GroupCoreDIST intervention, all patients perform the same exercise simultaneously but at different levels of difficulty according to their impairments. Appendix 1 includes a complementary description of the intervention.

2.3 | Participant selection and sample

The participants in our study were purposely sampled from a randomized controlled trial investigating the effect of GroupCoreDIST (Normann et al., 2016). The inclusion criteria were an MS diagnosis that was registered at the outpatient clinic in Norland Hospital Trust, Bodø, Norway, living in one of the six municipalities of the study, ≥ 18 years of age, able to sign a written informed consent, and an expanded disability status scale (EDSS²) score of 0–6.5. The exclusion criteria were pregnancy at the time of inclusion, exacerbation in the previous 2 weeks before enrolment, and other acute conditions. Table 1 presents the participants' characteristics.

We observed the exercise sessions and interviewed PTs at several stages of the intervention period, including the first session, last session, and at least one session during each week of the 6-week program to obtain sufficient data. The last author invited patients and PTs to participate by mail. All participants signed informed consent documents, and none refused to participate or dropped out.

2.4 | Data collection

From September 2015 to March 2016, the first author conducted nonparticipatory video observations of 13 group sessions for a total time of 14 hr 38 min. A hand-held video camera with a zoom feature was used to move carefully around the room and focus on details of the interactions in the group. Following the observations, the first author conducted 13 theme-based audio-recorded interviews with the six PTs at the PTs' facilities for a total time of 12 hr 37 min. We imported, transcribed, and organized the data and field notes in NVivo11 software (QSR International, 2016). See Appendices 2 and 3 for the interview and observation guides.

2.5 | Analysis

In our analysis of the data, we used Malterud's (2012) method for *systematic text condensation*. This pragmatic method is appropriate for our study as the research question assumes that both observations and interviews serve as data collection methods, and the method is not restricted to specific theoretical perspectives. However, systematic text condensation is inspired by methods grounded in phenomenology,

TABLE 1 Participant characteristics

Patients (n = 40)	
Age at intervention, mean, (SD) range	52.2, (13) 24–77
Gender	
Male, n (%)	27 (68)
Female, n (%)	13 (32)
Type of MS	
RRMS, n (%)	33 (83)
SPMS, n (%)	5 (12)
PPMS, n (%)	2 (5)
Years of MS, mean, (SD) range	10.2, (7.9) 0.5–33.0
EDSS, mean, (SD) range	2.4, (1.7) 1.0–6.5
Physiotherapists (n = 6)	
Gender	
Male	1
Female	5
Years since graduation	
0–5	0
6–10	2
>10	4
Number of PTs with a master's degree	2
Years of experience with neurological conditions	
0–5	1
6–10	1
>10	4
Experience with group interventions	6
Workplace ^a	
Primary healthcare with operating grant	3
Primary healthcare	3

Note: The participants originated from six municipalities in Norway (N = 1,000–50,000).

Abbreviations: EDSS, expanded disability status scale; MS, multiple sclerosis; PPMS, primary progressive MS; PTs, physiotherapists; RRMS, relapsing-remitting MS; SPMS, secondary progressive MS.

^aIn Norway, PTs working in public primary healthcare work in a private practice or have a fixed salary. A PT can run his or her own practice in which he or she receives an operating grant combined with a preset fee per patient from the government health financial management program plus a copayment from the patient. The PT can also be a public-sector employee with a fixed salary from the municipality.

which is also one of the foundations of our selected enactive framework (Gallagher, 2012). We followed each of the four steps of the systematic text condensation method (see Figure 1 for a specific example) and interpreted the meaning of our data through the enactive notions of sense-making and interaction (De Jaegher & Di Paolo, 2007; Di Paolo & Thompson, 2014; Fuchs & De Jaegher, 2009).

Step 1: To obtain an initial overview of the material, the first author read the transcripts from the interviews and watched the video

observations multiple times. Data concerning the research question were presented to the second and last authors, which led to discussions of possible *preliminary themes*.

Step 2: After establishing preliminary themes, the first author proceeded with identifying meaning units—fragments of text from the interviews (approximately one to four sentences) or videos of the observations (approximately 20 s to 1 min) related to the research question. We assigned a code to the meaning units with a name that described their contents. We developed the codes considering the enactive approach and prevailing principles of neurological physiotherapy. The first author presented these codes and their contents to the second and last authors and further discussions followed. We repeated this process several times. We sorted the codes that concerned similar content into two groups, each with two subgroups.

Step 3: We used the content (text and video) of each subgroup to write a condensate—a short artificial summary in first-person format. To write these condensates, we continued our interpretations considering the theoretical perspective and our physiotherapy knowledge. This text served as a basis for the result presentation that emerged in the fourth and final step.

Step 4: We rewrote the condensates into a text in third-person format, which is suitable for a result presentation in a scientific journal. We validated the text by carefully comparing the texts to their original contexts. For the result presentation, we selected specific quotes from the interviews and written descriptions from the observations that illustrated the content. The names of the code groups and the subgroups changed as the text developed. The final names are presented in Table 2.

2.6 | Research team and reflexivity

The first, second, and last authors are neurological PTs with experience in primary and secondary healthcare. The first and last authors have clinical experience with adults with MS, and the second author has a background in paediatrics. The second and last authors are experienced qualitative researchers with previous publications

addressing enactive theoretical frameworks. All authors share an interest in enactive theories and consider the approach to be an adequate framework for studying physiotherapy. The last author is one of the two PTs who developed the GroupCoreDIST intervention, which necessitated particular awareness of our predispositions. We analysed the data material theoretically, critically, and systematically, resulting in a balanced presentation of the findings.

3 | RESULTS

The results are presented as analytic text based on a combination of video and interview material. Illustrative situations from the observations and quotations from the interviews with the PTs are presented in italics.

3.1 | Individual systems affect group dynamics

The establishment of positive dynamics in the exercise groups was affected by how the PTs managed to move between each individual patient and the group as an overall entity. The PTs' interaction strategies differed between the individual and the group, and a relationship was apparent between success at an individual level and how dynamic processes within the group evolved.

3.2 | Individual system

In most of the group sessions, the individual attention given to the patients by the PTs mainly consisted of hands-on facilitation and a specific focus on each individual patient's movement quality. The PTs considered such individualization necessary due to the patients' differing impairments, and they therefore adapted the exercise levels of difficulty according to each specific patient's needs. When the patients improved their movements, joint expressions of success, engagement, and satisfaction emerged.

Observation: In a supine lying exercise (Figure 2), the PT notices that one of the patients extends his spine and has trouble controlling the

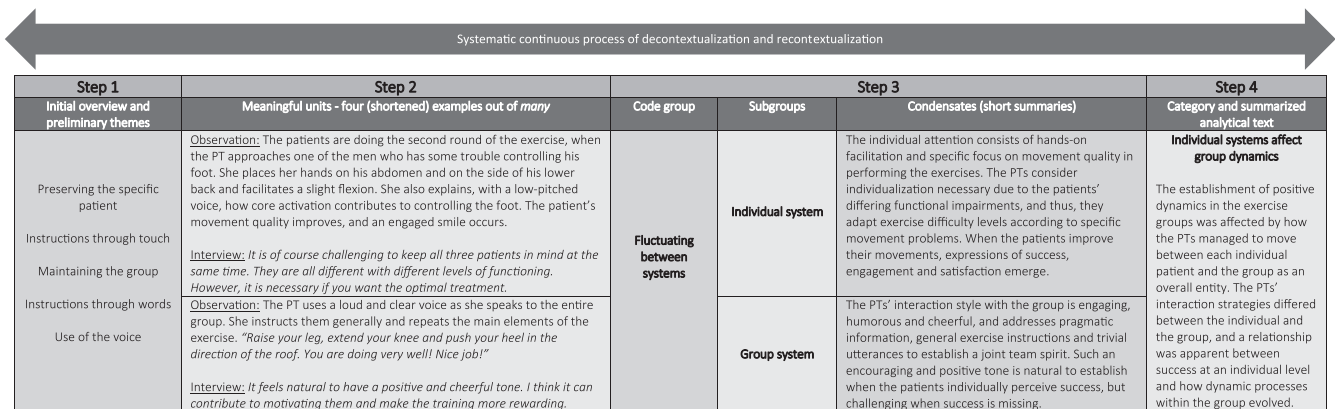
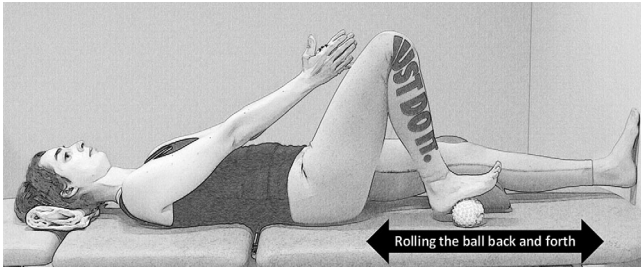


FIGURE 1 Analytic process, Example Category 1, *Individual systems affect group dynamics*

TABLE 2 Overview of categories and subgroups

Category	Individual systems affect group dynamics		Disease and exercise peer support	
Subgroup	Individual system	Group system	Disease-dependent experiences	Exercise-specific experiences

**FIGURE 2** Supine exercise with a small ball (edited/anonymized photo from the GroupCoreDIST manual)

direction of his foot and the ball. The PT approaches him, places her hands on his pelvis and abdomen, and facilitates slight flexion through activation of the abdominal muscles. "If you push your lower back down to the plinth, stabilizing muscles will contribute to controlling your foot," the PT says in a low-pitched voice. The patient continues the exercise with firm contact between the plinth and his lower back. He seems focused and achieves a more controlled back-and-forth roll of the ball. The patient clearly values the improved movement experience, as he utters "Much better!" with an engaged smile on his face.

In the interviews, the PTs stated that continuous movement between the patients was challenging as they had to manage three individual patients at the same time. Additionally, the PTs stated that they had to balance their attention between the patients and the group as an entity to address the needs of each individual and maintain a positive joint group spirit. Sometimes, when the patients' functional levels differed substantially, the PTs omitted individualization, and the organization of the exercise session was adjusted such that all patients performed the exercises at the same level of difficulty. In these groups, patients with low functional levels seemed to be frustrated when they failed to perform exercises that were too difficult, and patients with high functional levels seemed to lose some engagement when performing exercises that were too easy. As illustrated in the next subgroup, both the presence and absence of individualization affected the dynamics of the group.

3.3 | Group system

The PTs' interactions with the group as an entity were mainly characterized by engaging, humorous, and cheerful verbal interactions, which engendered a joint team spirit. The following illustrative situation is a continuation of the previous situation, which illustrates both the joint team spirit and the fluctuation between the individual system and the group system.

Observation: After helping the patient in the supine lying exercise, the PT turns to the group with a loud and clear voice, "Extend your arms in the direction of your knee, remain stable, and roll the ball back and forth slowly and with control." The PT pauses for a few seconds as she continues to move through the room. "And don't forget to breathe!" The group breaks into a laugh. "Yes, thank you, that is very good advice, we will do our best," says one of the patients, and the laughter continues.

According to the interviewed PTs, such encouraging and positive dynamics were easy and natural to establish when the patients individually demonstrated success and improvements. However, in groups where success and improvements were lacking, the PTs stated that establishing a joint positive team spirit was challenging, which was also confirmed in the observations. These findings illustrate how individual perceptions of meaningful achievements affect dynamics at a group level.

3.4 | Disease and exercise peer support

Interactions between the patients themselves also contributed to the dynamics of the group. Two main facets of these interactions emerged, namely, general sharing of disease-dependent experiences and specific here-and-now discussions regarding exercise perceptions and improvements. These processes of interaction emerged naturally between the patients but were enhanced when the PTs strategically arranged for such sharing.

3.5 | Disease-dependent experiences

The group sessions became an arena in which the patients shared various disease experiences that did not necessarily concern the specific exercises, such as medication-related matters and social support for newly diagnosed patients. The PTs considered such sharing a significant part of the intervention, which often took place before and after the actual exercise sessions. The illustrative quote is derived from one of the interviewed PTs explaining how the group warmly took care of a newly diagnosed and worried patient.

Quote: "They took such good care of her, comforted her and shared experiences from the time that they were newly diagnosed. An 'experienced' patient even invited her to a café meeting with another newly diagnosed woman of a similar age... ..So this has really been an opportunity to find peer support, and I think it is very good to have group dynamics where such processes emerge almost by themselves.

3.6 | Exercise-specific experiences

The interactions between the patients within the actual training session shifted from disease-dependent matters to a more detailed exchange of here-and-now perceptions of the exercises. These interactions seemed to make the patients attentive to each other's improvements, and positive remarks were common.

Observation: The group performs an exercise, and one of the patients comments to a male patient with severely reduced balance, "Your balance is better!". "Yes, it's unbelievable!", the man replies with a proud smile on his face. The third patient also smiles and nods her assent as the group continues the exercise, and the PT asks if they perceive that the foot is lighter to lift than before they joined the group. "Yes, it is easier, but the toes still bend on the right foot sometimes," one of the patients states. "Yes, I agree," a third patient replies, "my toes still bend when I am out of balance."

The PTs stated that giving the patients opportunities to verbalize their perceptions was important for learning from each other's experiences. The PTs considered that exchanging specific perceptions improved the focus on movement quality and progress and clarified that each patient had different functional levels and movement problems. Thus, the group became a safe place where they could learn and work at their own individual levels, while also sharing their experiences and benefitting from being part of a group.

Quote: "The support from the group is fundamental because it reduces the fear of failure and makes it clear that it is their own feeling of progress that matters. Yes, they are exercising individually at the same time as they are being part of a group."

4 | DISCUSSION

Our study's aims were to explore the nature of group dynamics within an individualized and group-based intervention for people with MS and to investigate how PTs' interactional strategies affected such dynamics. The findings revealed that the patients' individual movement success and the PTs' strategies for giving the patients opportunities to share their experiences substantially affected the dynamics of the groups. Patient-specific adaptations and bodily aspects of the interactions were important, implying that hands-on facilitation and individualization are beneficial in group interventions.

Success and improvements at an individual level contributed to a positive joint group spirit, and the absence of individual success seemed to be detrimental to the group spirit. Individualized approaches through hands-on facilitation were clear prerequisites for such success, illustrating the significance of physical interactions in clinical meaning-making processes (Normann, 2018). From an enactive viewpoint (Di Paolo et al., 2010; Di Paolo & Thompson, 2014; Thompson, 2010), the socially situated, moving, and perceiving body is essential to sense-making and contributes to our interpretation of patients' perceptions of improvements as powerful tools in physiotherapy. Thus, it seems appropriate to criticize the traditional view of individualized and group-

based interventions as mutually exclusive (Everett, 2010; Jones & Kulnik, 2018; Plow et al., 2009) and rather to welcome individual adaptations as an integrated approach within group settings.

However, individualization within a group can be challenging, and our findings illustrate how the absence of patient-specific attention also affects the group as an entity. When success and improvements were difficult to achieve for each patient, for example, if individualization was omitted due to widely differing functional levels, the atmosphere in the group deteriorated and the patients expressed disengagement. Accordingly, the dependent relationship between each individual patient and the group as an entity implies that PTs should possess strategies to combine individuality, for example, specific hands-on approaches that provide a patient with positive movement experiences, and collectivity, for example, providing engaging and humorous instructions to the entire group. As such, several levels of interactions within the group affected the dynamics among the participants (Figure 3).

Interactions between the patients themselves played a significant part in the intervention and were enhanced when the PTs encouraged the patients to share their disease-related experiences. These findings illustrate how the group became an arena of social support, which is in accordance with previous research (Aubrey & Demain, 2012; Dodd et al., 2006; Learmonth et al., 2013). Our findings complement these previous studies by elucidating how the PTs' interactional strategies affected the patients' opportunities for such sharing. When the PTs invited the patients to verbalize their experiences, shared reflections within the group seemed to establish a joint awareness and expanded the patients' insights and engagement. Similar processes were described in a study investigating individual treatment settings (Normann, Sorgaard, Salvesen, & Moe, 2013), which together with the results of this study underline the significance of integrating bodily experiences as part of communication in physiotherapy encounters.

4.1 | Strengths and limitations

The combination of observations and interviews strengthens our study's reliability and elucidates an uninvestigated field of physiotherapy. Preconceptions were continuously questioned throughout the research period,

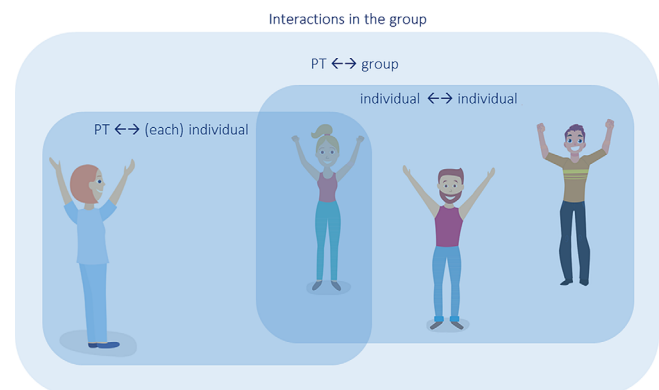


FIGURE 3 Several interaction systems

and validity and reliability are provided through descriptions of the methods, which report each item of the consolidated criteria for reporting qualitative research (Tong, Sainsbury, & Craig, 2007) and standards for reporting qualitative research (O'Brien, Harris, Beckman, Reed, & Cook, 2014) checklists. Nevertheless, readers should consider that all patients had EDSS scores ≤ 6.5 , originated from the same geographic area, and underwent one type of intervention. All data in our study originate from a randomized controlled trial, which potentially misrepresents typical clinical practice. The PTs in our study were probably more experienced and skilled than the average PT working in Norwegian municipalities, which also may misrepresent ordinary clinical practice.

The patients and the PTs were asked whether they felt that the presence of the researcher and the camera influenced them. The typical answer was "After a few minutes, I totally forgot that you were here." However, we assume that the presence of the researcher and the camera at least influenced the participants subconsciously and thus influenced the natural picture of the clinical encounter.

5 | CONCLUSIONS

Individual success and improvements through individualized and physical approaches positively affected group dynamics in a group-based intervention for people with MS. These findings contrast with the view that group-based and individualized interventions are mutually exclusive. Social support is a substantial product of dynamic group processes, which are enhanced through PTs' strategic focus on bodily experience sharing.

5.1 | Implications for physiotherapy practice and future studies

This study implies that PTs should be aware of how their interactional strategies affect group dynamics and include specific and adapted approaches in group settings. PTs should additionally consider if, how, and to what extent they encourage patients to share their bodily experiences in group-based interventions. These elements should be emphasized in education and in physiotherapy research. Future studies with different designs, samples, and contexts are needed. The patient perspective is particularly relevant in developing group-based interventions in physiotherapy.

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AUTHOR CONTRIBUTIONS

All authors qualify according to the criteria from ICMJE (International Committee of Medical Journal Editors). Contributions are accurately illustrated in the list of authors.

A.F.L. planned the study design, acquired the data material, conducted the analysis, drafted the manuscript. G.K.Ø. planned the study design, co-supervised the study, participated in the analysis, revised the manuscript critically several times. B.N. planned the study design, supervised the study, participated in the analysis, revised the manuscript critically several times.

ETHICAL APPROVAL

The study was conducted according to the Declaration of Helsinki and approved by The Norwegian Regional Committee for Medical Research Ethics (REK South-East: 2014/1715-7).

CONFLICT OF INTERESTS

The authors report no conflict of interests.

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ENDNOTES

- PubMed, MedLine, and PEDro were searched using the keywords multiple sclerosis, group exercise(/training/treatment/therapy), physiotherapy, physical therapy, group dynamics(/atmosphere), qualitative research, interaction, communication, therapeutic alliance, embodiment, and enactive theory. The latest search was executed on June 08, 2019.
- Expanded disability status scale (EDSS)—A measure widely used in clinical trials and for assessment of people with MS to quantify disability and monitor changes in disability over time. 1.0: walking independently; 6.5: able to walk 20 m with two crutches.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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