Danish University Colleges

Person-centered methods in group-based diabetes education
an intervention study investigating, developing, and implementing new approaches
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Publication date:
2018

Document Version
Publisher’s PDF, also known as Version of record with the publisher’s layout.

Link to publication

Citation for published version (APA):

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PhD Thesis
Vibeke Stenov

Person-centered methods in group-based diabetes education:
An intervention study investigating, developing, and implementing new approaches

Graduate School of Health and Medical Sciences, University of Copenhagen
January 2018
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Title:  
Person-centered methods in group-based diabetes education: An intervention study investigating, developing, and implementing new approaches

Topic description:  
Type 2 diabetes, person-centered approaches, self-management, group-based patient education and support, healthcare professional skills, communication skills, professional training, qualitative methods, action research.

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Submitted on:  
31 January 2018
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This study was carried out between January 2015 and January 2018 and submitted to the Graduate School of Health and Medical Sciences, University of Copenhagen. The study was fully funded by the Department of Nursing Science, Metropolitan University College and Diabetes Management Research, Steno Diabetes Center Copenhagen. I am immensely grateful for the opportunity this afforded me.

I want to thank my supervisors, Susanne Reventlow, Gitte Wind, and Nana Folmann Hempler, for our constructive discussions and your ongoing feedback. I am very thankful to my faculty supervisor, Susanne Reventlow, for guiding me through the process. Gitte Wind, thank you for asking good and challenging questions. Nana Folmann Hempler, a special gratitude for excellent supervision and daily support. You really inspired me throughout the whole process, and I have learned a lot from you.

I am also very grateful for receiving funding for a research stay. Special thanks to Michael Vallis, Behaviour Change Institute at Dalhousie University in Halifax, Canada, for giving me the opportunity for a research stay abroad. The stay contributed significantly to my knowledge about effective person-centered methods and strengthened the basis for developing the intended interventions in practice.

I wish to express my gratitude to Timothy Skinner for your scientific advice and contribution of extensive knowledge within the diabetes self-management field throughout your tenure as visiting professor at Diabetes Management Research, Steno Diabetes Center Copenhagen.

Thanks to all my colleagues at the Diabetes Management Research group, where I did most of my daily work, for tremendous scientific inspiration and helpful advice. Ingrid Willaing, thank you for supporting me through the process. Special thanks to my colleague lecturer, Katrine Greve at Metropolitan University College, for your participation in and support of data collection, which was followed by fruitful discussions. I also thank Metropolitan University College and Steno Diabetes Center Copenhagen for providing me with qualified student assistance. Thanks to Jennifer Green for high quality editorial assistance.
Importantly, I want to express my deepest gratitude to all the healthcare professionals and people with type 2 diabetes who participated in the study. I could never have conducted this research without your contributions, knowledge, and insights. I especially wish to thank the healthcare professionals who collaborated in this study for allowing me to conduct observations of your practice and for your active involvement in the workshops. Your dedication of significant time and energy to a number of activities during this research was invaluable.

Finally, my warmest gratitude to my husband Mikael for ongoing support, and to Gustav and Asger for giving me important breaks from the PhD study.

Vibeke Stenov
January 2018
LIST OF ARTICLES

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Article II:
https://bmcmemeduc.biomedcentral.com/articles/10.1186/s12909-017-1003-3

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<td>ADA</td>
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<td>DSMES</td>
<td>Diabetes self-management education and support</td>
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<td>EASD</td>
<td>European Association for the Study of Diabetes</td>
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<tr>
<td>HbA1c</td>
<td>Haemoglobin A1c</td>
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<tr>
<td>HCP</td>
<td>Healthcare professional</td>
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INTRODUCTION

This thesis contributes to the discussion of person-centered approaches in group-based diabetes self-management education and support (DSMES) targeting people with type 2 diabetes mellitus (T2DM). Today, group-based DSMES is widely offered and is a critical element of improving and implementing sustained self-management behavior in the daily lives of people with T2DM. A person-centered approach comprises an essential element in DSMES and has been identified as a crucial concept for good clinical practice. The communication skills of healthcare professionals (HCPs) play a fundamental role in the potential for facilitating effective person-centered DSMES in groups. Currently, most person-centered approaches targeting people with T2DM address communication in individual consultations. However, group-based DSMES is a commonly used approach due to its beneficial components such as, bringing people with T2DM together to share experiences, higher patient satisfaction, improved health outcomes, as well its cost-effectiveness. In group-based DSMES, research has generally focused more on outcomes than on format and content. This thesis contributes to both knowledge about current enablers and barriers to facilitating person-centeredness in group-based DSMES and to the identification of specific professional skills necessary for HCPs to facilitate person-centered DSMES. In particular, the thesis investigates the process of transforming person-centeredness from a theoretical concept into actual implementation in clinical practice. Furthermore, the thesis adds to the ongoing significant discussion about how to best support the development and training of HCPs to effectively facilitate group-based DSEMS that is grounded in a person-centered approach.
CHAPTER 1: BACKGROUND

This chapter presents an overview of the aim of the thesis and the three research studies forming its foundation. Subsequently, the background section describes central elements T2DM, followed by a definition and clarification of concepts closely related to the aim of the thesis.

1.1 Aim of the thesis and research questions

The aim of the thesis is to investigate, develop, and implement approaches supporting HCPs in facilitating group-based, person-centered diabetes self-management education among adults with T2DM in Denmark.

The thesis is based on three studies that aimed to answer the following research questions:

1. What approaches among HCPs’ support or hinder person-centeredness in group-based diabetes self-management education targeting people with T2DM?
2. What approaches support HCPs in facilitating group-based, person-centered diabetes self-management education?
3. How do HCPs implement person-centered approaches into group-based diabetes self-management education?

The following section provides the study background. The biopsychosocial components of T2DM are defined and outlined, followed by clarification of three central concepts: 1) diabetes self-management education and support; 2) a person-centered approach; and 3) professional development to facilitate group-based, person-centered DSMES.

1.2 Managing type 2 diabetes in everyday life

In the 21st century, diabetes has emerged as a major global health problem (1). The current prevalence of diabetes has risen to approximately 415 million people worldwide and is expected to increase 55% by 2040 (1). T2DM accounts for up to 91% of the total population of people with diabetes (1-3). In Denmark, 5.7% of the population is diagnosed with diabetes, and the incidence is growing (3). The annual indirect cost of diabetes to Danish society is currently nearly 31.8 billion Danish kr. (4) and is expected to increase substantially (5).

T2DM is a complex chronic condition characterized by insulin resistance, an inability of the body to use insulin, a hormone produced and secreted by the pancreas. Consequently, pancreatic
β cells react by secreting more insulin, resulting in β-cell exhaustion over time. Eventually, high blood glucose levels (hyperglycemia) occur as β cells lose function. T2DM develops slowly; initial symptoms are mild, and the disease typically goes undiagnosed for years until the first complications occur (6). There is extensive evidence that prolonged untreated hyperglycemia increases the risk of developing diabetes complications that include heart attack, stroke, blindness, kidney failure, vasculopathy leading to lower extremity amputation, vision loss, and nerve damage (6). Therefore, T2DM has profound implications for health and quality of life and is associated with an approximately twofold increase in mortality (7, 8).

The rising burden of diabetes is closely associated with interrelated non-modifiable factors—an aging population, ethnicity, genetics, and urbanization—and modifiable factors, such as unhealthy lifestyles, obesity and overweight due to a high-fat, high-sugar diet, physical inactivity, and smoking (2). Addressing modifiable factors is fundamental to T2DM prevention and treatment, although a singular focus on T2DM as a lifestyle disease ignores non-modifiable risks. Studies have shown that people with T2DM can experience discrimination and prejudice when they are perceived as causing their own health problems and lacking the willpower to adopt healthy lifestyle habits (9-11). This can reinforce the social stigma often experienced by people with T2DM as feelings of shame and blame and lead to low self-esteem and reduced quality of life (10).

Although diabetes is a physiological disease, self-management is largely behavioral and involves many demanding psychological and social changes to which significant barriers exist (12-14). It is estimated that people with chronic conditions and their relatives provide 80-90% of all care. For people with T2DM, adopting and maintaining effective multiple diabetes self-management behaviors in daily life (e.g., following diet and exercise regimens, self-monitoring blood glucose levels, and coping emotionally with the rigors of life with diabetes) is crucial to preventing diabetes complications and improving diabetes outcomes and quality of life (15, 16). However, it is well-established that awareness of the need to and knowledge about how to self-manage effectively are rarely enough to create sustained behavior change (17). Significant barriers to adopting extensive behavioral and psychosocial changes in the complex context of everyday life present substantial challenges for individuals with T2DM (18, 19).

Diabetes self-management comprises many daily tasks and is a lifelong responsibility for individuals living with the condition; many people also have more than one chronic disease,
further complicating self-management (20, 21). Additionally, the prevalence of T2DM is associated with social characteristics and is higher among poorly educated, low income groups and some ethnic minorities (22, 23). The many daily demands of self-management can also result in significant psychological distress among people with T2DM (24). Approximately 18% of individuals with T2DM experience high levels of diabetes distress, defined as significant negative psychological reactions to the demanding activities of self-managing diabetes, which contribute to poor self-management behaviors (24, 25).

### 1.3 Diabetes self-management education and support (DSMES)

#### 1.3.1 DSMES in Denmark

Group-based DSMES is widely offered across Denmark. According to the national disease program targeting type 2 diabetes, patient education should be offered to all newly diagnosed individuals with T2DM (22). Public hospitals, local municipalities, and general practitioners all offer patient education for people with T2DM (23, 26, 27). Although programs across settings frequently overlap, their aims, content, delivery method, and duration are highly dependent on local areas and service providers; no clear overview exists of all programs (22, 27, 28).

In Denmark, the municipalities are primarily responsible for providing DSMES (corresponding to diabetes rehabilitation) to people with newly diagnosed type 2 diabetes. To meet this responsibility, the municipalities have reinforced their general prevention programs, including offering patient education programs targeting T2DM (27). Local municipality interventions are usually provided in groups and often include physical exercise or cooking lessons. However, great variation remains between interventions across local municipalities, which range from disease-specific programs to general patient education in all chronic diseases, such as heart diseases, chronic obstructive lung disease, and cancer. An overview of aim, content, and pedagogical methods in patient education programs of local municipalities is not available (22).

The five Danish regions are responsible for the hospital treatment typically received by people with T2DM who have diabetes complications or a severe need for treatment adjustment (22). Unlike municipalities, hospitals have limited capacity to offer physical training, such as physical exercise or cooking lessons. Nevertheless, hospitals typically offer both individual and group-based disease-specific patient education; program duration varies across hospital settings (22).
Due to their primary contact with individuals with T2DM and their responsibility for treatment during regular consultations, general practice are partially responsible for offering individualized patient education. General practitioners are, in particular, responsible for coordinating the care of many people with T2DM, including ensuring the best and most appropriate treatment (29). To fulfill that obligation, general practitioners must be well informed about available regional and municipal patient education programs. However, navigating the various programs can be difficult because they are organized differently, depending on each region and municipality. Surveys show that 24% of all general practitioners do not refer individuals with T2DM to a patient education program in local municipalities (23).

Thus, group-based DSMES comprises different approaches and methods that vary with the setting and provider (22). In addition, diabetes education programs generally lack a clear, theory-driven curriculum (30). Therefore, the National Board of Health has recently articulated a vision of completing an overview of all available diabetes interventions in Denmark to support the coordination of national, regional, and municipal interventions targeting people with diabetes (27).

1.3.2 Definition and aim of DSMES

DSMES is a critical component of improving a wide range of outcomes among people with T2DM, including increased knowledge and understanding of diabetes, better self-management and empowerment, enhanced psychological adjustment, and improved clinical outcomes (16, 31-36). DSMES aims to facilitate the knowledge, skills, and confidence necessary for the person with T2DM to implement and sustain behaviors needed to self-manage T2DM outside the clinical setting (37, 38). In this thesis, DSMES is defined using the Diabetes UK definition: “a planned and graded programme that is comprehensive in scope, flexible in content, responsive to an individual’s clinical and psychological needs, and adaptable to his or her educational and cultural background” (39, p. 5).

1.3.3 Group-based DSMES

In Denmark, group-based DSMES has existed since 1990 and was initially developed to increase cost effectiveness and reduce hospitalizations (40). During the last ten years and as compared to individual DSMES, group-based DSMES has been widely offered and is increasingly associated with a number of benefits (41); it is more cost-effective and has demonstrated positive impact on clinical, lifestyle, and psychosocial outcomes among people with T2DM (15, 42-48). Group-
based DSMES has the benefit of bringing people with T2DM together to share experiences and learn from each other; it provides an opportunity for peers to both support each other and compare themselves with others in a similar situation (49, 50).

Research has generally focused more on physical outcomes of group-based diabetes programs than on format and content (51, 52). However, one study found that most successful DSMES programs incorporated strategies, such as facilitating behavioral change, problem solving, and goal-setting by group participants with T2DM (53). However, developing a constructive group process among peers requires that HCPs have specific professional communication skills; approaches are needed that focus on biopsychosocial issues, behavior change in group participants and how to most effectively facilitate group processes (54).

### 1.3.4 Policy promotion of group-based DSMES

Over the last 10 years, the perception of group-based diabetes education has been marked by a shift away from traditional approaches that solely focus on transferring information to passive listeners toward self-management approaches promoting greater active involvement and targeting behavior change and self-efficacy, defined here as personal confidence and motivation to self-manage (55, 56). This shift is emphasized by national guidelines in Denmark that recommend considering “‘self-management approaches’ as an integrated part of (or supplement to) the disease-specific patient education in people with type 2 diabetes” (26, p. 41).

However, the Danish National Board of Health characterizes the evidence and outcomes for DSMES as moderate in terms of effects on clinical markers and quality of life (22, 26). In contrast to the UK Board of Health, the Danish Board of Health bases its conclusions exclusively on evidence from randomized controlled trials that specifically address issues related to the effectiveness of a defined medical intervention (57). Consequently, the weak endorsement of DSMES in Danish policy documents functions as a barrier to the delivery of self-management approaches. Their implementation in practice remains challenging, and the main focus is still on HCPs delivering information about diabetes and its complications, medications, diet, and exercise (58-60).

Policies promoting DSMES have been given far greater prominence in other western countries, such as the US, UK, and Australia, where the development of interventions to promote self-management approaches is prioritized (37, 61, 62). In the UK, national authorities acknowledge
that the evidence for self-management support is variable and appears to be relatively weak in terms of some outcomes. However, they point out that this reflects, in part, the challenges of designing, implementing, and measuring interventions, as well as the difficulty of aggregating data of poor quality or from different methodological approaches (61).

Thus, DSMES in Denmark is still in its infancy, and a wide range of initiatives, interventions, and strategies to support self-management in group-based diabetes programs must be developed before implementation in practice is widespread. Nevertheless, a person-centered approach has been on the national policy agenda for the last few years. This political aim has now permeated the regional policy level, strengthening person-centeredness in the healthcare sector (63).

1.4 A person-centered approach

1.4.1 Outcomes of applying a person-centered approach
Over the past decade, policy makers and healthcare leaders have increasingly focused on the need for person-centered care because it is identified as of prime importance to good clinical practice (64). There is emerging evidence that person-centered approaches better meet the needs of individuals with T2DM and result in their enhanced ability to perform self-management (58, 65-67). Furthermore, research has found that person-centeredness leads to more engagement in treatment plans, reducing the use of emergency hospital services, and lead to a more cost-effective healthcare system (58, 68). Last but not least, patients and HCPs who engage in active partnerships have been found to be more satisfied with care (69, 70).

1.4.2 Definitions of person-centeredness in the literature
Despite extensive ongoing research on person-centeredness and its prominent position on the political agenda, there is little clarity about the meaning of the concept (71-74). Reasons include the facts that person-centeredness is neither clearly nor universally defined and that person-centeredness depends on the circumstances and needs of specific individuals in the context of healthcare. However, the lack of a consensus definition may constitute a barrier to implementing a person-centered approach in practice (75). In particular, a clear definition is required to design program for group-based DSMES that are grounded in a person-centered approach (76).

The literature contains many definitions and descriptions of a person-centered approach. The term “person-centered” is often used interchangeably with “patient-centered,” “client-centered,”
and “consumer-centered” (77). The concept has roots in a holistic approach which holds that individuals with T2DM must be viewed as part of a biopsychosocial whole (78). The biopsychosocial model is a conceptual framework emphasizing the contribution of psychological, social, and cultural factors, in combination with biological influences, to disease determinants, symptoms, and treatments (79). The biopsychosocial approach provides a framework for understanding the influence of psychosocial factors on diabetes management.

In a 2012 position statement, the European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA) defined a person-centered approach as “providing care that is respectful of and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions” (80, p. 1364). De Silva viewed person-centered care as also including social elements and defined it as “clarifying patients preferences, values, family situations, social circumstances and lifestyle” (81, p. 6). In addition, person-centered care promotes the ideal of a more democratic patient-provider relationship (82). As a result, key dimensions revealed in the literature and adopted in a UK Health Foundation definition include patient participation, involvement, and collaborative relationships with HCPs (61, 81). Person-centeredness advocates that individuals with T2DM are experts on their lives and in determining what is best for themselves and their families (83). Thus, an important feature of person-centered care is that individuals with T2DM define their needs and problems, as opposed to HCPs taking responsibility for defining problems and providing solutions (61). The communication style of HCPs and their relationships with people with T2DM are key to achieving a person-centered approach that promotes the individual as an active partner in formulating goals of care and solutions (66). In fact, research has found that the quality of communication between people with T2DM and HCPs is associated with patient empowerment and clinical outcomes such as HbA1c (84).

1.4.3 A person-centered approach in group-based DSMES

Most person-centered approaches have been developed to address communication between HCPs and persons with T2DM in the context of individual consultations (85). Mowing towards person-centeredness in group-based DSMES requires that HCPs are responsive to group participants’ individual needs and social circumstances and simultaneously able to guide the group to establish a positive dynamic among peers. Thus, group-based, person-centered DSMES requires an ability to intervene at both the individual and group levels (86, 87).
In this thesis, person-centeredness in group-based DSMES compromises the following sub-components primarily identified in the literature:

- Includes a holistic orientation and biopsychosocial perspective
- Establishes a partnership between group participants and HCPs to clarify individual needs, preferences and values and tailor the educational approach to address them
- Involves group participants and emphasizes participation and collaboration
- Facilitates constructive and productive group processes among peers
- Includes broader social circumstances, resources, and cultural background in the educational approach

The promotion of a person-centered approach in practice requires moving from relying on general idealistic concepts towards using techniques and tools suitable for practical use. A 2011 evidence review concluded that future research should explore how to incorporate the ideals of a person-centered approach in group-based DSMES into practical interventions targeting diverse local contexts (58).

1.5 Development of professional skills

1.5.1 Professional skills necessary to facilitate group-based, person-centered DSMES

Incorporating person-centered approaches in group-based DSMES is extremely challenging because it calls for a cultural change in practice (88). The transformation to person-centeredness has been labeled as a move toward a “new professionalism” emphasizing a holistic and collaborative educational approach designed to remedy an “old professionalism” represented by a traditional paternalistic educational approach (89). HCPs need additional training in appropriate skills to support this shift and to make the relevant changes because person-centeredness is not a compulsory element of current HCP education and training (90).

Facilitating group-based, person-centered DSMES requires HCPs to direct progress, catalyze motivation, and provide the right amount of information at the right time to encourage learning among group members (88, 91). It requires the ability to facilitate the self-management issues faced by individuals, support peer exchange, and use behaviorally based approaches to strengthen group participants’ diabetes care, self-efficacy, problem-solving skills, and efforts to set and follow through on specific goals (92).
Ample evidence exists that techniques and tools can support person-centeredness in group-based DSMES. In particular, techniques based on motivational interviewing (93, 94) and tools based on cognitive behavioral theory, including social-environmental support, highly structured action plans, and a variety of decision aids (95, 96) have been found to be useful in promoting and facilitating self-management behaviors (97). Models based on self-efficacy theory can build confidence and motivation to take action by focusing on action and goal attainment (58, 98). Tools to address readiness to change and tailor interventions towards readiness and individual differences have also been found to be effective (58, 61). Eventually, group facilitation skills may significantly influence group participants’ outcomes, particularly by guiding the group toward a supportive and collaborative atmosphere (85, 99). However, techniques and tools are not enough, as the UK Health Foundation states: “Clinicians will not use the tools just because they are available. They need to understand them and buy into the theory behind them” (61, p. 49).

1.5.2 Implementation of professional skills in practice

A fundamental barrier to applying person-centeredness in group-based DSMES is the fact that many HCPs are in favor of person-centeredness in principle but find its implementation in practice difficult for a range of reasons (58). This includes the limited training of HCPs (100), which has proven to be extremely complex. Training HCPs requires replacing old patterns and habits with new ones that are both professionally embedded and organizationally sensitive, and person-centered approaches involve translating “idealistic ideas” to practices in a range of settings and for a variety of HCPs and people with T2DM (89).

Currently, HCPs’ skills at delivering person-centered education are evaluated by experts who rate their professional communication skills using expert-designed coding scales (101-104). An expert-dominated approach to assessment can foster tension and create conflict; HCPs may interpret it as judgmental and confrontational and respond in guarded, defensive, and superficial ways, limiting their acquisition of new skills and behaviors (39, 59, 105, 106). Assessments in which experts dominate and provide recommendations and advice on specific actions are morally directed and can impair, rather than improve, person-centered professional skills (18, 107).

To promote professional autonomy and engagement, it is essential to support HCPs in identifying their needs and challenges related to facilitating group-based, person-centered
DSMES (106, 108). Translating group-based, person-centered approaches into professional skills requires learner-centered approaches, including nonjudgmental methods such as robust self-reflection tools (39, 109). These approaches enable HCPs to reflect on their skills and encourage self-assessment and problem solving as they seek to improve their professional skills (59). However, the UK Health Foundation stresses that: “…there is still a long way to go before we understand the education and support necessary to optimize clinicians’ attitudes, skills and behaviours towards self-management” (58, p. vi). With this in mind, it is evident that there is an important gap in the evidence about developing best strategies for training HCPs in implementing person-centeredness approaches in group-based DSMES (58, 110).

1.6 Summary of existing knowledge and important research gaps

Self-management is a lifelong responsibility for the individual living with T2DM. Living with the condition is complex and involves many biopsychosocial and behavioral impacts that are particularly demanding in the context of daily life. Group-based DSMES is widely offered and is critical to diabetes self-management. However, effective group-based DSMES requires HCPs to have specific skills focusing on behavior change and facilitation of group processes. Currently, DSME in Denmark is still in its infancy, and a wide range of initiatives, interventions, and strategies to support self-management in group-based DSMES must be developed.

A person-centered approach is pivotal to enhancing the ability of people with T2DM to perform self-management and is essential when determining the educational approach of group-based DSMES, particularly when defining, developing, and documenting new evidence-based concepts. The translation of a person-centered approach into practice requires moving from general theoretical concepts to using concrete techniques in practical interventions that target diverse local contexts. However, most person-centered approaches have been developed for individual consultations.

Moving towards person-centeredness in group-based DSMES requires that HCPs become adept at addressing group participants’ individual needs and social circumstances and simultaneously facilitating positive group dynamics among peers. Incorporating person-centered approaches in group-based DSMES is an extremely challenging aim. A fundamental barrier to achieving this aim is the fact that many HCPs agree with person-centeredness in principle but find its implementation in practice challenging. They need support and training to acquire the skills to
make the required changes. There is an important gap in the evidence pertaining to developing the best strategies for training HCPs to implement person-centered approaches in group-based DSMES.
CHAPTER 2: METHODS

The purpose of this chapter is to outline the study design and address methodological considerations. The overall study design, theoretical framework, and methodological considerations related to the three research studies will be discussed, followed by a deeper discussion of the designs of each of the studies. Finally, data analysis and the dual position of the researcher in an intervention study will be discussed.

2.1 Study design

The overall study design was guided by action research, which is a practice-oriented and user-centered approach allowing practitioners to collaborate and affect the process of creating research knowledge (111). Action research is suited to identifying problems in clinical practice and then helping to develop potential solutions to improve practice (111). Thus, action research has the dual aim of seeking to create changes in practice (action) and produce new knowledge (research) (111). It focuses on supporting practitioners in engaging with research and subsequently developing and implementing activities in practice that are founded in a collaborative approach (111, 112). Action research is well suited to examining the concept of person-centeredness, in which participation and involvement are key principles.

The action research process is cyclic, typically moving iteratively through investigating, action planning, and evaluating and planning new interventions (113). Using the action research perspective, we explored, developed, and tested several different context-specific, group-based, person-centered approaches in collaboration with HCPs. Accordingly, the overall aim of the thesis was organized into three research phases in which insights from each study informed the following ones: an investigating phase (study 1), an action-planning phase (study 2), and a piloting phase (study 3). The action research process is depicted in Figure 1. Five educational settings in the Capital Region of Denmark participated in the study, and data consisted of ethnographic fieldwork, interviews and focus groups with group participants and HCPs, and professional development workshops with HCPs.
2.2 Theoretical and analytical framework

The theoretical and analytical framework underlying the thesis consists of the Health Education Juggler model and techniques inspired by the use of motivational interviewing (MI) in groups. The model and techniques identify HCP skills required to facilitate a person-centered approach.

2.2.1 The Health Education Juggler

The Health Education Juggler model comprises four equally important educator roles: Embracer, Facilitator, Translator, and Initiator (99). The Embracer is empathetic and intuitive. The Facilitator enables reflections on limitations and challenges in everyday life. The Translator conveys disease-specific knowledge in an understandable and implementable way. The Initiator creates motivation for behavior change (99). Juggling is a metaphor for HCPs who must simultaneously manage, master, and switch between these roles when facilitating group-based, person-centered DSMES (99).

2.2.2 Facilitation techniques inspired by motivational interviewing in groups

The use of MI in groups draws on Rogerian client-centered therapy (114) and has roots in behavioral therapy; a process-oriented view of group development has been shown to be effective in supporting self-efficacy for change (106, 115). Techniques inspired by the use of MI in groups enable HCPs to better understand and support group participants’ personal reasons for behavior change and to facilitate discussions within the group.
The use of MI in groups has been demonstrated to be applicable to facilitating group-based, person-centered diabetes education (106). Several MI techniques can be used in groups. Asking questions by minimizing statements and avoiding argument, promoting unconditional acceptance by demonstrating non-judgmental curiosity, and rolling with resistance are concrete techniques that can facilitate group-based, person-centered DSMES.

2.3 Approaches to facilitating group-based, person-centered DSMES

As part of the intervention, approaches supporting HCPs to facilitating group-based, person-centered DSMES were developed and tested. The approaches consisted of techniques and tools emphasizing a holistic, behavioral, and collaborative educational approach targeting group-based DSMES, as opposed to traditional expert-driven approaches dominated by information delivery and making choices on behalf of individuals with T2DM.

The approaches targeted two different levels of promoting person-centeredness in group-based DSMES: 1) techniques and tools useful for HCPs to apply in group-based DSMES and 2) techniques and tools supporting professional development of HCPs in order to facilitate person-centeredness in group-based DSMES:

1) Techniques in group-based DSMES consisted of: exercises and dialog tools, such as reflection sheets and questionnaires with quotations or open-ended questions to prompt reflections and group dialog about psychosocial and behavioral aspects of diabetes; emphasizing group discussions about motivation for behavior change; and tailoring educational material to the needs of both the individual and the group. All approaches included open-ended questions with time for individual reflections to identify and find solutions to group participants’ individual challenges and needs, followed by questions to generalize the dialog to the whole group (Appendix 9.2 gives an overview of approaches developed).

Different theoretical models inspired the development of approaches to implement person-centeredness in group-based DSMES, such as: 1) readiness assessment similar to a traffic light assessment (not ready to change = red, ambivalence to change = yellow, or ready to change = green) to tailor interventions to different stages of readiness to change and establish readiness for change for all (116). Assessing readiness to change is defined as the degree to
which individuals are motivated to take action in behavioral change (116), and 2) emotional-behavioral strategies (117) exemplified by questionnaires with quotations to initially identify counterproductive thinking and behavior followed by questions to initiate peer dialog to ideate appropriate solutions to individual needs.

2) Tools supporting HCPs’ promotion of person-centeredness in group-based DSMES, such as skills and facilitation techniques to communicate with group participants at different stages of readiness to change and techniques to guide the group in establishing a positive group climate. These techniques and tools were guided by MI-inspired facilitation techniques in groups (118) and the social cognitive model (119). Furthermore techniques and tools were developed to support HCPs in acknowledging diverse psychosocial and behavioral obstacles experienced by individuals with T2DM and awareness of including these issues into the education. Derived from empirical interview and observation data in this study, these included identifying obstacles to self-management e.g., too many competing daily demands, comorbidity, learned helplessness, poor social support, unrealistic plans for action, depression, crises or grief, and social stigma.

All approaches were iteratively developed in collaboration with HCPs throughout the intervention, drawing on insights from the ethnographic fieldwork in which barriers to facilitating group-based, person-centered DSMES in current clinical practice were identified.

2.4 Data collection

Data were collected from March 2015 to November 2016. The following section describes the data content and data collection methods and illustrates the collaborative process with the five study settings.

2.4.1 Recruitment of HCPs and settings

Eight settings in the greater area of Copenhagen were initially contacted in pursuit of variation in geographical areas of the region, size and frequency of group-based diabetes programs, and municipalities (120). Five settings (one hospital and four municipalities) agreed to participate. All HCPs indicated that they wanted to participate because they found the study relevant and were interested in further developing their patient education practices. Participation required: 1) permission to conduct ethnographic fieldwork within their practice; 2) attendance at three professional workshops at Steno Diabetes Center Copenhagen; 3) engaging in discussions to
customize group-based, person-centered approaches to match local circumstances, existing skills, and perceived needs before pilot testing; and 4) the willingness to pilot test group-based, person-centered approaches in practice.

HCPs received informational letters describing the study aim, process, their active role in the workshops, and intended outcomes (Appendix 9.4). HCPs from the five settings were selected, using purposeful sampling (120) to obtain participants who varied in terms of gender, profession, level of postgraduate training, and experience.

2.4.2 Data content and data collection

Data were collected through three sub-studies, each of which was followed by an integrated analysis of new and previously collected data to develop and plan the next phase. The intervention process is illustrated in Figure 2.

Figure 2. Intervention

2.4.3 Study 1: Investigating

In the first study phase, ethnographic fieldwork was initially conducted in five patient education programs. Fieldwork findings informed subsequent semi-structured interviews and focus groups with group participants and HCPs. The aim was to investigate and provide insights about
approaches among HCPs’ that supported or hindered person-centeredness in group-based DSMES.

Data in study 1 consisted of field notes, program documents such as program schedules and content, Power Point presentations, and interviews with HCPs and group participants (Table 1). Insights from the investigation phase enabled the development and planning of subsequent workshops with HCPs.

**Table 1.** Demographic characteristics of interviewed group participants

<table>
<thead>
<tr>
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<th>N</th>
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</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
</tr>
<tr>
<td>Diabetes duration</td>
<td></td>
</tr>
<tr>
<td>&lt; 4 months</td>
<td>17</td>
</tr>
<tr>
<td>3 years</td>
<td>9</td>
</tr>
<tr>
<td>10-30 years</td>
<td>3</td>
</tr>
<tr>
<td>Medication</td>
<td></td>
</tr>
<tr>
<td>Insulin</td>
<td>9</td>
</tr>
<tr>
<td>Tablets</td>
<td>20</td>
</tr>
<tr>
<td>Occupational status</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>20</td>
</tr>
<tr>
<td>Employed</td>
<td>9</td>
</tr>
</tbody>
</table>
2.4.4 Study 2: Action planning

In the second study phase, two three-hour interactive professional development workshops were conducted with HCPs (Table 2). The first and second workshops enabled pilot testing of new approaches and were followed by a final workshop to discuss and evaluate the approaches. We used the term workshop to emphasize the user-driven and collaborative research approach.

Table 2. Characteristics of HCPs participating in workshops

<table>
<thead>
<tr>
<th>Background</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered nurse</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Dietician</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of postgraduate training</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year of education at university level</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2 weeks educational course at diploma level</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2–3 days patient education course</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>No training in patient education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

The workshops and collaboration with HCPs were planned and conducted by the PhD student in close collaboration with a senior supervising researcher experienced in user-driven innovation. In addition, a research team consisting of a researcher, a research assistant, and a student assistant participated in the workshops. The researchers’ role was to facilitate workshop processes to investigate HCPs’ experience, preferences, and needs for developing professional skills and present and discuss potential group-based, person-centered approaches. All workshop processes had two purposes: to collect data and to explore the potential of the new approaches to inspire and assist HCPs to facilitate group-based, person-centered diabetes education. Workshops included a variety of methods, such as reflection sheets, case scenarios, dialog tools, and video clips, to promote dialog and facilitate the process without controlling the content. These methods allowed HCPs to generate their own ideas and discuss them. Insights from the workshops enabled the researchers to refine the prototypes. Figure 3 depicts the process of collaborating with the study settings, and Figure 4 depicts the workshop processes in more detail.
Figure 3. Collaborating with study settings

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test
- Chose not to participate in workshop 3: HCPs found group-based, person-centered methods inapplicable as the program was driven by a person-centered concept

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test

- Field observations
- Workshops 1 & 2
- Individual meeting with HCPs
- Chose not to participate in the pilot-test and workshop 3: Organizational changes (relocation & employment changes)

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test

- Field observations
- Workshop 1, 2 & 3
- Individual meetings with HCPs
- Pilot test
- Chose not to participate in the pilot test: Organizational changes (employment changes)
### Workshop 1: Investigating

**Aim:** To stimulate HCPs self-reflections about their professional skills by identifying their strengths and areas in need

#### Content

1. Reflection-sheets to openly brainstorm about HCPs currently professional skills.
2. A short presentation to make common ground of the skills needed to facilitate group-based, person-centered DSMES. This led to initiate HCPs self-reflections of skills and challenges using the tool to self-assess professional skills (For tool to self-assess professional skills see article II for a more detailed description).
3. HCPs discussed in small groups how they managed their strengths and challenges in practice.
4. HCPs were divided into small groups asked to reflect on two different cases describing common challenges observed in practice encouraged to use the Health Education Juggler as analytical tool.
5. Finally, questionnaires were distributed among HCPs exploring e.g. their readiness to change educational behavior (Appendix 9.3).

#### Data
- Notes on self-reflection sheets
- Flip overs from group discussions
- Notes conducted by the research team
- Workshop transcripts
- Questionnaires

### Workshop 2: Developing

**Aim:** To ideate and discuss group-based, person-centered approaches

#### Content

1. HCPs were shortly presented for the preliminary and intermediate findings from workshop 1 and the HCPs asked questions and gave feedback.
2. Prototypes were presented through four inspirational tracks. HCPs were asked to elaborate on emerging ideas, along with issues and questions to be resolved before actual implementation:
   a. Tool to assess group participants’ readiness to change and how to facilitate not ready, ambivalent, and ready-to-change (Appendix 9.2.D).
   c. Tool to facilitate reflection and group dialog about motivation for behavior change using value clarification techniques (Appendix 9.2.F).
   d. Tool to facilitate reflection and dialog about situations that trigger old habits and how to get back on track (Appendix 9.2.E).

#### Data
- Notes on self-reflection sheets
- Flip overs from group discussions
- Notes conducted by the research team
- Workshop transcripts

### Workshop 3: Evaluating/redesigning

**Aim:** To evaluate the tested approaches and HCPs learning outcomes

#### Content

1. HCPs were presented shortly for insights and preliminary findings from the pilot test, and how it raised new questions and appropriate approaches.
2. Four inspirational tracks as in workshop 2 to evaluate the pilot test (although the approaches were adjusted several times since the first presentation).
3. The whole process was closed using refection-sheets and group discussions.

#### Data
- Notes on self-reflection sheets
- Flip overs from group discussions
- Notes conducted by the research team
- Workshop transcripts
2.4.5 Study 3: Piloting and redesign

In the third study phase, individual meetings were held with HCPs from all settings before they piloted appropriate techniques and tools. A third and final workshop aimed to redesign the pilottested techniques and tools and evaluate HCPs’ learning outcomes.

Individual meetings in each setting

Between workshops 2 and 3, individual meetings with HCPs were conducted. All HCPs from the five settings participated in individual meetings with the researcher before pilot testing. The aim of the individual meetings was to plan the pilot test. Before individual meetings, the researcher refined the prototypes to customize them to local circumstances and HCP needs and existing skills. During the meetings, the researcher presented the prototypes and HCPs provided their final feedback. After individual meetings, the researcher further refined the techniques and tools to increase their fit and appropriateness for each setting.

Pilot testing

The aim of the pilot test was to explore how HCPs incorporated new approaches. Field observations were conducted in three settings with 25 group participants and five HCPs. Two settings chose not to participate due to employment and organizational changes; HCPs at one setting found the new approaches inapplicable (Figure 3).

Data consisted of notes from individual meetings, email messages from HCPs, and field notes from pilot testing (Figure 5). The analysis of the piloting phase led to the final workshop (Figure 2).
Figure 5. Data collection process
2.5 Data analysis

Data from the ethnographic fieldwork, interviews, and workshops were analyzed continuously to select and develop approaches for the next step of data collection. Data from interview and focus group transcripts, field notes, and notes from HCPs and the research team were sorted into rough thematic groups shortly after they were collected. Systematic text condensation was used to analyze data in articles 1 and 3 (121), whereas hermeneutic analysis (122) was used to analyze data in article 2.

2.5.1 Articles 1 and 3

Data were initially analyzed using systematic text condensation, an inductive method conducted in four steps (121). Data were first read through to obtain a total impression of the whole. Based on this impression, preliminary meaning units were created as a starting point for organizing data into meaning units. Meaning units were sorted and subthemes were identified. Finally, subthemes were condensed into main themes.

2.5.2 Article 2

Data were analyzed hermeneutically to acknowledge the interconnected nature of analysis and theory generation in the interpretation of data (122). All data were first analyzed inductively to identify meaning units in the text (121). Data were recoded and iteratively analyzed and interpreted using the Health Education Juggler model and techniques from the use of MI in groups as the theoretical and interpretative theoretical framework. The analysis focused on HCPs’ teaching and conversational approaches, as well as the dialog and interaction between HCPs and patient education group participants. Field notes and quotes from interviews were compared to structure the data within the framework of the four Health Education Juggler roles. Finally, workshop data were analyzed to compare observations with HCPs’ self-assessments. All findings were categorized into two themes representing skills at which HCPs felt most capable and those that they found most challenging, which were divided into four subthemes related to the four Health Education Juggler roles. As a final analytical step, central concepts from the use of MI in groups were adapted to provide a more in-depth analysis and interpretation of the subthemes.
2.6 The dual position of the researcher

In action research, the researcher has a dual and multifaceted role, acting as both a developer and facilitator of an intervention and a researcher who collects, interprets, and analyzes qualitative data (123). Facilitating the processes required being flexible in scope and able to deviate from the original plan. Conversely, it was also pivotal to maintain some distance to keep HCPs on track in terms of the workshop purpose and the creation of knowledge to inform actions in practice (124).

A researcher who engages as a developer and facilitator of an intervention can never be completely free of preconceptions. Malterud describes how preconceptions can affect the validity of findings and offers some suggestions for dealing with them (125). The researcher’s background, preconceptions, and pre-understandings will always influence the research process and interpretation of data (125). It is important to accept this influence and be reflexive and explicit about how it can influence the study design (125).

My pre-understandings in this project are highly influenced by the partners in the project, as well as by my research stay at the Behaviour Change Institute at Dalhousie University in Halifax, Canada. Health Promotion Research, Steno Diabetes Center Copenhagen has developed a set of five health promotion principles grounded in a humanistic and social research approach (126). The five principles derive from widespread critiques of a moralizing and expert-driven paradigm that focuses exclusively on avoiding the risk of disease and death. They are: 1) a broad and positive health concept; 2) participation and involvement; 3) action and action competence; 4) a settings perspective: and 5) equity in health. The aim of the Department of Nursing at Metropolitan University College is to contribute to the evidence base for incorporating the person-centered approach into nursing practice and to improve the quality of education at Metropolitan University College. Finally, the Behaviour Change Institute provides training and support for HCPs to develop competencies in establishing change-based relationships, promoting readiness to change, behavior modification, and psychosocial determinants of behavior. These perspectives significantly affected the choice of methods, theories, and approaches (127).

My preconceptions are also heavily influenced by my professional background as a registered nurse and my masters degree in communication and psychology. My former work as a nurse has provided me with in-depth knowledge of both the healthcare system and HCPs’ communication skills and an understanding that patients usually experience illness as more than a body-based
disruption in daily life. However, HCPs primarily draw on a biomedical paradigm when they communicate and attempt to collaborate with patients. The challenges inherent in maintaining a holistic orientation that includes biopsychosocial aspects in the patient-provider relationship have informed my professional development and been a driver of my career.

Furthermore, when I began my PhD thesis, I had already experience with DSMES due to my former work as a research assistant in Diabetes Management Research at Steno Diabetes Center Copenhagen. This included advanced knowledge of the literature within the field and participation in and observations of other diabetes education settings, followed by interviews with individuals with T2DM. Due to my experience and knowledge, I had acquired some preconceptions, including that HCPs frequently followed a structured curriculum using didactic methods such as slide presentations and instruction via lectures. In addition, I believed that HCPs had not received sufficient training in facilitating active group dialog and rarely made room within group education for participants to reflect on personal issues and initiate motivation for behavior change individually as well as among peers in the group.

To challenge my preconceptions, I used different strategies to achieve open-minded and reflexive exploration of the programs during the field observations. Initially, a lecturer from Metropolitan University College who was inexperienced in this field participated in some of the observations. I was very diligent about not discussing my preconceptions with her in advance, and, after the observations, I asked her to write down some field notes before discussing the observations with her. Secondly, I brought a list of questions and perspectives to consider while observing the settings such as: “Can I in detail describe what happened from the beginning to the end of program?”, “Who interacted with whom and when and what did they talk about?”, and “Try to describe the surroundings and sensations,” During the observation, I wrote down key words and phrases by hand in order to preserve accuracy and detailed descriptions.

Factors that mitigated the impact of my preconceptions on the research process and findings include the fact that the workshops were established in close collaboration with a supervisor who is very experienced in user-driven innovation. Her perspective repeatedly reminded me of the importance of maintaining a user-centered approach that included HCPs’ experience and ideas and of remaining nonjudgmental during all discussions. Secondly, a research assistant also participated in some of the field observations and interviews, and the participation of the research team during the workshops subsequently enabled thorough discussion of the findings. Finally, all
data analyses were discussed with the team of supervisors with backgrounds in anthropology, public health, and medicine, which provided a rich variety of perspectives on data interpretation and increased the trustworthiness of the findings.

Another significant factor that effected my preconceptions and my critical reflexivity throughout the research process was the user-driven and collaborative research approach. In this approach, the interconnections between the three studies were continuously developed. Thus, I continuously adjusted my insights, using the findings from previous studies to inform the following one. Furthermore, the active engagement of HCPs in the process, in which their input, feedback, and evaluation were included in the intermediate analysis, continually forced me to maintain an open mind about improvements and to see other aspects of the empirical data and analysis.

2.7 Ethical considerations

The PhD project was declared to the Danish Data Protection Agency and they approved the study (ID.nr. 2014-41-3444). The study was performed according to the Declaration of Helsinki (128). All interviewed individuals with T2DM signed informed consent forms and were informed about the study verbally and in writing.
CHAPTER 3: FINDINGS

This chapter presents a resume of the three articles included in the thesis. In addition, short descriptions are provided of how interconnections between the three studies allowed insights from each to inform the following ones.

3.1 Article I

An ethnographic investigation of healthcare providers’ approaches to facilitating person-centredness in group-based diabetes education

<table>
<thead>
<tr>
<th>AIM</th>
<th>DATA</th>
<th>FINDINGS</th>
</tr>
</thead>
</table>
| Investigating approaches among HCPs that support or hinder person-centeredness in group-based DSMES targeting people with T2DM | • Field notes  
• Interview transcript  
• Program documents | The empirical findings were grouped into two overall categories:  
• Approaches hindering person-centeredness  
• Approaches supporting person-centeredness |

3.1.1 Approaches hindering person-centeredness

Teacher-centeredness undermined person-centeredness

HCPs typically followed a structured curriculum with predefined content that was primarily based on their assumptions about and experience of group participants’ learning needs, rather than on participants’ actual preferences and needs. Prepared didactic presentations including disease-, diet-, and exercise-specific content were the most frequent teaching method. The general tendency in observed patient education programs was to attempt to transfer a considerable amount of knowledge in a short time which occasionally resulted in information overload.

A biomedical approach

The programs focused primarily on biomedical knowledge, illustrating an underlying assumption that teaching biomedical content supports self-management skills. Psychosocial aspects of life with T2DM were rarely addressed. The content and communication about diabetes
complications illustrated a second underlying assumption: that fear can motivate change in individuals with T2DM.

**One question, one answer**

Some HCPs attempted to actively engage group participants in dialog and participation; however, they primarily did so by asking close-ended questions with a single correct answer. Dialog tools such as the Diabetes Conversation Map™, which contains visual depictions of facts and information, enabled group participants to easily understand different aspects of diabetes. Although HCPs attempted to promote dialog by asking questions about pictures on the map, they still controlled the content. As one HCP stated during an interview, “I’m asking questions instead of giving the answers and then I correct them along the way if it is wrong. Then I can control what we are talking about.” Consequently, in this dialog, the HCPs ignored wrong answers and acknowledged and rewarded group participants who answered correctly. In addition, HCPs ignored group participants who made ironic or sarcastic comments about recommended health behaviors including ignoring group participants with suboptimal health behaviors.

**A moralizing way of teaching**

An underlying assumption in the teacher-centered approach was that T2DM is a disease in which affected individuals are primarily responsible for their health outcomes. Consequently, group participants tended to be judged for causing their own health problems through a lack of willpower. Program content related to self-control was intended to modify behavior by, for example, using the slogan “due care and diligence” from a famous Danish shipping magnate, and a practical exercise in mindful eating with the aim of minimizing the consumption of unhealthy food. However, a moralizing way of teaching may be experienced by group participants as judgmental. It also carries a risk of creating learning barriers and psychological resistance or defensiveness, which are counterproductive when individuals with T2DM do not follow recommendations or do the opposite of recommended behavior.

**3.1.2 Approaches supporting person-centeredness**

**Empathy enhanced the relationship**

Some HCPs expressed the importance of including spontaneous input from group participants to promote group dialog. They expressed a growing consciousness of a positive relationship with
the group that arose from establishing initial rapport as a way to achieve person-centeredness in the group setting.

*Facilitating instead of teaching*

Person-centeredness in groups was supported when HCPs incorporated facilitation skills to manage the process without controlling the content. In particular, asking broad, open-ended questions enabled group participants to clarify individual needs, preferences and values. Applying concrete and practical techniques was useful to initiate self-reflection and group dialog about self-identified challenges in managing T2DM in everyday life. One tool engendered self-reflection on personal values that showed potential to help the individual navigate life with T2DM. Subsequently sharing these reflections within the group enriched both speaker and listeners.

These findings derived from the investigating phase led to the second phase of the study. Findings from study one were incorporated into study two to develop context-specific and appropriate approaches. HCPs were actively involved in the research process to meet the objective of user involvement in all steps of the process.
3.2 Article II

The potential of a self-assessment tool to identify healthcare professionals’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education

<table>
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<tr>
<th>AIM</th>
<th>DATA</th>
<th>FINDINGS</th>
</tr>
</thead>
</table>
| Exploring the potential of a self-assessment tool to identify HCPs’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered DSMES | • Field notes  
• Interview transcript  
• Program documents  
• One professional development workshop | The empirical findings were grouped into two overall categories:  
• Professional skills that HCPs felt most capable of  
• Professional skills that were most challenging |

A learner-centered approach was chosen to support self-reflection and encourage independent problem solving. This led to the development of a self-reflection tool to enable HCPs to identify their strengths and areas in need of development to effectively facilitate group-based, person-centered DSMES. The tool to self-assess professional skills was based on the Health Education Juggler model and techniques from the use of MI in groups, which delineated the essential elements of facilitating high quality group-based, person-centered DSMES.

The Health Education Juggler model is a key theoretical framework for defining, developing, and analyzing skills required to perform group-based, person-centered DSMES. It is an empirical theoretical model describing the ideal roles in performing group-based, person-centered DSMES (99). MI in groups comprises a set of practical techniques to operationalize the facilitation of group-based, person-centered DSMES (106, 129). Thus, the two frameworks are complementary: the Health Education Juggler is the overall theoretical concept, and approaches inspired by the use of MI in groups offer concrete and concise communication techniques for facilitating and operationalizing non-directive counseling and supporting person-centeredness (Figure 6 depicts the tool).
3.2.1 Professional skills that HCPs were most capable of

In the workshop, HCP self-assessed professional skills of the Translator and Embracer roles as those they felt the most capable of. The observations validated HCPs’ self-assessments about their skills in these roles, and interviews provided additional confirmation.

In the Translator role, HCPs had current advanced theoretical and disease-specific knowledge, and some were aware of the importance of using lay language instead of technical terms. Moreover, in the dissemination of diabetes-specific knowledge, a number of HCPs used a variety of interactive and experienced-based learning techniques that were readily accessible to group participants.
In the Embracer role, HCPs were particularly skilled in building initial rapport to create a safe group climate. They did so by having a relaxed and welcoming attitude and by noticing and responding to verbal and non-verbal cues within the group. One HCP focused on connecting and guiding the group, which further helped to create a safe environment for exchanging experiences.

### 3.2.2 Professional skills that HCPs found most challenging

During workshops, HCPs self-assessed the professional skills of the Facilitator and Initiator roles as most challenging. Observations also revealed that HCPs were challenged by these skills, a finding that was confirmed in interviews.

In the Facilitator role, HCPs found it difficult to facilitate the process without restricting the content that was covered. Moving from the role of an Embracer who displays unconditional acceptance of group participants to the role of a Facilitator who has the courage to control, direct, and redirect the group in a timely way was particularly challenging. In particular, HCPs were uncertain about guiding the group back on track or moving it toward a new focus when the discussion took an unproductive turn. Consequently, engagement in the group decreased and some group participants became resistant as unproductive processes continued.

In the Initiator role, HCPs found it difficult to initiate motivation for behavior change. Following a structured curriculum with predefined content made it difficult to tailor the content to group participants’ experiences, needs, and values. HCPs often allocated time in the beginning of the program to explore group participants’ experiences and needs but then proceeded with predefined content, expecting to fulfill individual needs. Open-ended questions were rarely used to encourage reflection. When HCPs incorporated reflection tools, the process enabled group participants to voice concerns and problems but typically ended without their acquisition of new strategies or solutions.

The findings derived from investigating and exploring HCPs’ self-assessments of professional skills led to the further development of new approaches supporting the skills they found most challenging, followed by a pilot test of the approaches.
3.3 Article III
Facilitation of group-based, person-centered diabetes self-management education: Healthcare professionals’ implementation of new approaches

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| Exploring how HCPs implement person-centered approaches into group-based DSMES after professional development | ● Field notes  
● Interview transcript  
● Program documents  
● Three professional development workshop  
● Pilot test | The empirical findings were grouped into three overall categories:  
● Increased awareness but implementation challenges remain  
● Readiness to adopt change but unable to facilitate and create clarity  
● Content and process tailored to the needs of group participants |

The goal of study 3 was to understand how HCPs moved from an understanding of new approaches to facilitating DSMES to implementing these approaches in practice.

3.3.1 Increased awareness but implementation challenges remain
HCPs from three settings were engaged in the process. They considered themselves to be highly ready to change and agreed with the theoretical principles of facilitating group-based, person-centered DSMES. Moreover, they easily identified common challenges described in typical practice scenarios and were highly engaged in developing tools and techniques to enable the practical application of person-centeredness in group-based DSMES.

Participating in the professional development process promoted an increased awareness of the importance of person-centered DSMES, but some inconsistency emerged when it came to actual implementation. In particular, moving from being the expert who defined the content and provided recommendations to also including person-centered skills was challenging, which made it important for one setting to select approaches that could be easily applied in existing structured curricula informed by a clinical agenda. HCPs in the setting used techniques to elicit group participants’ preferences but did not subsequently align the content or curriculum to group participant preferences and needs. The HCPs eventually realized that their program was not driven by person-centeredness, and they found that the methods were not applicable to their practice. This finding illustrates the highly variable nature of organizational capability for
implementing person-centered approaches. Two other settings chose not to pilot test the new approaches due to organizational changes such as relocation or employee turnover (Figure 3).

3.3.2 Readiness to adopt change but unable to facilitate and create clarity

HCPs from one setting were ready and motivated to learn new approaches and apply them in practice. They had an increased focus on using participatory learning techniques to actively involve the whole group. In particular, they used open-ended questions to initiate reflections and exchange experience among group participants. However, in the effort to avoid the biomedical model, they moved so far away from the expert role that they did not take control of the process when needed. For example, when the HCPs planned exercises including personal reflection, there was often a lack of transparency about the process. They frequently jumped into activities without explaining the aim, and the structure consequently became undefined and unproductive for the group participants.

Moreover, in the effort to abandon the role as an expert who defined the content, there was a tendency for HCPs in the setting to adopt a narrow focus on goal-oriented concepts. Tools and techniques focusing on goal setting and action planning were introduced to group participants who were not yet ready for change. Consequently, the HCPs created goals for group participants.

3.3.3 Content and process tailored to the needs of group participants

In one setting, a HCP worked from the individual agendas of group participants and tailored the content to their expectations, needs, and concerns. The HCP mastered the complexity of balancing content and process skills and used didactic theory to expand and consolidate discussions directed towards group participants’ perceived needs.

The HCP was particularly concerned about participatory learning strategies and group processes, in terms of creating a positive group climate and maintaining a focus on exploring important issues while also moving the process forward. Initially, the HCP used process skills including facilitation strategies such as controlling, directing, and redirecting the group in a timely way to both accelerate and slow down the pace of the discussions. The HCP used also group discussion methods to help group participants interact with each other while they explored concerns in an empathic and collaborative way. Finally, the HCP intervened both on a group and individual level by making space for self-reflection and group discussion of issues. Overall, the HCP structured the program around both educational objectives and individual needs.
CHAPTER 4: DISCUSSION

This chapter will begin with a summary of key findings, followed by a discussion of findings in light of existing literature. Subsequently, theoretical, empirical, and methodological considerations will be discussed.

4.1 Summary of key findings

This thesis investigated, developed, and piloted approaches supporting HCPs in facilitating group-based, person-centered DSMES. Inspired by action research and in collaboration with HCPs, several context-specific, group-based, person-centered approaches were explored, developed, and tested in clinical practice.

4.1.1 Barriers to facilitating person-centeredness in group-based DSMES

In the investigating phase, group-based, person-centered DSMES programs were found to generally represent a teacher-centered approach. Teacher-centeredness involved many didactic presentations focusing on biomedical issues and an emphasis on a moralizing way of teaching. Furthermore, HCPs’ efforts to promote dialog and participation were framed primarily as questions with a single correct answer. Conversely, HCPs also consciously attempted to establish initial rapport and empathy by including affective appraisals, which were found to be a way of achieving person-centeredness. Person-centeredness was also supported when HCPs facilitated processes to initiate self-reflections followed by a group dialog.

4.1.2 A learner-centered approach to developing professional skills

In the action-planning phase, a self-reflection tool was developed. The tool enabled HCPs to self-assess their strengths and areas in need of development to effectively facilitate group-based, person-centered DSMES. HCPs self-assessment of professional skills was the same as observed in practice. Thus, the self-assessment tool can serve as a starting point for the flexible and stepwise customization of professional development programs to match HCPs’ perceived needs, existing skills, and local circumstances.

4.1.3 Implementing person-centered approaches in group-based DSMES

In the pilot-testing phase, HCPs were found to implement group-based, person-centered approaches quite differently. In general, they enthusiastically supported the concept and were ready to change, but actual implementation was challenging. Barriers to implementation included
organizational resources and existing frameworks in which HCPs were experts. However, some HCPs tended to swing to the opposite extreme, resulting in unstructured processes and an inability to direct group discussions when needed. One setting mastered the complexity of balancing process and content, promoting group participants’ needs, reflections, and discussions in groups. These results indicate that uptake of this model of care currently is dependent on individual characteristics of the HCP and local circumstances.

4.2 Findings in light of existing literature

4.2.1 Barriers to facilitating person-centeredness in group-based DSMES

There is ample evidence that HCPs in patient education programs primarily teach about what they perceive individuals with T2DM need to change (18). However, this has been found to be ineffective in terms of encouraging, enabling, and supporting people with type 2 diabetes (130, 131). This is consistent with the findings in article I, in which existing group-based, person-centered DSMES programs generally comprised teacher-centered approaches with many didactic PowerPoint presentations containing biomedical information.

The findings in article I about barriers to promoting group-based person-centered DSMES were similar to those of a study by Rogers et al., in which inhibiting factors included: 1) failure of HCPs to incorporate expressed needs; 2) interpretation of self-management as compliance with medical instructions; and 3) the organization of settings (132). These findings are also supported by the findings in article III that key barriers to implementing group-based, person-centered DSMES were existing frameworks in which HCPs were experts and a lack of organizational resources. A newly published study by Dowell et al. also identified challenges in HCPs’ communication skills in diabetes care; patient education was often driven by biomedical explanations that were out of the experiential context of people with T2DM, and HCPs spent most of their time repeating information that was not necessarily relevant to group participants’ needs (133)

Previous research has shown that the biomedical model has a deep hold on HCPs (59, 88, 134). The biomedical approach derives from the historical model of acute care that is characterized by a hierarchical provider-patient relationship. In this model, HCPs provide information about acute medical conditions and focus on diagnosis and treatment (135). However, in the last few decades, dramatic increases in the prevalence of chronic conditions such as T2DM, reflecting a
shift from infectious to non-communicable causes of disease, have prompted a reconfiguration of the patient-provider relationship to a more collaborative partnership, as suggested by the Chronic Care Model (136). Collaboration is essential because people with T2DM, not HCPs, make self-management decisions in daily life. The history of the differences between the traditional and person-centered approaches highlights the fact that many HCPs agree with the concept of person-centered care, but they often perceive it through the lens of a biomedical culture that is so embedded in their consciousness that they are unaware of its existence (108).

Article I also identified that the teacher-centered approach included educational content based on the assumption that the goal of DSMES is to increase group participants’ self-control and willpower so they can better manage their lifestyle behaviors. However, participants often experienced this approach as a moralizing and judgmental perspective that gave rise to feelings of guilt and shame about being irresponsible. This finding is confirmed in a study by Guassora et al., in which patients’ experiences of shame commonly occurred when they perceived that their conditions were not well-managed or they had not lived up to expected health standards (137). The psychological impacts of feeling like a failure and assuming the blame for causing one’s condition reinforce low self-esteem and may create hopelessness, which can be a barrier to optimal self-care (10, 138). Despite the best efforts of people with T2DM, the disease is unpredictable and difficult to manage. Many factors beyond the control of affected individuals influence their condition (138). A Diabetes Australia position statement and a task force, consisting of representatives from the American Diabetes Association, specifies that HCPs’ indirect communication about their attitudes can reinforce harmful beliefs about people with diabetes that are manifested by language used in the healthcare setting (138, 139).

4.2.2 A learner-centered approach to developing professional skills

Just as person-centeredness has been found to be pivotal to enhancing the ability of affected individuals to perform self-management, so too is learner-centeredness pivotal to training and enhancing HCPs’ skills during professional development. The similarities between the person-centered method and the learner-centered approach in professional development are crucial. In article II, we argued that fostering cultural change among HCPs has been previously described as a monumental challenge (140). Optimizing group-based, person-centered DSMES requires training HCPs in a diverse set of professional skills (141). However, most HCPs lack access to
continuous expert consultation and supervision, a factor that has been identified as an essential issue in diabetes care (109, 142).

Article II describes a self-reflection tool based on the Health Education Juggler model and techniques from the use of MI in groups; its aim is to enable HCPs to self-assess their strengths and areas in need of development to effectively facilitate group-based, person-centered DSMES. Conscious and critical self-reflection in continuing education is essential to learning and developing professional skills (109, 143, 144). In fact, in research exploring how HCPs can undertake quality improvement in health care, training approaches that are more learner-centered and problem-centered have the potential to enhance teaching and learning (145). Furthermore, self-assessments have been found to have a great impact on the process of self-reflection and have been associated with more positive and meaningful learning experiences (146).

However, self-assessments alone are insufficient to change practice patterns. Empowering HCPs to master the professional skills required to facilitate group-based, person-centered DSMES may be a long process, because it requires knowledge about theoretical paradigms, conscious self-reflection, participation in learner-centered and practice-oriented training programs, and, importantly, continuous practice to maintain skills over time (106, 141, 147). In particular, interactive skills-training workshops, such as role play-based training that emphasizes practical skills, has been found to improve professional skills in comparison to theory-heavy presentations (148). However, no intervention will succeed in isolation. A bundle of interventions is required, including supporting HCPs and their organizations (140).

It is crucial to emphasize that tools developed to facilitate participatory patient education cannot promote a person-centered approach in DSMES when they are used in isolation. Rather, the potential for promoting person-centeredness depends on the communication perspective and facilitation skills of the HCP (149). This is consistent with a review by Fisher et al. (150) that describes two crucial steps HCPs must complete before tools to enhance and encourage improvements in self-management are brought into play. First, they must be supported in shifting their mindset from a traditional hierarchical approach to a collaborative and empathic approach and must move from a traditional educational approach of delivering information toward listening to address motivational needs and obstacles among people with T2DM. The second and equally fundamental step is to support HCPs in applying empathic relationship-building strategies (144).
In contrast, the many currently available tools for facilitating behavior change do not necessarily support HCPs in preparing for a person-centered clinical practice; nor do the tools support relationship building. Thus, according to Fisher et al., an error occurs when HCPs rush into utilizing specific tools to enhance and encourage improvements in self-management (150). In article III, findings revealed that HCPs rushed into using tools focusing on goal-setting and action-planning techniques; the result was that some group participants seemed forced into setting goals they were not ready to take on. As one HCP stated:

He wasn’t really interested in changing anything. I really thought it was difficult not to put the words into his mouth. I asked him what he wanted to change or simply just try out the next week. He just said, I can try if you want. Then I said you shouldn’t do it for me; it’s for your own sake. After the program he walked directly into another room and said, now they [HCPs] want me to lose weight.

In a similar vein, a recent study found that, after implementing shared decision making in the UK National Health Service, many HCPs believe that shared decision-making processes cannot occur without the use of tools (140). However, the authors write that a fundamental learning from the study was that “skills trump tools, and attitudes trump skills” (p. 2). Thus, initially developing HCPs’ professional communication skills is fundamental, followed by drawing on evidence-based tools and techniques as supportive strategies when appropriate (140, 141). This is consistent with the findings in article I that some HCPs consciously attempted to establish initial rapport and empathy with affective appraisals. Rapport and empathy were found to be a gateway to achieving person-centeredness in group-based DSMES.

4.2.3 Implementing person-centered approaches in group-based DSMES

We found that HCPs implemented new approaches quite differently after participating in professional development. In general, there was a broad consensus among all HCPs in support of the concept of group-based, person-centeredness, and HCPs were ready to change. However, actual implementation in practice was challenging. The involvement of all HCPs in the professional development process promoted an increased awareness of the concept of person-centeredness. Awareness and increased understanding of what the concept entails have been identified as the first crucial steps in the successful improvement of professional skills (151). Despite the fact that awareness about the concept of person-centeredness generally increased, a
few HCPs realized later in the professional development process that the approach was not applicable to their practice; as one HCP stated in an e-mail message:

…we have different views on the program. We think of our program as information and sharing of knowledge but your view is more on the changing process… Therefore, it is difficult for us to implement what we have learned from you.

Previous research has found that HCPs often have negative attitudes towards a person-centered concept and underestimate patients’ interest in collaborative treatment planning, both of which have found to be barriers to the adoption of new approaches based on a person-centered concept (152, 153).

We found that HCPs tended to behave in one of two ways after participating in professional development about group-based, person-centered DSMES. Either they assumed the role of expert, defining the content in a fixed curriculum, or, in the effort to abandon unwanted paternalism, tended to swing so far away from the expert role that they were unable to structure the process leaving the group participants uncertain about the aim. This is consistent with the argument of Cribb and Entwistle that current perceptions about shared-decision approaches tend to be interpreted too narrowly in application (56). This results in a frequent misconception of the HCP role at the extremes of either paternalism or consumerism (56). They argue for a broader middle path between paternalistic and consumerist models that seeks to work with the autonomy and responsibility of both HCP and patient (56). However, Cribb and Entwistle also question whether it is reasonable to expect all HCPs to have the knowledge and skills to navigate this comprehensive middle path and whether it represents merely an ideal that is difficult to implement in practice because it is so far removed from current clinical norms (56).

4.2.4 Person-centeredness as a collaboration process

Article I highlighted the fact that HCPs often attempted to create dialog and participation through questions to which they expected group participants to provide a single correct answer. Although HCPs asked questions, their close-ended nature allowed HCPs to control the agenda based on their assumptions and experience. In contrast, after the professional development process, article III presented the finding that some HCPs tended to swing to the opposite role, which resulted in unstructured processes and an inability to direct group discussions when needed.
Participation and involvement have been found to be crucial concepts in health promotion (126), highlighting the fact that the content is not necessarily determined solely by HCPs or by group participants. Participation and involvement are more about collaboration between HCPs and group participants and are first developed when HCPs take responsibility for facilitating the negotiation of a shared agenda. Thus, participation and involvement are based on the willingness and ability of HCPs to be both responsive and respectful to group participants’ needs, preferences, and values in addition to their own professional knowledge (154).

The implication of this collaborative approach, in which control is equitably distributed between the HCP and group participants, sharply contrasts with the traditional patient-provider relationship (155). Facilitating person-centered approaches in group-based DSMES involves working in partnership with group participants. This requires that HCPs work increasingly in the moment using a more flexible curriculum with shared ownership. The definition of collaboration corresponds to the finding in article III that one HCP mastered the complexity of balancing content and process skills. Content skills include an ability to consolidate discussions and didactic theory towards group participants’ learning needs, whereas process skills include facilitation strategies to accelerate and slow down the pace of group discussions.

A balance between process and content skills in group-based, person-centered DSMES is consistent with a study investigating the ratio of educator talk in group-based patient education as a quality indicator (156). Positive participant-reported outcomes, such as learning from each other and a feeling of safety and freedom, were associated with low educator talk ratios, whereas group participants appreciated high talk ratios when HCPs presented knowledge they perceived as essential and meaningful to everyday life (156). Nevertheless, group participants do not always have a clear and fixed idea of their preferences and needs. Participation in DSMES varies with individuals’ motivation, capacity, and potential (126). Thus, to address group participants’ preferences and needs, the role of the HCP may be to present a range of options, enabling group participants to select issues relevant for them to address and discuss within the group.

4.3 Theoretical and empirical considerations

4.3.1 Pros and cons of the Health Education Juggler model
The Health Education Juggler comprehensively describes the varied HCP roles in participatory, group-based patient education. The model was primarily developed to promote and support
dialogue-based group education for people with chronic illness (99). It builds on the basic idea that dialog and participation in patient education lead to improved self-management skills and health-promoting behavior in people with chronic illness (149). However, the model has a minimal focus on crucial aspects such as encouraging and supporting behavior change and incorporating biopsychosocial issues into educational content. Consequently, the Health Education Juggler model was extended in this study by incorporating facilitation techniques inspired by the use of MI in groups, such as open-ended questioning, prompting reflections for individuals and among peers, and exploring motivations for behavior change. These facilitation techniques support group participants in making their own decisions about how to self-manage T2DM in the complex context of daily life (94).

At the heart of the Health Education Juggler model, lies the juggler metaphor, which illustrates the importance of simultaneously managing, mastering, and switching between different educator roles to successfully provide participatory, group-based DSMES. It is vital that the HCP is able to switch smoothly between different content and process themes and operate with knowledge, experience, and pedagogical competencies to meet the varying needs of the group participants (99). According to Fisher et al., empathic relationship building comes before applying tools and techniques to support self-management activities in the educational process (150). In light of this perspective, it may be questionable whether the four roles are of equal importance since it can be argued that the empathic educator (Embracer) comes before the inspiring educator (Initiator), the managing educator (Facilitator), and the health professional educator (Translator). Initiating motivation for behavior change, in which goal setting and action planning are key concepts, follows after empathic relationship building aiming to engage participants in the group process.

With this in mind, incorporating techniques to build and reinforce relationships before switching into action and behavior change techniques extended each role within the Health Education Juggler model. The Initiator role was expanded to include exploring group participants’ readiness to change and using active learning techniques such as open-ended questions to elicit reflections among group participants before moving into behavior change strategies. The Translator role included developing an initial understanding of group participants’ questions, reflections, and discussions to elicit individual needs, preferences, and values and subsequently connecting the educational content to these needs.
In article III, we presented the finding that HCPs seemed highly skilled in the Embracer role. However, the majority of HCPs appeared to be unable to move from the Embracer, who displays unconditional regard, towards the Facilitator, who enables the process by having the courage to control, direct, and redirect the group in a timely way. In particular, when HCPs were faced with unproductive group conversations, they were unable to change topics when needed by moving the group towards a new focus that met the current interest of the whole group. Techniques inspired by the use of MI in groups provided practical facilitation skills to address this challenge and equipped HCPs with strategies to manage the group process to establish peer support among group participants. However, the successful acquisition, development, and application of these skills require continuous expert consultation and interactive skills-training workshops.

4.3.2 Pros and cons of facilitation techniques inspired by the use of MI in groups

The Health Education Juggler is a theoretical model that describes roles required to provide person-centered DSMES. The extension of the model to include facilitation techniques inspired by the use of MI in groups added a set of practical techniques supporting HCPs in facilitating group-based, person-centered DSMES.

MI in groups is a person-centered, guided approach aiming to increase internal motivation through identifying and discovering ambivalence towards behavior change (106). Drawing on MI facilitation techniques to create a discussion about behavior change by eliciting group participants’ ambivalence about modifying lifestyle behaviors can be criticized as contradictory to the person-centered philosophy. It can prompt HCPs to use a persuasive approach to direct the group toward considering the benefits of behavior change, even when it conflicts with group participants’ current readiness to change and educational needs. Thus, discovering ambivalence can potentially lead HCPs to become too directive when facilitating group-based, person-centered DSMES.

However, MI in groups also draws on aspects from several other theories, such as the person-centered therapeutic approach of Carl Rogers, social and cognitive psychology, and behavioral therapy, all of which align with the definition of the person-centered concept used in this thesis (106). Thus, MI-inspired techniques are very useful for HCPs as they seek to build a strong, collaborative relationship with group participants and rely on empathy, acceptance and compassion to gradually reduce resistance to change (106).
Additionally, MI in groups is a method that contrasts substantially with traditional, hierarchical frameworks in which HCPs are experts who disseminate content. MI in groups relies on the view of group participants, rather than that of the HCP. Instead, the role of the HCP is to work in partnership with group participants to evoke readiness to change and guide the conversation towards preferences, needs, and values. Emphasis is on understanding group participants’ needs and their long-term interests to empower positive and lasting behavior change.

Techniques from the use of MI in groups were applied in the Health Education Juggler model to improve relationship building and facilitation of group processes (94). There is an ongoing discussion on the effectiveness of MI in diabetes care; a recent article reported evidence for its effectiveness, emphasizing the appropriateness of MI as a diabetes treatment method (157). However, studies have primarily reported positive outcomes of MI conducted in individual consultations. In general, few studies have been conducted on the use of MI in groups (106), and most of these have addressed substance use (158). However, recent results indicate that MI is also effective in group-based diabetes care (159).

4.3.3 Is the person-centered concept necessarily best practice?

In this thesis, a person-centered approach is positioned as best practice in group-based DSMES. As all other theoretical approaches, the person-centered approach is based on assumptions that can be questioned. Annemarie Mol’s theory of the logic of choice and the logic of care can be used to criticize the person-centered approach (160). Mol perceives the logic of choice as a normative approach in which equality, autonomy, and the ability to choose are deeply embedded and considered as best clinical practice. Thus, the logic of choice considers people as isolated individuals, whereas the logic of care views them as social individuals connected to broader social circumstances and resources (160). The person-centered concept is, to some extent, comparable to the logic of choice. Both can be criticized to be an individualized approach.

The logic of choice contains an individualized approach in which “you [the person with T2DM] must learn to become someone different” (154, p.60), with which Mol strongly disagrees. She argues that people with diabetes are not necessarily able to make the best choice (160). This is a common challenge in diabetes care, which was addressed earlier in the thesis when discussing the association between T2DM and social characteristics and its higher prevalence among poorly educated, low income groups and some ethnic minorities (20, 21). Consequently, the logic of choice can result in some individuals with T2DM being left to their own choices without any
substantial professional guidance; self-management becomes a private matter without HCP interference. The person with T2DM is left with the final choice and is solely responsible if anything goes wrong (160). According to Mol, this can be problematic, particularly because peoples’ preferences do not necessarily reflect the best choice in terms of their diabetes.

Mol’s concept of the logic of choice is useful to interpret some of the empirical findings in this thesis, particularly, as described in article III, when HCPs tended to move so far away from the expert role that taking control of the process when needed was challenging. As the HCPs stated: “We tried to throw away the structure, we were just floating with the dialog and then followed where it went” (article III, pp.7-8). HCPs’ well-intentioned efforts to abandon a previous paternalistic approach tended to avoid a shared partnership in which mutual respect exists for the expert knowledge of HCPs and the life experience of individuals with T2DM.

In contrast to the logic of choice, the logic of care refers to HCPs as knowledgeable, accurate, and skillful—but also attentive, inventive, persistent, and forgiving (160). The logic of care presents the principle of “doctoring,” defined as a democratization of expertise. The HCP with expert knowledge should not control the agenda, nor should the person with T2DM be left on his or her own. It is desirable to strive instead for a kind of shared doctoring, where there is a mutual respect for both areas of expertise (160). Shared doctoring is consistent with the concept presented earlier of participation and involvement in health promotion, defined as being responsive and respectful to group participants’ needs, preference, and values in conjunction with HCP professional knowledge.

In light of Mols’ concepts of logic of choice and logic of care, the person-centered concept in group-based DSMES adjusted for, as much as possible, the pitfalls of logic of choice. Thus, approaches were developed to tailor interventions to different stages of readiness to change. In particular, concrete facilitation techniques to communicate with group participants, who were not ready to change, were highly characterized by being attentive, persistent, and forgiving which are key terms in logic of care. Moreover, the group concept included components of logic of care, such as considering group participants as social individuals with an emphasis on broader social circumstances and resources. As a result, approaches were developed focusing on both individuals with T2DM and the whole group, but methods were also developed to consider and apply broader social circumstances in the education.
4.3.4 Is it sensible to facilitate a person-centered approach in group-based DSMES?

Facilitating person-centeredness in group-based DSMES can be challenging for HCPs because it requires the ability to intervene at both the individual and group levels. Thus, it can be difficult to find the time and opportunity to be both supportive of individuals and inclusive of all group participants. The person-centered approach requires that the HCP has an understanding of how best to plan the program to address the needs, preferences, and values of each participant and simultaneously guide the group to establish a positive dynamic among peers (54, 161). Thus, facilitating person-centeredness can be more complicated in a group context than in individual consultations because HCPs must spread their focus among group participants with different needs.

Group participants are often quite diverse in terms of their readiness and reasons to change. Readiness to change is useful for HCPs to initially assess and then tailor interventions towards readiness and individual differences. The different stages of readiness to change (not, maybe, or ready to change) among group participants give HCPs an idea of how to support and collaborate with each group participant (162). However, slipping into the mode of merely conducting individual interactions in DSMES, rather than continually attending to group processes, is not the aim of group-based, person-centered DSMES (163). Conversely, eliciting individual preferences, needs, and values might serve to emphasize the group’s heterogeneity rather than its universality, which is believed to be an important factor in dynamic group processes (118). However, this concern can be addressed if HCPs continually foster respect for the different experiences and perspectives of group participants because getting ideas, insights, and information from others can motivate and inspire the whole group.

Although it is common for group participants to have differing concerns, it is also common for themes to emerge that are important to the majority of individuals with T2DM. There is an inevitable tension between maintaining an individualized, person-centered focus and simultaneously ensuring that group discussions are relevant for everyone (163). Findings in article III showed that facilitating person-centeredness in group-based DSMES was feasible in one setting. As one HCP stated:

One participant had an issue that I’m quite sure everyone in the group had in mind. Then we talked a lot about that issue, because it’s something about how to stick to new habits, right. It’s quite difficult for everyone. I actually thought we talked about it in a way
without blame and shame; we talked about it in a constructive manner. Have anyone in the group tried it and has any ideas or solutions?

One model for resolving these competing demands in group-based DSMES is to use open-ended questions to initiate and allow time for individual reflection, followed by open-ended questions intended to generalize the discussion to the whole group. Successful adaptation of person-centeredness in group-based DSMES requires attention to the interplay between complex individual change processes and group dynamics. The HCP structured the program to meet both educational objectives and individual needs and used participatory learning strategies to intervene simultaneously on group and individual levels by making space for self-reflection and group discussion of issues. As the HCP stated:

It’s (...) important that they get the chance to articulate by themselves what is motivation. Then give them a chance to mirror their different ideas. They don’t achieve that from a lecture about motivation. They have to be actively involved.

Although uptake of the person-centered model in group-based DSMES was feasible in current clinical practice, it depended on local circumstances and HCPs’ professional skills, experiences, and levels of postgraduate training. Thus, implementation of the person-centered concept in group-based DSMES remained relatively rare among the HCPs included in this study.

4.5 Methodological considerations

4.5.1 Strengths and limitations of the study design

The action research approach is designed to be a participatory process. In this study, this was promoted through a comprehensive and contextualized understanding of each observed setting, followed by an active involvement of HCPs from those settings in the research process. The participatory process increased HCPs interest in the study and stimulated an initial readiness and willingness to incorporate new educational approaches.

Conversely, HCPs in some settings perceived the participatory process as too time-consuming. This led to the development and adjustment of some methods to make them easily applicable with minimal practice changes. Some approaches were even avoided altogether to avoid disruptions in HCPs’ daily work. Similarly, some practical reasons for nonparticipation, such as organizational and job changes, revealed a lack of time and personal energy to continue in the
project. In these cases, it was difficult to implement change, as reported in article III. Thus, the action research process was not entirely smooth. A few HCPs expressed conflicting views about how to promote high-quality group-based DSMES, which gave rise to some tension in the group. A few HCPs encountered some resistance towards the new approaches as the process moved forward, due to the fact that the person-centered approaches caused some disruptions in normal working patterns and required some redefinition of existing ways of promoting DSMES (112).

However, as a researcher in a participatory research approach, it was not always easy to balance the overall aim of the study with HCPs’ diverse and changing needs arising from their shifting environments. In particular, over-involvement of HCPs may have led to an adjustment of the objective of the project, whereas focusing solely on the thesis aim could have generated inappropriate or irrelevant solutions for changing practice. To address this challenge, the initial investigation phase enhanced the development of more appropriate and relevant strategies supporting HCPs in facilitating group-based, person-centered DSMES. In addition, in a participatory process of close collaboration with HCPs from each setting, we introduced and developed alternative as well as concrete, realistic, and appropriate approaches to meet their varying professional skills and complex contexts.

However, Kemmis, McTaggert, and Nixon (164) point out that an action research process should only be conducted in settings where there is a chance that the new approaches will be successful. This raises the question of whether it was appropriate to continue collaborating with one setting in which the HCPs eventually found that the group-based, person-centered methods were irrelevant due to existing framework inherent in a paternalistic model. On the other hand, the knowledge derived from the investigating phase clarified issues and provided insight that was invaluable to the effort to develop, customize, and implement methods relevant for each setting.

Although participatory strategies were used in our study primarily to change practice, it could have been beneficial to provide additional interventions at the level of HCPs. In particular, evidence suggests that changing professional skills requires systematic training that includes ample time to rehearse and reiterate skills, mediated by supervisors who are able to facilitate experiential learning (91). Detailed and descriptive video feedback could have been beneficial to developing professional skills; when it supports learning by experimentation that is facilitated in an active small group environment, video feedback has been shown to strengthen peer support and mutual learning (91). However, this study had limitations related to time. It was designed
and planned to occur over a relatively short period of time for logistical reasons, despite the fact that evidence highlights the importance of a more flexible and incremental approach used within a longitudinal design. In addition, the design of professional development programs should allow ample time for robust communication, increasing complexity, and adjustment and adaptation to meet HCPs’ needs and preferences.

The professional development conducted in this study emphasized personal agency, primarily using HCPs as change agents, and focused less on how organizational and structural factors influence the application of new approaches in practice. Nevertheless, a lack of organizational support was a fundamental cause of the inability to implement new approaches despite the fact that all HCPs reported being highly ready to change. Including organizational and structural factors in change implementation strategies was found to be critically important and requires support at all levels, e.g., a supportive organizational culture and increased leadership support (165).

4.5.3 Internal and external validity

Internal validity is concerned with whether the study answered the research questions and the appropriateness of the methods for answering them, whereas external validity is concerned with the contexts in which the findings can be applied (125).

**Internal validity**

This study investigated, developed, and tested approaches supporting HCPs in facilitating group-based, person-centered DSMES among adults with T2DM in Denmark. To investigate enablers of and barriers to HCPs’ facilitation of person-centered approaches in group-based DSMES in current clinical practice, ethnographic fieldwork was initially conducted. This has been found to be a suitable method for investigating social interactions between people in their physical, material, and institutional surroundings (122). Ethnographic fieldwork made it possible to enter the “black box” of HCPs’ practices and observe them from inside. It was crucial to achieving a comprehensive and contextualized understanding of HCPs’ practices.

To develop approaches supporting HCPs in facilitating group-based, person-centered DSMES, professional development workshops were subsequently conducted to engage HCPs in the development process. HCPs’ participation and involvement were fundamental to engaging them as change agents for applying the approaches in their own practices. Additionally, HCPs’
feedback, critques, and perspectives during the action-planning phase were invaluable to developing appropriate approaches. To explore how HCPs integrated person-centered approaches in group-based DSMES, we later conducted individual meetings with them at each setting, followed by ethnographic fieldwork to pilot test the approaches.

In the action-planning phase, data were continually analyzed and interpreted in relation to planning and organizing the next step of the process. These findings were presented to the HCPs; thus, they took part in the ongoing validation of the data. In the action-planning phase, we also collaborated closely with HCPs in designing concrete, context-specific techniques and tools to enable practical application of person-centered DSMES. The collaboration with HCPs led to richer and more nuanced empirical data. However, in addition to including HCPs in the action-planning phase, it could have also been relevant to involve individuals with T2DM. A potential goal for a workshop with people with T2DM would have been to ensure that the person-centered methods were relevant and appropriate for meeting their different preferences, needs, and values related to self-managing T2DM in their daily lives.

It can be questioned whether an appropriate balance between the different action research phases was achieved. The investigating phase that explored enablers and barriers in current clinical practice was time-consuming, requiring a major commitment of time and generating a large proportion of the data. Nevertheless, the combination of observation and interviews in multiple settings during the investigation phase led to richer and more nuanced empirical data. The analysis of detailed field notes informed interviews, and the researchers’ interpretations were confirmed and compared to those of participants in the interviews, including group participants and HCPs with varying backgrounds, years of experience, and levels of continuing education. This use of field notes and interview transcripts served as a balance between participants’ voices and researchers’ interpretations (127). Further strengths of the investigation phase included observations of HCPs from five different settings who had different educational backgrounds, views on how DSMES should be conducted, and levels of experience.

**External validity**

Transferability of knowledge from one setting to another is highly dependent on similarities and differences between contexts (122). The five settings included in the study are potentially representative of other group-based DSMES in Denmark in scope and content. Consequently, the main results of enablers and barriers of HCPs’ facilitation of person-centered approaches in
group-based DSMES presented in article I may be transferable to other hospitals and municipalities in Denmark that are substantially similar.

The self-assessment tool presented in article II is generally transferable to competence development programs targeting development of professional skills in group-based, person-centered DSMES. The self-assessment tool gives HCPs a general theoretical understanding of how group-based, person-centered DSMES can be facilitated in relation to the four Health Education Juggler roles. In addition, self-assessment promotes self-reflection and awareness of professional skills that HCPs need to develop, and it offers a general opportunity for HCPs to identify their needs related to developing professional skills. This has found to promote professional autonomy and engagement, enabling HCPs to reflect on their professional skills, and it encourages self-assessment and self-problem solving. However, it can be questioned whether it is appropriate to self-assess either most skilled and challenged Health Education roles. In particular, the two polarities may not represent different entities and can potentially be a too narrow categorization as some HCPs may consider themselves skilled in one role while at the same time considering that particular role as most challenging.

Identifying how HCPs implement the person-centered concept in group-based DSMES presented in article III are relevant in the organization of systematic training of HCPs in professional development programs. It provides supervisors in professional development programs to consider possible obstacles and then structuring stepwise curricula incorporating increasing complexity directed towards HCPs existing skills and needs. In particular, it can encourage more realistic expectations of HCPs skills after participating in professional development. Furthermore, it highlights the fact that changing professional skills requires systematic and comprehensive training to support HCPs in implementing the person-centered concept in group-based DSMES.
CHAPTER 5: CONCLUSION

This chapter synthesizes the main findings of the entire thesis related to the overall research question.

The thesis showed that HCPs included in this study supported the concept of person-centeredness in group-based DSMES. However, person-centeredness conflicted with HCPs usual practice that often tended to be teacher-centered. Yet many HCPs have minimal support for developing person-centered communication skills including lack of continuous expert consultation and supervision. Moving from teacher-centeredness toward person-centeredness requires HCPs to shift to the mindset that is the foundation of a person-centered approach in group-based DSMES. HCPs’ awareness and increased understanding of what the concept entails are the first crucial steps in the successful implementation of improved professional skills.

Organizational structures and norms also hinder person-centeredness in group-based DSMES. Promoting group-based, person-centered DSMES is complex and requires interventions at the organizational level, such as fostering culture change and increased leadership support, as well as a focus on systematic professional development of HCPs skills that includes ample time to rehearse and reiterate skills, mediated by supervisors who are able to facilitate experimental learning.

Tools and techniques to perform group-based, person-centered DSMES are not sufficient to facilitate person-centeredness when they are used in isolation. Developing HCPs’ professional communication skills and fundamental mindset based on a person-centered approach is crucial and must be accomplished before bringing specific techniques and tools into play.

Professional development programs result in a range of changed behaviors among HCPs, but the delivery of person-centered, group-based patient education is a rare outcome; person-centeredness remains a theoretical concept in many healthcare settings. The findings suggest that the uptake of the person-centered model of care is currently dependent on local circumstances and HCPs’ professional individual skills, experiences, and levels of postgraduate training.

To the best of my knowledge, the self-assessment tool is the first model to conceptualize the general components of facilitating high-quality group-based, person-centered DSMES. Self-assessments of professional skills have the potential to contribute to self-reflection and
encourage problem solving. Thus, self-assessments can serve as a first step in planning and customization of professional development programs based on self-assessed needs and existing skills.
CHAPTER 6: FUTURE PERSPECTIVES

This final chapter of the thesis considers implications for future research, and practice and policy.

6.1 Implications for research

The findings in this thesis led to a number of ideas for future research. The thesis emphasized personal agency, primarily using HCPs as change agents, and focused less on organizational and structural factors influencing the application of new approaches in practice. Nevertheless, a key finding is that lack of organizational resources was a fundamental cause of the inability to implement new approaches, even though all HCPs reported being highly ready to change. A bundle of complex, sequenced, and multifaceted interventions are required to support both HCPs as change agents and the organization in moving towards group-based, person-centered DSMES. Future research should explore how to use a whole system approach to implement group-based, person-centered DSMES.

In relation to the person-centered approach, it would have been beneficial to both engage HCPs and to collaborate with and provide additional interactive workshops for individuals with T2DM. Involving group participants and allowing them to affect the research process of creating and designing appropriate practical approaches for facilitating group-based, person-centered DSMES would have added a valuable perspective. For example, collaboration with individuals with T2DM would have created an opportunity to develop approaches that are gender sensitive or better support people with T2DM who have low health literacy, lower educational levels, or socioeconomic challenges.

Self-assessment has the potential to contribute to professional development and should be further explored. HCPs’ professional skills at facilitating group-based, person-centered DSMES have been found to have a significant effect on the extent to which group participants feel engaged and supported. This is an area that needs further exploration. This study also demonstrates that HCP self-assessments are consistent with practice observations. Further research is needed to identify the ways in which self-assessments can complement or replace the expert-designed coding scales currently used to rate HCPs’ communication skills.
After HCPs self-identified professional development needs using the self-assessment tool, further training and supervision are needed to support and develop person-centered professional skills. However, knowledge about the best strategies to support HCPs in optimizing person-centered communication skills is still limited, as is knowledge how such strategies could be implemented in practice (61). Future research should explore learner-centered approaches to further support HCPs in developing and implementing in practice the skills needed to facilitate group-based, person-centered DSMES.

Future research should also consider how to operationalize, disseminate, and assess competency criteria for HCPs; in particular, more detailed descriptions and mapping of professional skills are needed in complex concepts such as HCPs’ facilitation of group-based, person-centered DSMES (166). Rigorous evaluation of professional development programs and a dissemination of HCPs’ learning outcomes from such programs would add important evidence to the literature. Structured measurements that identify people with T2DM needs and capture their perceptions and experiences with health care services are increasingly used to provide direct feedback in pursuit of person-centered care. In particular, quantitative patient-reported outcome measures (PROM) and patient-reported experience measures (PREM) have been shown to be effective quality measures (167). While PROM focus on patients’ perceptions of their health status and health-related quality of life, PREM assess patients’ perceptions of care they have received and focus on the aspects of care that matter to them. In other areas, these measures are increasingly used to as a balance for HCPs’ perceptions of the care they provide and, in particular, to enhance the quality of person-centered care (168). However, further investigation is needed to identify solutions that promote person-centeredness and the best ways of including PROM and PREM in group-based, person-centered DSMES.

6.2 Implications for practice and policy
There is a pressing need to bridge the gap between best clinical evidence and current practice; person-centeredness remains an unmet ideal in many healthcare contexts because of existing organizational structures, organizational norms, and lack of ongoing and comprehensive professional development and supervision of HCPs. If person-centered methods in practice are to be a reality, a need exists for a complex whole-system approach that fully supports change at the levels of systems, organizations, and individual HCPs. In short, a change toward a person-centered practice does not happen independent of organizational and leadership support.
Lack of a clear consensus about the person-centered approach is a significant barrier to incorporating it when choosing, planning, and implementing an educational approach in group-based DSMES (169). A theoretical clarification of Danish national guidelines and policy documents would enable clinical settings to design a program for group-based DSMES that is grounded in the person-centered approach (170). Thus, a clear theoretical definition of the concept is necessary for operationalizing and measuring person-centeredness in group-based DSMES (70).

This thesis identified barriers to promoting group-based, person-centered DSMES in current clinical practice before and after HCPs participated in professional development workshops. The findings could be used by experts in professional development programs to identify potential learning obstacles and structure stepwise curricula incorporating training techniques directed toward existing skills.

This thesis investigated how to support HCPs in facilitating group-based, person-centered methods in DSMES. Initially, old patterns and habits must be replaced with new patterns and habits that are both individually embedded and organizationally relevant. Some HCPs must first shift their fundamental mindset from a teacher-centered approach that relies on hierarchical and traditional information delivery methods toward a person-centered approach that embraces paying attention to learning obstacles and addressing motivational, psychosocial, and behavioral needs expressed by people with T2DM. However, most importantly, professional development must be developed and customized in a flexible and stepwise manner to match HCPs’ perceived needs, existing skills, and local circumstances.

Previously, person-centeredness has been viewed as primarily concerned with promoting dialog and participation (171). Participation and involvement are important in the person-centered concept but more is needed. Participation and involvement are concerned with negotiating and collaborating on a shared agenda, and a necessary first step occurs when HCPs take responsibility for collaborating with group participants by incorporating their needs, preferences into patient education. However, establishing a collaborative partnership in group-based setting does not per se represent person-centered DSMES. Future professional development programs could be provided in two steps. The initial focus must be to inspire and motivate HCPs and organizations to shift to the mindset that is the foundation of a person-centered approach, followed by the development of professional skills that focus on building empathic relationships.
with group participants. The second step is to develop and expand HCPs’ group facilitation skills to also include strategies that deliberately elicit group participants’ needs, preferences, and values to motivate behavior change and that allow HCPs to balance the needs of individuals with the needs of the group.
7. SUMMARY

7.1 English summary

BACKGROUND
For individuals living with type 2 diabetes, managing their condition is a complex and lifelong responsibility with many biopsychosocial and behavioral impacts on daily life. Diabetes education is widely offered and is a critical component of self-management. A person-centered approach is pivotal to enhancing the ability of individuals with type 2 diabetes to perform self-management. Nevertheless, the concept remains challenging to implement in practice because programs often have a fixed curriculum dominated by information delivery and biomedical issues. Most person-centered methods are developed in the context of individual consultations, even though group-based diabetes education is a widespread and efficient method of support. Person-centeredness in group-based diabetes education requires a change in practice towards addressing biopsychosocial and behavioral issues, as well as facilitating group processes. It can be promoted and supported by using techniques and tools and a focus on ongoing training of healthcare professionals (HCPs). There is an important gap in the evidence pertaining to developing the best strategies for training HCPs to implement person-centered approaches in group-based diabetes education.

AIM
The aims of the PhD study were to: 1) investigate enablers of and barriers to the facilitation of person-centered approaches by HCPs in group-based diabetes self-management education targeting type 2 diabetes; 2) develop approaches to support HCPs in facilitating group-based, person-centered diabetes self-management education; and 3) explore how HCPs implement person-centered approaches in group-based diabetes self-management education.

METHODS
The study design was guided by action research and divided into three research studies: investigation, development, and pilot test. Data was collected using field observations, interviews, focus groups, and workshops. In the first study, field observations across five settings were conducted in which 13 HCPs and 49 group participants took part; the focus was to investigate approaches that supported or hindered person-centeredness in groups. Field
observations were supplemented by interviews (n=12) and two focus groups (n=16) with group participants, as well as interviews (n=5) with HCPs. In the second study, two workshops were conducted with HCPs (n=14). The aim was to develop approaches to support the facilitation of person-centeredness in groups. In the third study, field observations were conducted to investigate how HCPs implemented the approaches. The final workshop evaluated the pilot test and developed new actions to further improve practice. Systematic text condensation and hermeneutic analysis were used to analyze data.

RESULTS
Study I: hindering approaches included a teacher-centered focus on delivering disease-specific information. Communication was dialog-based, but HCPs primarily asked questions with a single correct answer. Additional hindering approaches were a tendency to moralize and ignoring group participants with suboptimal health behaviors. Supporting approaches included letting group participants set the agenda using broad, open-ended questions. Study II: a self-assessment tool was developed to identify HCPs' strengths and areas in need of professional development to effectively facilitate group-based, person-centered diabetes education. The self-assessment tool was found to serve as a starting point for a flexible and stepwise customization of professional development programs to match HCPs’ perceived needs, existing skills, and local circumstances. Study III: three categories described the implementation of new approaches: 1) some HCPs agreed with the concept, but implementation was challenging, hindered primarily by existing organizational structures or usual practices that often tended to be teacher-centered; 2) other HCPs were highly ready to change but unable to structure the process, leaving group participants uncertain about the aim; and 3) one setting succeeded with implementation, tailoring content and processes to group participants’ needs, promoting reflection and teachable moments.

CONCLUSION
The person-centered concept remains an ideal in many settings. However, the use of action research in professional development created context-sensitive methods and increased HCPs’ readiness to implement. More attention should be paid to systematic training of HCPs. Training should be structured incrementally, incorporating techniques directed towards existing skills and including ample time and resources to train and reiterate new ones.
7.2 Danish summary (Resumé)

BAGGRUND

Håndtering af type 2 diabetes er et livslangt ansvar for det enkelte individ, der påvirker mange kompleks biopsykosociale og adfærdsmæssige forhold i hverdagslivet. Diabetesuddannelse er en væsentlig del af diabetesbehandlingen i forhold til at fremme håndtering af sygdommen. En personcentreret tilgang i et diabetesstævnet patientuddannelsesforløb har vist sig at medføre positive resultater. Tilgangen er dog ofte svært at implementere i praksis, idet undervisningen ofte har et fastlagt indhold, hvor biomedicinske emner og envejskommunikation dominerer. De fleste personcentrerede metoder er målrettet individuel diabetesuddannelse, selvom gruppebaseret diabetesuddannelse er et udbredt og effektivt behandlingstilbud. Personcentrering indenfor gruppebaseret diabetesuddannelse kræver en ændring i praksis henimod et bredere biopsykosocialt perspektiv samt facilitering af gruppeprocesser. Teknikker og værktøjer kan fremme og støtte personcentrering i undervisningen, men det er også nødvendigt med løbende træning af sundhedsprofessionelles (SPs) kompetencer. Der mangler viden om, hvordan SP bedst kan understøttes i at udvikle og implementere personcentrerede metoder i gruppebaseret diabetesuddannelse.

FORMÅL

Formålet med ph.d.-studiet var at: 1) undersøge muligheder og barrier i relation til facilitering af personcentrering målrettet gruppebaseret diabetesuddannelse; 2) udvikle tilgange der understøtter SP i at facilitere personcentreret diabetesuddannelse i grupper; og 3) undersøge hvordan SP implementerer personcentrerede tilgange i gruppebaseret diabetesuddannelse.

METODE

Studiedesignet var inspireret af aktionsforskning og opdelt i tre forskellige studier: undersøgelse, udvikling og pilot. Dataindsamling bestod af feltobservationer, interviews, fokusgrupper og workshops. I første studie blev feltarbejdet gennemført i fem forskellige settings, hvor 13 SP og 49 gruppedeltagere deltog. Fokus var at undersøge, hvilke tilgange der støttede eller hindrede personcentrering i grupper. Feltobservationer var suppleret med interviews (n=12), to fokusgrupper (n=16) med gruppedeltagerne samt interviews med SP (n=5). I andet studie blev der gennemført to workshops med SP (n=14). Formålet var at udvikle tilgange, der understøttede SP i at facilitere personcentrering i grupper. I tredje fase blev feltobservationer gennemført med fokus på at undersøge, hvordan SP implementerede metoderne. I en sidste workshop med SP
blev pilotafprøvning evalueret og metoderne videreudviklet. Systematisk tekstkondensering og hermeneutisk analyse blev anvendt til at analysere data.

**RESULTATER**

Studie I: Diabetesundervisningen var domineret af et undervisercentreret fokus, hvor de SP satte agendaen og leverede overvejende sygdomsspecifik information, hvilket var en barriere for personcentrering. Kommunikationen var dialogbaseret, men de SP anvendte primært spørgsmål med ét korrekt svar. SP havde en tendens til at moralisere og ignorere gruppedeltagere med en suboptimal sundhedsadfærd. Personcentrering blev derimod understøttet, når SP stillede åbne spørgsmål for at igangsætte refleksioner og gruppedialog. Studie II: Et selvvurderingsværktøj blev udviklet med henblik på at identificere SPs styrker og udviklingsbehov i et kompetenceudviklingsforløb målrettet facilitering af gruppebaseret, personcentreret diabetesuddannelse. Selvvurderingsværktøjet blev fundet brugbart i et fleksibelt og tilpasset kompetenceudviklingsforløb med udgangspunkt i SPs individuelle udfordringer og behov, eksisterende kompetencer samt lokale forhold. Studie III: Tre forskellige implementeringsstrategier blev identificeret: 1) SPs implementering var udfordrende grundet eksisterende organisatoriske strukturer samt en praksis der ofte var undervisercentreret. 2) SP var i høj grad klar til forandring og implementerede tilgange med et biopsykosocialt fokus men havde svært ved at strukturere og skabe klarhed i gruppeprocesserne, hvilket udfordrede den personcentrerede tilgang. 3) Én setting balancerede indhold og proces ved at målrette undervisningen til gruppedeltagernes behov samt skabe refleksioner og gruppedialog.

**KONKLUSION**

Det personcentrerede koncept er fortsat et ideal i mange settings. Aktionsforskning er en brugbar metode i forhold til at skabe kontekstspecifikke metoder og øger SPs forandringsparathed. Der bør fremover være mere fokus på systematisk kompetenceudvikling af SP. Kompetenceudvikling bør tilrettelægges gradvist, hvor tekniker målrettes eksisterende kompetencer inklusiv tilstrækkelig tid og ressourcer til at inkorporere nye tilgange i praksis kombineret med et øget fokus på organisatoriske forhold til at understøtte forandring.
8. REFERENCES


22. Center for Sundhed Region Hovedstaden. Forløbsprogram for Type 2 Diabetes, Hospitaler, Almen Praksis og Kommunerne i Region Hovedstaden [Disease management
program for type 2 diabetes, hospitals, general practice, and municipalities in the Capital Region]. Hillerød: Center for Sundhed, Region Hovedstaden; 2016.


9. APPENDICES

9.1 Articles

9.1.1 Article I

9.1.2 Article II

9.1.3 Article III

9.2 Approaches developed in the workshops

9.2.A Presentation exercise

9.2.B Tool to facilitate reflection and dialog about exercise habits

9.2.C Tool to facilitate reflection and dialog about eating habits

9.2.D Tool to assess readiness to change and facilitation techniques

9.2.E Tool to facilitate back on track

9.2.F Tool to initiate value clarification in regards to diabetes

9.3 Questionnaire, workshop 1

9.4 Information letters to healthcare professionals about the workshop process

9.5 Declarations of co-authorship
APPENDIX 9.1 ARTICLES

9.1.1. Article I

An ethnographic investigation of healthcare providers’ approaches to facilitating person-centredness in group-based diabetes education

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Scand J Caring Sci; 2017

An ethnographic investigation of healthcare providers’ approaches to facilitating person-centredness in group-based diabetes education

Aim: To investigate approaches among healthcare providers (HCPs) that support or hinder person-centredness in group-based diabetes education programmes targeting persons with type 2 diabetes.

Methods: Ethnographic fieldwork in a municipal and a hospital setting in Denmark. The two programmes included 21 participants and 10 HCPs and were observed over 5 weeks. Additionally, 10 in-depth semi-structured interviews were conducted with patients (n = 7) and HCPs (n = 3). Data were analysed using systematic text condensation.

Results: Hindering approaches included a teacher-centred focus on delivering disease-specific information. Communication was dialog based, but HCPs primarily asked closed-ended questions with one correct answer. Additional hindering approaches included ignoring participants with suboptimal health behaviours and a tendency to moralize that resulted in feelings of guilt among participants.

Discussion: Healthcare providers are often socialized into a biomedical approach and trained to be experts. However, person-centredness involves redefined roles and responsibilities. Applying person-centredness in practice requires continuous training and supervision, but HCPs often have minimum support for developing person-centred communication skills. Techniques based on motivational communication, psychosocial methods and facilitating group processes are effective person-centred approaches in a group context.

Conclusion: Teacher-centredness undermined person-centredness because HCPs primarily delivered disease-specific recommendations, leading to biomedical information overload for participants.

Keywords: person-centredness, person-centred methods, self-management, group-based patient education, diabetes, ethnographic fieldwork, qualitative methods, healthcare providers’ skills, communication skills.

Submitted 15 June 2017, Accepted 27 June 2017

Introduction

Self-management behaviour in persons with type 2 diabetes (T2DM) is crucial to preventing diabetes complications and improving diabetes outcomes and quality of life (1–3). Nevertheless, many persons with T2DM struggle with managing demanding daily care while having minimal contact with healthcare providers (HCPs) (4).

Person-centredness is a key element in diabetes self-management education and support because it encourages behaviour changes, creates a sense of empowerment and maximizes quality of life (5–7). Despite the popularity of the concept of person-centredness, no single agreed-upon definition exists in the literature (8). We define the conceptual dimensions of person-centredness in self-management programmes to comprise biopsychosocial support, collaborative patient-provider relationships and the incorporation of patients’ needs, values and preferences (8). Evidence suggests that persons with T2DM attending self-management programmes value a person-centred approach much more than a paternalistic teaching method in which they assume a more passive role, receiving information and knowledge without active participation (9, 10). Persons with diabetes are interested in their disease but not in diabetes in general (9).

The methods that HCPs use while providing diabetes self-management programmes play a central role in the
extent to which it is person-centred (8, 11). Currently, most programmes are more teacher-centred than person-centred since they often are based on HCPs’ understanding of patients’ learning needs, rather than on patients’ preferences and needs (12). Although many HCPs support the concept of person-centredness, its implementation in practice remains challenging. HCPs are most comfortable with skills related to informing, directing and making choices on behalf of patients (12, 13). However, these skills have little impact on self-management (14, 15). The ability to move from teacher-centredness to apply person-centredness in clinical practice requires developing specific communication skills and ongoing training in addressing biopsychosocial issues (13, 16–18).

Most person-centred methods address communication between HCPs and persons with T2DM in individual consultations (19). However, group-based diabetes education is a widespread method of support; it is more cost-effective and beneficial than individual education because it brings patients together to share experiences (20–26). Moving towards person-centredness in group-based diabetes education involves a balance between education related to self-management, addressing psychosocial needs and managing group processes (27, 28). Enabling person-centredness in group settings is more similar to facilitation than to traditional didactic teaching; the group, rather than the teacher, is viewed as having answers to challenges group members might have (29). Facilitation is about process rather than content (30). However, there is a need to ascertain how HCPs facilitate and manage person-centred methods in group-based diabetes education programmes. The aim of this study was to investigate and identify HCP approaches that support or hinder person-centredness in group-based diabetes education programmes.

Methods

Ethnographic fieldwork studies social groups in context, including social interactions between people and their physical, material and institutional surroundings (31). In this study, fieldwork conducted between March and July 2015 was used to gain insight into the behaviours of HCPs and individuals with T2DM in group-based diabetes education programmes in Denmark. Semi-structured interviews were conducted with persons with T2DM and HCPs.

Data collection and design

Throughout the programmes, the first author both participated in social activities such as casual conversations and exercises and observed while maintaining the analytical and intellectual distance needed to interpret social settings and recording field notes (32). Thus, the first author’s participation could be characterized as moderate (33). During the observations, the researcher wrote down key words and phrases by hand in order to preserve accuracy and detailed descriptions. These field notes were as quickly as possible typed on the computer to construct detailed descriptions (34). In addition to the description of the observations, programme documents such as schedule and content of the programmes, PowerPoint presentations, leaflets and recipes were integrated as data in the analysis. Particularly, PowerPoint presentations were highly useful as data in the analysis as many sessions frequently followed the content on PowerPoint presentations.

Although the two settings were different in terms of one primary care setting vs. one hospital setting, the two programmes were similar in content and scope. Each met for 2 or 3 hours a week over 5 weeks and had a structured curriculum with content that included complications of diabetes, medical treatment, nutrition, illness awareness, exercise, foot care and life with diabetes. Programmes were conducted by a multidisciplinary team consisting of two physicians, two Registered Nurses, two dieticians, two physiotherapists, two podiatrists. Nine of the HCPs were females; they were diverse in terms of experience and continuing education. Two of the nine HCP had had education at diploma level. Six of the HCP had more than 5 years of experience in patient education. Nine to twelve persons with T2DM and a few spouses participated in each programme. Participants with T2DM varied in terms of age, gender, occupational status and diabetes duration (Table 1).

Patients in the hospital setting were referred from the hospital department where they received diabetes care for poor glycemic control; those in the primary care setting were referred by their general practitioners from whom they received diabetes care.

The detailed fieldwork descriptions informed the semi-structured interviews by exploring two issues in more depth: (i) the needs, values and health beliefs of participants living with T2DM and how their needs and wishes were met; (ii) the ways in which HCPs facilitated these needs, values and health beliefs. To ensure that the study captured the experience and knowledge of the patients and HCPs within the two diabetes settings, interviews were conducted in both settings. To capture different experiences with diabetes education, interviews were conducted with patients in these different settings to see how diabetes education programmes were used in the different settings.

Table 1 Demographic characteristics of participants participating in programmes

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<td>Gender</td>
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<td>Age 42–74 years</td>
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were taken into consideration throughout the programme and (ii) HCPs’ experiences and perceptions of facilitating person-centredness in group-based diabetes education and how programme organization influenced their work with groups. Seven of 21 participants with T2DM were recruited on the basis of variations in age, gender, occupational status, duration of diabetes and programme setting and interviewed in their homes (Table 2).

Interview content areas included participants’ disease history, reasons for attending the programme, experiences of social interactions with other participants, and the degree to which the programme met their expectations. Furthermore, we interviewed two programme participants who only attended once or twice in the programmes to further explore their reasons for nonattendance. Three HCPs responsible for programmes were recruited for interviews conducted in their workplaces. Content areas included their reflections on the programme and views on the benefits of group processes. All interviews were tape recorded and transcribed verbatim.

Data analysis

Data consisted of field notes, interview transcripts and programme documents. Data were analysed using systematic text condensation described by Malterud (35). Systematic text condensation is an inductively method conducted in four steps. Data were initially read closely to obtain a general impression of the whole. Reviewing the complete set of data gave a more profound insight than the initial understanding of the field. Secondly, all data were systematically reviewed to identify preliminary meaning units as a starting point for organizing data into categories. In the third step, data were grouped into two overall categories; one category included data that gave information about approaches hindering person-centredness and another category included data about approaches supporting person-centredness. Within this framework, subcategories were developed describing the different factors that elucidated the aim of the study. This provided adjustments of the preliminary categories and decisions on which categories to select for further analysis (35). This revealed a condensation based on all data where we elaborated on categories and iteratively changed subcategories as we became more aware of the content of the meaning units. In the last step, the content of each group of subcategories were summarized into more general descriptions of the categories.

A simple word program was used to manage, categorize and analyse data using highlights and marginal comments in the document. These sections were then cut out of the transcript and transferred to coding pages where similar subcategories were grouped together by comparing differences and similarities and subcategories and main categories were created. Six subcategories subsequently emerged that support or hinder person-centredness labelling them as distinctively as possible without overlap. Specific quotes and excerpt from the data were selected for inclusion to illustrate the subcategories.

All authors participated in interpreting and discussing subthemes and themes until agreement on the final themes and a comprehensive understanding were reached.

Ethical issues

The study was conducted in accordance with the Declaration of Helsinki. The informants received information, both orally and in writing. This included information about the possibility of withdrawing from the study at any time. Written consent was obtained before the interviews were conducted and confidentially ensured.

Results

Approaches hindering person-centredness

Teacher-centredness undermined person-centredness. A teacher-centred approach that included disease-specific content intended to help participants modify their behaviour and prevent diabetes complications undermined person-centredness in the group. A teacher-centred approach was supported by a structured curriculum with predefined content focusing on biomedical aspects of diabetes. Teacher-centredness was further supported by HCPs’ assumptions and experiences of patients’ learning needs to prevent diabetes complications, rather than on participants’ own preferences and needs. Participants with T2DM did not participate in choosing meaningful issues. One HCP described the aim of the programme:

It’s about the disease, how the disease occurs. It’s about treatment, complications, and feet. I mean

<table>
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<th>Table 2 Demographic characteristics of interviewed participants</th>
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why they have to go to these tests. How complications are screened and the type of complications they might get. (HCP number 2)

A teacher-centred approach was supported in one of the interviews with a participant who only attended once in one of the programmes. The programme participant described her reason for nonattendance:

The knowledge I have gained wasn’t really new. Then I thought – it’s really a waste of my time and a waste of their time. The teacher didn’t listen to what people said the other way around. It really annoyed me. Then a thought – this is really bad. The teacher talked down to people. I thought the teacher patronized us. (Participant number 1)

Prepared didactic presentations were the most frequent teaching method. The presentations focused on disease-, diet- and exercise-specific content. The role of HCPs was to deliver teacher-identified recommendations related to daily life with T2DM by teaching and telling participants what to do. HCPs attempted to transfer a considerable amount of knowledge in a short time; they often seemed rushed and participants experienced information overload. This resulted in a lack of group dialog, as described in an excerpt from the field notes:

A lot of PowerPoint slides were used with pictures clarifying the content. The HCP was trying to ask questions from the predefined agenda: ‘Does anyone have any examples of saturated/unsaturated fats?’ After a few questions, the HCP continued in the teaching in an instructive way, whereas the people with T2DM and their spouses were mostly passive listeners. After a while, the HCP talked about her original plan of an exercise including a ‘taste experience’. However, the HCP was in a hurry; ‘my time is running out and I will do the exercise next time’. (Field note 1)

The physical settings did not support person-centredness in terms of a collaborative patient-provider relationships and the incorporation of patients’ need, values and preferences. For example, programmes predominantly took place around rectangular tables, and HCPs stood at the end of the tables in front of a whiteboard presenting power points. In one of the settings the room was long and narrow, the whiteboard was on the wall adjacent the entrance door, and a majority of participants had to sit with their backs to the board and could not easily see it.

One programme participant stated about the didactic teaching form:

They tend to teach too much as if they read from a pamphlet, right. They have to deepen it one way or another. (Participant number 2)

A biomedical approach. Programmes focused primarily on biomedical knowledge, illustrating an underlying assumption that teaching biomedical content supports self-management behaviour in persons with T2DM. Consequently, psychosocial aspects were rarely touched upon throughout the programme. The following field notes excerpt describes a HCP teaching content related to diabetes complications. It illustrates an underlying assumption that fear can motivate change in persons with T2DM. In addition, the HCP did not have much time to prepare; she (or he) entered the room unaware that the programme targeted only individuals with T2DM. The content was delivered at an abstract level restricted to the biomedical perspective:

Initially, the HCP asked: ‘Does everybody have type 2 diabetes?’ The whiteboard adjacent to the door was used to draw and explain in detail about diabetes complications. The risk of diabetic neuropathy, infections, amputations, dialysis, and all types of medical treatment were all teaching topics mixed together. Additionally, the HCP used phrases such as ‘we do not tolerate high cholesterol: it increases the risk of ischemic heart disease’.

Helen was completely absent, staring down at the table in front of her. Michael packed his stuff together and crossed his arms. Brian looked in his diary and whispered a few words to his wife sitting next to him. John yawned and put his hand on his forehead. The HCP didn’t take any notice of participants’ nonverbal signals. Finally, the HCP ended the lecture: ‘I will not frighten you further.’ John answered, ‘I feel quite uncomfortable’. Michael said quietly, ‘As a normal person you don’t understand much of it’. The HCP replied, ‘With good diabetes control it is possible to live as long as you want. Stop smoking, exercise more, remember your medicine and follow our recommendations’ and ended the session with a closing remark: ‘It’s a pity to lose a toe, a leg, or get a heart attack’. Everyone in the room nodded and agreed, ‘It wouldn’t be nice’. (Field note 3)

One question, one answer. Occasionally, the HCP attempted to engage participants in dialog and participation.

However, the HCP asked primarily closed-ended questions which had a single correct answer. One setting used Diabetes Conversation Map™ containing series of pictorial symbols of facts and information about T2DM. The aim of the map was to help programme participants to easily understand different aspects of the disease where HCP were asking questions concerning pictures on the map. Despite the attempt to promote dialog and participation, the questions were framed from a teacher-centred approach controlled by HCPs’ understanding of participants’ learning needs, rather than on their preferences, values and needs. A HCP described the use of the Diabetes Conversation Map:
Person-centredness in patient education

I’m asking questions instead of giving the answers and then I control them along the way if it is wrong. Then I can control what we talking about. There is, of course, time for them to ask questions. But you have to be a bit experienced to control it so they give the right answer. (HCP number 3)

Consequently, in this dialog, the HCPs ignored wrong answers and acknowledged and rewarded participants who answered correctly. Similarly, other exercises comprised a similar concept of ‘one question one answer’. As described in an excerpt from the field notes:

The HCP said: ‘Let’s play a game. That would be fun’. A pack of fact and fiction cards was distributed among participants around the table. Each card had a statement, and the idea was that the participants had to say whether the statement was fact or fiction. The first card: ‘Diabetes can be triggered by stress’. Several participants were in doubt about the right answer, and there were several different suggestions. The HCP didn’t really answer. Finally, Jacob gave the right answer, which the HCP recognized and acknowledged, further elaborating: ‘Correct, stress can trigger diabetes either by a massive trauma or stress’. Next card: ‘People with diabetes can live a normal life’ Everybody agreed that it was a fact! Next statement: ‘Pre-diabetes exists’ Several participants discussed the answer. The HCP didn’t answer before the right answer was given. (Field note 4)

In addition to ignoring incorrect answers to their questions, HCPs ignored participants who made ironic or sarcastic comments about recommended health behaviours or shared about behaviours the HCP considered inadequate. The HCP was fully aware of using an ignoring approach:

A participating husband was very good at—in a very ironic way—ignoring what we did and said. He asked several times, ‘Where is the cake? I want to go out and smoke! Or, why do we have to go out for a walk?’ It was sort of very negative in a humorous way, you know? I simply ignored what he said. (HCP number 1)

A moralizing way of teaching. An underlying assumption in the teacher-centred approach emphasized the role of T2DM as a disease for which individuals were responsible for achieving good health outcomes. Consequently, the teacher-centred approach included a tendency to moralize and judge patients for causing their own health problems as a result of character weaknesses. Content related to restraint and self-control was intended to modify participants’ behaviour by increasing their willpower. One HCP repeated the slogan “due care and diligence” from a famous Danish shipping magnate in remarks at the beginning and close of the presentation. The following field note illustrates the focus on restraining and controlling behaviour:

HCP: ‘Let’s start with a little exercise’. The PowerPoint presentation showed a picture of a bottle of wine, and the HCP explained ‘Let’s try the dry stuff’ (she has raisins in her hand). All participants received a raisin, and the HCP explained: ‘Put one in your hand. First, feel it and smell it and then put it in your mouth. Now chew it and think about how it tastes’. The participants had their eyes closed and were trying to chew the raisin slowly. Finally, Hans replied: ‘If I have to eat that slowly, then it will take a long time’. That’s exactly the point the HCP had been waiting for and she replied: ‘We eat so fast and forget to taste the food, including sweets, cake, and chocolate—the point of this exercise is that it takes time to taste and eat. It takes 20 minutes until you feel full, so we need to give ourselves the time to taste and eat’. Hans mumbled ironically: ‘So you know the type!’ HCP: ‘Remember it takes 20 minutes to become full’. (Field note 2)

This exercise turned out to identify unhealthy eating habits as a consequence of the inability of persons with T2DM to control consumption of sweets. The HCP’s choice to initiate the exercise with raisins seemed to reflect a belief that plentiful intake of sweets generally characterized persons with T2DM; consequently, teaching content about self-control became an approach to motivate behaviour change. Moreover, the comment from a participant—‘so you know the type’—can be interpreted as reflecting a feeling of guilt. A moralizing way of teaching generates a risk of creating learning barriers and does not support person-centredness.

Some interviews with programme participants supported the observation from fieldwork that HCP attempts to promote behavioural changes might be experienced as judgemental. This experience can create the risk of engendering psychological resistance or defensiveness because persons with T2DM may feel controlled without respect to their values, preferences and needs. The unintended effect can be counterproductive to developing healthy self-management behaviours when participants either do not follow HCPs’ advice or even do the opposite of their recommendations. As a person with T2DM expressed:

The HCPs know what to do, but they are not really good at teaching. Because with a raised finger then you get really mad. (Participant number 7)

Approaches supporting person-centredness

Empathy enhanced the relationship. Some HCPs supported person-centredness within the group. One HCP stated, in an interview, the importance of including spontaneous input from participants in order to the promote group dialog as a main teaching skill, even though observations showed it was not frequently adopted in practice. A potential explanation is that HCPs were unaware of the
dominance of the biomedical organizational culture, reflected in HCPs who do not ‘walk the talk’:

It’s all about noticing the small comments from the patients and catching them and this is only possible if you have practiced a lot as a HCP. I was very clumsy in the beginning, but the more you teach, the more years you have practiced teaching and the more education you get, the better I think I have become as a HCP. (HCP number 1)

However, the same HCP was very conscious about the potential that her personal attitude and teaching style had to enhance the relationship with programme participants and gain their trust as a gateway to achieving person-centredness in the group. Additionally, her attitude and teaching style was crucial for the interactions and dynamics in the group:

If I have the courage to give something of myself, then there is an implicit expectation that they are also going to give something. It means a lot that they dare share their private lives. Because in the end it means that they will think I have some useful tools. (HCP number 1)

Facilitating instead of teaching. The following field note excerpt describes a session in which a HCP facilitated instead of teaching by letting the participants set the agenda using broad, open-ended questions and minimizing HCP statements, arguments and persuasive comments. Participants’ thoughts and feelings in their daily life with diabetes were acknowledged by making space for self-reflection using picture cards and open-ended questions. In contrast to the teacher-centred approach, the HCP role was to manage the process without controlling the content:

The HCP spread a pile of picture cards out on a table in the middle of the room and the persons with T2DM and their spouses were asked to choose two different cards. The HCP said to choose their first card based on ‘your thoughts about having diabetes’ and the second card based on ‘your thoughts about the future’.

Afterwards, a group of four people and the HCP were sitting together, and the HCP asked: ‘What kind of pictures have you chosen and why?’ Lillian explained that her chosen picture card illustrates her life with small children and that her children motivate her actions: ‘I have to be alive when they are getting married and are having kids’. The HCP asked: ‘What about the rest of you, can you recognize that?’ The rest of them were nodding and said ‘yes’. The HCP encouraged the next participant to talk about her picture. Initially, Emma looked at Lillian and referred to her willpower. ‘No, hell no, that diabetes shouldn’t dictate our life. The aspect with your kids (looking at Lilian)—we have grandchildren and this is also important’. Emma continued and added stubbornness as a key value related to managing diabetes in everyday life. (Field note 1)

In this particular situation, the HCP was able to initiate a dialog about self-identified challenges in managing T2DM. These challenges engendered clarification and identification of personal values and showed potential to anchor navigating life with diabetes. Lillian’s motivation to change her behaviour was grounded by a wish to live a long life with her children. Her stubbornness was important to reaching that goal. This perspective inspired the next participant, who found it very meaningful in terms of her role as a grandmother. For another participant, living a long life was all about stubbornness. Essentially, the dialog between group members elicited core personal values such as being a good mother or grandmother, which involved persistence and stubbornness. These issues were clarified, co-created and related in an interdependent way to group members’ experiences. In that sense, reflections on lived experiences can have an impact on both the speaker and the listeners in groups. Sharing such reflections within the group and reflecting on what other participants said supported and enriched the potential for improving self-management. Furthermore, addressing these issues potentially enhanced participants’ quality of life by reducing feelings they may have had of being alone with their diabetes.

Interviews with programme participants supported how discussions of lived experiences and values within the group can have an impact on both the speaker and the listeners:

The way she [another patient] handled diabetes- I thought it was really… she came with some good ones- how she handled lunch breaks and her thoughts about her children… I think it’s was really good to get others opinions and experiences and transfer these into your own life. (Participant number 4)

Discussion

Person-centredness perceived through a biomedical approach

We found that it was challenging for HCPs to implement a person-centred approach into practice mainly because the programme was overly didactic and focused on biomedical issues. Furthermore, a teacher-centred approach made it difficult to promote dialog and participation as HCPs’ primarily asked closed-ended questions with one correct answer to control the agenda. Teacher-centredness was found to be highly implicit in the programmes; thus, it challenged the person-centred approach. Previous research has shown that the biomedical model has a deep hold on HCPs (12, 18). They are often socialized into the biomedical approach derived
from the model of acute care during their education and their employment in the healthcare system (12, 36). Consequently, many HCPs agree with the person-centred concept, but it is often perceived through the lens of a biomedical culture that is ‘so embedded in their consciousness that they are unaware of its existence’ (18, 36).

**Moving from teacher-centredness to person-centredness**

Current pressures on HCPs to see more patients in less time, practice evidence-based medicine and evaluate measurable health outcomes are essential contextual barriers to fully adopting person-centredness in practice (10). This is consistent with our findings; the potential to apply person-centredness in the programmes was undermined by tight scheduling required to accommodate a standardized curriculum focusing mostly on biomedical issues. Hence, contextual conditions can have a great influence on whether HCP are able and motivated to practice person-centredness.

Moving from teacher-centredness to patient-centredness in group-based diabetes education programmes involves alternative roles and responsibilities for HCPs. In particular, increasing the relationships with participants to enhance trustworthiness and using broad open-ended questions to let the group set the agenda were found to be crucial in promoting person-centredness. However, HCPs have often invested great amounts of time in developing their expert role and are typically comfortable teaching what they perceive persons with T2DM need to change (37). Changing from a role of possessing knowledge and control in a busy biomedically oriented practice might be stressful for HCPs because a person-centred approach involves challenges to their deeply imbedded authority and changes in competencies they often are comfortable in practicing (37). Person-centredness requires that HCPs restrain themselves from informing, directing and trying to convince participants to change. This may be difficult when HCP, who are trained to solve problems, are confronted by unhealthy choices in persons with T2DM (18).

To optimize person-centredness in group settings, training in a diverse set of counselling skills is required (38). Giving HCP opportunities to reflect on how stressful it can be to move from traditional competencies is important (37). However, most HCPs lack access to continuous expert consultation and supervision, a factor that has been identified as an essential issue in diabetes care (39, 40). In fact, findings from the Second Diabetes Attitudes, Wishes and Needs study (DAWN 2) revealed that HCP expressed a need for further training in communication techniques, in particular in the psychological aspects of diabetes (17). Furthermore, practicing person-centred approaches in group settings is complicated by the difficulty of endorsing a ‘one size fits all’ approach because person-centredness in group settings is most successful when it focuses on the needs and preferences identified by the specific group (41).

**Approaches supporting person-centredness**

In our study, providing information about biomedical issues was the main teaching strategy for supporting self-management behaviour among participants. However, for many persons with T2DM, knowledge and recommendations are necessary but insufficient and are often unrelated to self-management (14, 15). Persons with T2DM often know what they should do, but their complex daily lives get in the way. There has been increasing attention to the role of addressing psychosocial issues in group-based diabetes education programmes, which is consistent with the biopsychosocial dimension of person-centredness (39). Studies show that persons with diabetes do not feel engaged by their HCP, and psychosocial support is seldom available in routine diabetes education programmes (42). Effective psychosocial approaches drawing on techniques from emotion management and cognitive–behavioural therapy, including values clarification, have shown to be effective at supporting self-management and quality of life in individuals with T2DM (37, 43–46).

We found that the underlying biomedical assumption can lead to moralistic teaching about self-restraint and controlling one’s behaviour. Creating a judgemental environment in diabetes education can result in focusing too much on individual responsibility without including the context of the complex biopsychosocial environment in which persons with T2DM live (37). Frequently, judgement can lead to distress and decreasing self-management behaviour (47). In contrast, communication skills based on, for example, motivational interviewing by using broad, open-ended questioning and engaging in reflective listening demonstrate an interest in trying to understand the context of patients’ daily lives and minimize HCP statements and arguments. Moreover, expressing empathy by acknowledging the challenges for people with T2DM of self-management in the current broad social context can help them feel they are listened to and understood without shame (28, 43). Techniques based on motivational communication have shown to be effective to support self-management and quality of life in persons with T2DM and are consistent with person-centredness in terms of establishing, enhancing and endorsing a collaborative patient-provider relationship (44).

We also found that HCPs ignored suboptimal health behaviours when demonstrated or described by group participants. This suggests that HCPs need to develop competencies in facilitating group processes, including
encouraging sharing of all views and experiences by group participants without judgement. Person-centredness in a group context means the whole group is collaborating instead of slipping into a mode of counselling individuals (27). However, individual preferences and needs must be taken into account, because individuals are often in different stages in terms of readiness to change and have different personal values. This means that HCPs must focus on the group’s heterogeneity rather than its universality. Assessing each individuals’ readiness to change and facilitating reflections as a method to respond to an individual within the group are beneficial for the whole group in terms of inspiring, supporting and learning from each other (48).

**Implication for practice**

Moving from teacher-centredness to patient-centredness involves redefinition of roles and responsibilities in the patient-provider relationship. Ongoing support in developing HCP person-centred competencies is recommended. However, person-centredness in group-based diabetes education programmes requires further investigation into how to apply existing person-centred methods targeting individual consultations in a group context. A need exists to define effective communication strategies enabling HCPs to manage group processes and facilitate person-centredness (49). In short, there is a pressing need to bridge the gap between theory and practice by identifying how to support person-centredness in real-life group education settings.

Structured measurements to identify patients’ needs and capturing their perception and experience with health care services are increasingly used to give direct feedback on the quality of care. In particular, quantitative patient-reported outcome measures (PROM) as well as patient-reported experience measures (PREM) have shown to be effective (50).

While PROM focuses on patients perceptions of their health status and health-related quality of life, PREM is a measure of a patient’s perception of the care they have received and focus on the aspects of the care that matter to the patient. In other areas these measures are increasingly used to challenge HCPs’ on how they think about the care they provide and, in particular, to enhance improvements in the quality of person-centred care (51). However, further investigation is needed to find solutions in how to promote person-centredness and how to include these measurements in patient education.

**Study limitations**

Researcher background has undoubtedly influenced the interpretations during observations and interviews and subsequently analysis. The first author’s years of experience in the field of diabetes self-management research, keen interests in collaborative, person-centred and psychosocial diabetes care, and being a HCP experienced in chronic life-style diseases highly influenced the views on reality, stance in the research topic, as well as the whole research process and communication of findings (52). However, the combination of observation and interviews strengthen the data quality. The analysis of the field notes informed the interviews and the researcher interpretations were confirmed and compared with HCPs and programme participants experience and perspectives. This use of field notes and interview transcripts served as a balance between participants’ voice and the researchers’ interpretations (52). Finally, the team of authors coming from different traditions (anthropology, public health, psychology and medicine) ensured different perspectives on the interpretations of data and enhanced trustworthiness.

Further strengths included observations of HCPs’ with different educational background, different views on how diabetes self-management education should be conducted and different levels of experience. Limitations include the fact that observations were only conducted in two settings. Our understanding of HCP approaches that support or hinder person-centredness in group-based diabetes education programmes would have been stronger if it had been possible to conduct observations in even more diverse settings.

**Conclusion**

Teacher-centredness undermined person-centredness in group-based diabetes patient education. The primary role of HCPs was to deliver teacher-identified recommendations, teaching and telling persons with T2DM what to do. However, person-centredness is challenging for HCPs to adopt because they often are socialized into the biomedical model and often have minimal support for developing person-centred communication skills. HCP need further training in effective person-centred competencies and how to operationalize their skills in practice. Applying techniques based on motivational communication and psychosocial methods have been shown to be effective at supporting self-management and quality of life in persons with T2DM and are consistent with person-centredness. However, applying person-centredness in group settings involves further investigation into how HCPs can apply these and other person-centred methods in a group context.

**Acknowledgements**

The authors acknowledge all the participants who took part in the study. Additionally, we thank the healthcare
providers and the persons with T2DM and their relatives for allowing us to conduct field observations of the programme.

Author contributions
All authors contributed to study conception/design. Vibeke Stenov collected the data and analysed it initially with Gitte Wind. Vibeke Stenov drafted the initial manuscript with the support from Nana Folmann Hempler, Susanne Revetlow and Gitte Wind who also revised it critically for important intellectual content. All authors read and approved the final manuscript.

References
4 Vallis M. We’ve come a long way…haven’t we? *Can J Diabetes* 2013; 37: 1.
24 Garrett N, Hageman CM, Sibley SD, Deakin T, McShane CE, Cade JE, Ravn I. Facilitering: Ledelse af møder
9.1.2. Article II

The potential of a self-assessment tool to identify healthcare professionals’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education

Vibeke Stenov, Gitte Wind, Timothy Skinner, Susanne Reventlow and Nana Folmann Hempler

Abstract

Background: Healthcare professionals’ person-centered communication skills are pivotal for successful group-based diabetes education. However, healthcare professionals are often insufficiently equipped to facilitate person-centeredness and many have never received post-graduate training. Currently, assessing professionals’ skills in conducting group-based, person-centered diabetes education primarily focus on experts measuring and coding skills on various scales. However, learner-centered approaches such as adequate self-reflective tools have been shown to emphasize professional autonomy and promote engagement. The aim of this study was to explore the potential of a self-assessment tool to identify healthcare professionals’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education.

Methods: The study entails of two components: 1) Field observations of five different educational settings including 49 persons with diabetes and 13 healthcare professionals, followed by interviews with 5 healthcare professionals and 28 persons with type 2 diabetes. 2) One professional development workshop involving 14 healthcare professionals. Healthcare professionals were asked to assess their person-centered communication skills using a self-assessment tool based on challenges and skills related to four educator roles: Embracer, Facilitator, Translator, and Initiator. Data were analyzed by hermeneutic analysis. Theories derived from theoretical model ‘The Health Education Juggler’ and techniques from ‘Motivational Interviewing in Groups’ were used as a framework to analyze data. Subsequently, the analysis from the field notes and interview transcript were compared with healthcare professionals’ self-assessments of strengths and areas in need to effectively facilitate group-based, person-centered diabetes education.

Results: Healthcare professionals self-assessed the Translator and the Embracer to be the two most skilled roles whereas the Facilitator and the Initiator were identified to be the most challenged roles. Self-assessments corresponded to observations of professional skills in educational programs and were confirmed in the interviews. (Continued on next page)
Conclusion: Healthcare professionals self-assessed the same professional skills as observed in practice. Thus, a tool to self-assess professional skills in facilitating group-based diabetes education seems to be useful as a starting point to promote self-reflections and identification of healthcare professionals’ strengths and areas of need of professional development.

Keywords: Person-centered methods, Group-based patient education, Diabetes, Ethnographic fieldwork, Qualitative methods, Professional skills, Educator behavior, Communication skills

Background
Patient education is a critical element of care for all people with diabetes [1]. In particular, a person-centered approach in diabetes education has been shown to successfully support long-term behavioral changes and enhance quality of life among people with type 2 diabetes (T2DM) [2, 3]. Evidence suggests that healthcare professionals’ (HCPs) person-centered communication skills are pivotal for successful self-management in individuals with T2DM [4].

Most person-centered approaches have been developed for use by HCPs conducting individual consultations, although group-based diabetes education is a commonly used self-management approach because it brings people with T2DM together to share experiences and is optimally cost-effective [5–9]. Person-centered approaches are critical components of successful group programs. However, incorporating these approaches into practice requires a wide range of professional skills. HCPs must both adopt a more facilitative approach to addressing group members’ experiences, needs, and concerns and be skilled in managing group dialog to ensure a supportive and collaborative group atmosphere [10]. In this study, we define professional skills as the ability to perform high-quality group-based, person-centered diabetes education in practice.

It is often difficult for HCPs to support group-based, person-centered diabetes programs due to a lack of ongoing professional development and supervision [4, 11, 12]. Recent results from the second Diabetes, Attitudes, Wishes and Needs (DAWN2) study revealed that HCPs were inadequately equipped to provide diabetes education, and many had never received postgraduate training [4]. Such training is a key element in developing person-centered professional skills that enable HCPs to undertake new roles and successfully facilitate group-based diabetes education [13–15].

Currently, HCPs’ skills at delivering person-centered education are evaluated by experts who rate professional communication skills using expert-designed coding scales [16–20]. An expert-dominated approach to assessment can foster tension and create conflict; HCPs may interpret it as judgmental and confrontational and respond in guarded, defensive, and superficial ways, limiting their acquisition of new skills and behaviors [21–24]. Assessments in which experts dominate and provide recommendations and advice on specific actions are morally directed and can impair, rather than improve, person-centered professional skills [25, 26].

To promote professional autonomy and engagement, it is essential to support HCPs in identifying their needs and challenges related to facilitating group-based, person-centered diabetes self-management education [23, 27]. Translating group-based, person-centered approaches into professional skills calls for the development of learner-centered approaches including nonjudgmental methods such as robust self-reflection tools [24, 28]. These approaches enable HCPs to reflect on their skills and encourage self-assessment and self-problem solving first as they seek to improve their professional skills [22].

The aim of this study was to explore the potential of a self-assessment tool to identify HCPs’ professional strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education.

Methods
The qualitative study was conducted between March 2015 and October 2016. It entailed two components: 1) field observations of HCPs from five educational programs in the Greater Copenhagen area of Denmark, followed by interviews with program participants with T2DM and HCPs; and 2) using insights gained from the field observations and interviews, a professional development workshop for HCPs was conducted focusing on self-assessments of skills required to deliver group-based, person-centered diabetes education. To explore the potential of a self-assessment tool to identify HCPs’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education, we compared field notes and interview transcripts with HCPs’ self-assessments.

We used a tool to self-assess professional skills based on the theoretical model ‘The Health Education Juggler’ [10] and techniques from Motivational Interviewing (MI) in Groups [23] to delineate the essential elements of facilitating high-quality group-based, person-centered diabetes education (Fig. 1).
Data collection

Field observations
The aim was to explore HCPs’ baseline skills at facilitating group-based, person-centered diabetes education. The HCPs had different resources, techniques, and facilities e.g. access to training class and educational tools such as a conversation map, a dialog tool box etc. Throughout the programs, the first author both participated in social activities such as casual conversations and exercises, and observed, while maintaining the analytical and intellectual distance needed to interpret social settings and recording field notes [29, 30]. Thus, the first author’s participation can be characterized as moderate [31].

Fieldwork findings informed the following interviews and focus groups exploring two issues in more depth: HCPs and program participants' reflections on specific sessions and issues noted during observations. Thus, the field observations and interviews gained insights into HCPs needs and challenges in existing practice. The knowledge obtained from the ethnographic study and interviews informed the following professional development workshop. The workshop were planned to meet the needs and challenges of HCPs.

By initially investigating challenges in practice and subsequently involving the HCPs in professional development, the workshop aimed at bridging the gap between research and practice.

Professional development workshop
The professional development workshop reported in this article is part of a larger study consisting of three workshops in total focusing on developing professional skills to facilitate group-based, person-centered diabetes education. However, this particular study presents the findings of the first workshop where the aim was to stimulate HCPs’ self-reflection about their professional skills by identifying their strengths and areas in need. Skills were identified with the tool to self-assess professional skills (Table 1). In the second workshop, the aim was to develop methods supporting HCPs in facilitating group-based, person-centered diabetes education, whereas the last workshop aimed at evaluating and redesigning group-based, person-centered methods after being tested in practice.

Using the self-assessment tool, HCPs focused on challenges and skills related to four roles that are equally necessary to facilitate group-based, person-centered diabetes education [10]: Embracer, Facilitator, Translator, and Initiator. Key components were transferred into the
tool to self-assess professional skills using practical techniques from Motivational Interviewing (MI) in Groups (Fig. 2).

The focus was to develop a learner-centered approach supporting self-reflection and enabling HCPs to identify their strengths and areas in need to effectively facilitate group-based, person-centered diabetes education programs.

### Table 1 Overview of activities in workshop 1

<table>
<thead>
<tr>
<th>Method</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icebreaking and brainstorming process</td>
<td>A written and verbal exercise to stimulate initial reflections on how HCPs currently facilitate group-based, person-centered diabetes education (plenary discussion)</td>
</tr>
<tr>
<td>Self-assessing professional skills</td>
<td>Brief presentation of the Four Health Education Roles (plenary) HCPs were asked to merely mark one skilled and one challenged role (Fig. 2) (individual)</td>
</tr>
<tr>
<td>Small group discussions followed by plenary discussions</td>
<td>To identify how HCPs applied the roles. They were asked to discuss in pairs the roles they had chosen and why. Furthermore, to explain how they managed their strengths and challenges in practice</td>
</tr>
<tr>
<td>Cases, discussions in small groups followed by plenary discussions</td>
<td>In the perspective of the Four Health Education Roles the HCPs were asked to identify common challenges observed by the researcher in practice</td>
</tr>
<tr>
<td>Questionnaire (Additional file 1)</td>
<td>Level of experience and postgraduate training, Current use of group-based, person-centered methods, Assess HCPs’ readiness/willingness to incorporate group-based, person-centered methods (individual)</td>
</tr>
</tbody>
</table>

All HCPs had different professional backgrounds and level of postgraduate training. Although all HCPs had experience with delivering group-based diabetes education, they had not received formal supervision. However, all HCPs answered a questionnaire where they considered themselves to be highly ready to incorporate new strategies for facilitating group-based, person-centered diabetes education (Table 2).
patients and HCPs with different background, years of experience, and level of continuing education. Moreover, to strengthen the analytical generalizability results were interpreted using The Health Education Model and techniques from MI in Groups [32]. Finally, quotes were used to illustrate the presented interpretations from field notes as well as interviews. Nevertheless, the hermeneutic perspective concludes that no study can provide findings that are universally transferable because it cannot be interpreted independently from its context. Yet, to enhance the transparency of the study we have included a thorough description of the research process [33–35].

Results
Professional skills HCPs felt skilled about
During workshops, HCPs self-assessed professional skills within the Translator and Embracer roles to be the two most skilled roles. The observations showed equally that HCPs were particular skilled in the Translator role and were highly up to date with disease-specific knowledge and used interactive learning techniques frequently. Moreover, they found it fairly easy to have an empathic attitude to ensure a supportive and collaborative group atmosphere. HCPs self-assessments corresponded to observations of most skilled professional roles during educational programs and were confirmed in interviews.

Translating diabetes knowledge successfully
Observations of HCPs’ professional skills during educational programs revealed that they easily adopted the Translator role. In particular, they were up-to-date about advanced theoretical and disease-specific knowledge and disseminated detailed information to the group. Theoretical knowledge was presented through didactic education focused on communicating disease-specific knowledge, and HCPs also successfully translated diabetes-specific knowledge in ways that were more readily accessible to participants, using a variety of techniques to promote interactive learning. Participants highly valued group activities such as learning to buy healthy groceries, cooking diabetes-friendly food, and physical exercise. Several participants noted that they found interactive and experience-based learning techniques very meaningful in terms of translating diabetes knowledge into their own life. After a group physical exercise activity, one program participant stated:

*The half hour brisk walk indeed decreased the blood sugar significantly. That was really an eye-opener.*

(Interview participant 2)

Some HCPs were also very conscious about the importance of using common language instead of technical

### Table 2 Characteristics of healthcare professionals participating in the professional development workshop

<table>
<thead>
<tr>
<th>Background</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered nurse</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Dietician</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Level of postgraduate training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 year of education at university level</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2 weeks educational course at diploma level</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2–3 days patient education course</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>No training in patient education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Data analysis

Data were analyzed hermeneutically to acknowledge the interconnected nature of analysis and theory generation in the interpretation of data [30]. All data were iteratively analyzed and interpreted using the Health Education Juggler Model and techniques from MI in Groups as the theoretical and interpretative frame. Initial analysis of the field notes focused on HCPs’ teaching and conversational approaches, as well as the dialog and interaction between HCPs and participants with T2DM. The subsequent analysis of semi-structured and focus group interviews emphasized participants’ perceptions and reflections on HCPs’ teaching and conversational approach, and dialog and interaction within groups. Field notes and quotes from interviews were compared to structure the data within the framework of the four Health Education Juggler roles. Finally, workshop data were analyzed to compare the findings from observations with HCPs’ self-assessments. All findings were categorized into two themes representing skills about which HCPs felt most skilled and those that were most challenged, which we then divided into four subthemes related to the four Health Education Juggler roles. As a last analytical step, central concepts from MI in Groups was adapted to provide a more in-depth analysis and interpretation of the subthemes. There are several different techniques to use from MI in Groups, generally aspects such as: promoting unconditional regards; rolling with resistance; asking, listening, and informing; supporting self-efficacy for change; and using a four phases group approach (engagement, exploring perspectives, broadening perspectives, moving into action) [23].

To ensure transparency and trustworthiness of the analysis we made a varied sample by observing multiple settings and combined data from various sources. Thus, the researchers’ interpretations of field notes informed the interviews where findings were confirmed and compared with participants in the interviews including
and medical terms when they conveyed diabetes-specific knowledge. In one program, an HCP appeared keenly aware of the methods for delivering information. The Diabetes Conversation Map™ [36] was used as a learning tool to actively involve and engage participants in the educational process by emphasizing conversations about diabetes-specific topics. The map was used to help the group to more easily retain information and understand different aspects of T2DM through visuals and metaphors. The HCP asked questions concerning the pictures on the map. Although there was not enough time to cover the whole map, it was important for the HCP to investigate what the group knew by asking questions and then filling in knowledge gaps using manageable amounts of information, instead of lecturing extensively. The following excerpt from the field notes describes how the educator translated diabetes-specific knowledge:

A visual map entitled ‘How Diabetes Works’ was used. Series of images on the map described the physical condition of T2DM. The map illustrated a factory producing keys as a metaphor for the pancreas producing insulin. Furthermore, the map illustrated a cell with T2DM where the keys were unable to unlock the transportation of sugar into the cells due to dysfunctional keyholes – designed as a dry and withered apple tree encircled by a locked fence with blocked keyholes. The HCP asked questions like, “What does the factory illustrate?”, “What happens in the cells?”, and “What is the difference between type 1 and type 2 diabetes?” (May 2015)

Embracing the group and creating a reassuring environment

Many HCPs were particularly skilled in fulfilling the Embracer role. They greeted the group with a relaxed and kind attitude, which served as an ice breaker and stimulated a positive and safe group climate. Program participants appreciated the ability of HCPs to acknowledge and normalize the challenges of diabetes management through a nonjudgmental attitude. As one program participant stated in an interview:

One HCP had a husband with the same problems as me, such as difficulties in handling all the issues with food. The HCP talked about these issues in a way and on a level without getting mad, because with a raised finger then you get really mad. (Interview participant 3)

One HCP was particularly adept at modifying the program to be both comprehensive in scope and flexible in content to respond to spontaneous needs within the group. The HCP acknowledged and accepted issues important to the group by slowing down and paying deeper attention to crucial issues. The HCP demonstrated a purely empathetic focus by picking up and responding to verbal and nonverbal cues within the group. This approach succeeded partly because of a semi-structured format in which the HCP introduced a topic and followed the introduction with open-ended questions that elicited personal reflections from participants. The HCP focused more on connecting and guiding the group, which created a safe atmosphere in which the HCP succeeded in helping participants explore personal values. The following field note excerpt describes a meaningful and honest conversation about taboo issues:

One participant told the group that her values were critical in terms of diabetes. “For me, it's important to live a long and healthy life- so that I can be there for my family in the future and continue to be in nature.” “I'm extremely conscious of diabetes complications and terrified of getting my leg amputated. I know every single bit of dietary advice and know exactly how to choose low calorie muesli bars in the supermarket, but I just continue to eat it all until the whole packet is empty”. “I have too much time and eat between meals. Especially now, when I'm no longer in the labor market”. The rest of the group was wholeheartedly supportive and another participant expressed appreciation: “Your honesty and challenges really help the rest of the group”. (October 2016)

In the interview, the participant described the experience of sharing personal issues:

It was really difficult to be honest and tell about my frustrations. Now I'm really getting sad (tearfully). It's really important and gives you something. But it's very personal, because it's your weaknesses that you are honest about. Normally I would not share such taboo issues. (Focus group participant 2)

Professional skills that were challenging

During the workshop, HCPs self-assessed professional skills within the Facilitator and Initiator roles to be the two most challenging roles. They linked challenges in facilitator skills to uncertainty about guiding the group back on track when the discussion took an unproductive or negative turn. Moreover, they found it fairly difficult to initiate motivation for behavior change. HCPs' self-assessments corresponded with observations of the challenging professional skills during the educational programs and were confirmed in interviews.

Demanding to facilitate the process

HCPs seemed highly skilled in the Embracer role. However, many HCPs were unable to move from the Embracer who displays unconditional acceptance to the
Facilitator who enables the process by having the courage to control, direct, and redirect the group in a timely way. As one HCP stated:

“Everything we do as HCPs is often based on what the person thinks and feels. However, I feel a need to control or direct the group towards an overall aim”. (HCP interview 3)

It appeared that HCPs who were faced with unproductive conversations with participants were unable to change topics when needed. In one program, a program participant returned repeatedly to stories about old days in the army. In another program, the HCP had a long one-on-one conversation with a participant about a shift to a new general practitioner after the participant’s former GP retired. Consequently, engagement among the remaining group members completely drained away, creating the risk that their motivation to change would decrease. It seemed to be difficult for HCPs to keep the group on track and prevent unproductive drifts in discussions by either moving the group forward to a new focus or accelerating the conversation to a conclusion. This is described in a field note excerpt from observing an HCP facilitation exercise entitled “My Restaurant” [37]. Thirteen participants with T2DM attended:

The HCP said: “Imagine you are in a restaurant...” The HCP gave instructions for the exercise while spreading pictures of different kind of meals out on the table. The participants were asked to work in small groups to choose one pictured meal. Subsequently, the HCP asked the groups to come up with suggestions on how a healthier restaurant meal could be planned. The first group had a picture of a meal based on a hamburger and suggested, “Skip the fries, bread with whole flour, less cheese, reduced-fat beef” etc. Meanwhile, several participants began to demonstrate resistance to the exercise because they wanted to allow occasional exceptions in their lives with diabetes. One participant glanced at another and whispered “Then I don’t bother going out”. Another confronted the HCP directly, saying “An infrequent restaurant visit shouldn’t be a guilty pleasure. For me, it’s the everyday life that counts”. The HCP addressed the resistance by saying, “Diabetes is demanding and doesn’t disappear if we continue to eat everything from a huge buffet because it will affect the blood sugar”. (April 2016)

In this excerpt, the HCP kept the group on topic, even though it did not meet the current interest of the whole group. Moreover, participants became increasingly resistant as the process continued because they did not find the exercise relevant. It was difficult for the HCP to listen to the arguments against change without bias and then roll with resistance by accepting participants’ choices without approving the behavior. However, HCPs often chose to ignore, reject, or argue with resistant behavior. As one HCP stated in an interview about strategies for dealing with resistant behavior:

“A participating husband was very good at—in a very ironic way—ignoring what we did and said. He asked several times, “Where is the cake? I want to go out and smoke! Why do we have to go out for a walk?” It was sort of very negative in a humorous way, you know? I simply ignored what he said”. (HCP interview 1)

**Difficult to initiate motivation**

During observations, it became apparent that HCPs were challenged in the Initiator role. They were usually not responsive to participants ‘experiences, needs and concerns and did not incorporate them into the program. Frequently, HCPs allocated time at the beginning of the program to ask everyone in the group about their needs and expectations. However, no HCPs explored readiness to change and subsequently tailored the program based on readiness and needs. Participants simply articulated their expectations and needs, after which HCPs proceeded with their predetermined agenda, apparently expecting that individual needs would be fulfilled through the written curriculum. As one program participant described after participation in a program:

“They tend to teach too much as if they read from a pamphlet, right. They have to deepen it one way or another”. (Focus group participant 12)

Questions were most often closed-ended, which promoted short answers and little discussion. Open-ended questions were rarely used to encourage participants to reflect on important issues and guide them to explore reasons for change. The distinction between being facilitators rather than providers of information was often perceived by HCPs as too vague:

*I think that some of my patients will say, then I don’t get it all and my blind spots wouldn’t be disclosed. Then you stay where you are without the inspiration from outside (...) I’ll really need to tell them something more concrete.* (HCP interview 4)

Occasionally, educational programs were characterized by engagement and collaborative learning techniques. This was evident when HCPs used the tool “My Eating
Habits’ [37]. The goal of the exercise was to reflect on and discuss food more broadly by incorporating psychosocial aspects of food. The exercise had 50 small cards containing statements from patients. The idea was to describe healthy and less healthy eating habits, including mental and practical aspects. Participants were asked to read and prioritize different quotations relevant to their relationships with food, with the goal of recognizing that some of the statements matched their experience. However, when HCPs used self-reflective tools to identify participants’ challenges and needs, they often ended the exercise after participants had identified their challenges. Moving from awareness of challenges towards acquiring new strategies and solutions was demanding and challenging for many HCPs. As one program participant described his perception of the exercise:

*Participant:* “If the exercise gave me strategies to handle it [my eating habits], then it would have been meaningful”
*Interviewer:* “Do you think you got the tools to change your eating behavior?”
*Participant:* “No”. (Focus group participant 13)

**Discussion**

We explored the potential of a self-assessment tool based on The Health Education Juggler and techniques from MI in Groups to identify HCPs’ strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education. HCPs self-assessed professional skills within the Embracer and Translator roles as the ones they felt most skilled about and those within the Facilitator and Initiator roles as those that were most challenged. HCPs’ self-assessments corresponded with observations of their professional skills in practice. Thus, HCPs were able to self-assess their professional skills, which can serve as a starting point in planning of professional development programs by organizing personalized professional development based on identified needs and challenges. To our knowledge, no studies have conceptualized the general components in self-assessing the comprehensive professional skills to facilitate high-quality group-based, person-centered diabetes education.

**The basis of the tool**

The tool was based on MI in Groups and the Health Education Juggler as the two different models are complementary. The Health Education Juggler is an empirical, theoretical model describing ideal roles which makes it difficult to achieve in practice, whereas MI comprises a set of practical techniques to facilitate high-quality group-based, person-centered diabetes education. In MI, the decedent of Rogerian client-centered therapy [38], the roots in behavioral therapy, and the further drawing on a process-oriented view on group development [39] has shown to be efficacious in contributing to the field of facilitating health behavior change in groups [23]. Additionally, studies show that the approach is highly applicable in facilitating group-based, person-centered diabetes education [23, 40]. MI in groups, has a particular focus on combining person-centered and goal-oriented strategies enabling HCPs to overcome the pitfalls of becoming either too directive or nondirective in their facilitation [23]. Nevertheless, MI has been criticized for being largely atheoretical [41]. Moreover, a weakness of using MI is the persuasive approach to direct the groups in dealing with ambivalence [42]. MI has proven effective in the field of alcohol treatment, although its less evident the approach today is widely applied into the context of health behavior change in chronic diseases [42]. Several person-centered models merely describe provider-patient communication in one-one consultations. The Health Education Juggler is to the best of our knowledge the first model to describe necessary roles to perform group-based patient education. However, a theoretical model can be difficult to apply in practice [10, 43].

**Why self-assess professional skills?**

It has been argued that development of HCPs’ communication skills relies on knowledge of educational theories, critical reflection on professional skills, and participation in practice-oriented training programs [28]. However, studies have found that HCPs may perform patient education without reflecting on how they are performing it [28]. Some HCPs believe that communication skills are natural abilities, while others imply that professional skills rely on experience [44]. Thus, HCPs do not necessarily relate patient education to theories of teaching and training [44, 45]. Research indicates that professional skills can be primarily developed through critical self-reflection on skills [28]. Furthermore, evidence shows that lack of insight into personal professional skills is closely related to suboptimal professional performance [46]. Conscious efforts in self-reflection have been identified as essential in learning and developing professional skills with the ultimate goal of creating a mindful HCP capable of critical thinking [47]. Thus, self-assessments of skills in professional development programs have the potential to increase self-reflection, which is particularly beneficial when HCPs self-assessments and observations identify the same roles as challenging.

The question is whether HCPs are able to self-assess own professional skills. One study shows that HCPs who perform least well in external assessments tend to overrate their own performance [48]. Other studies have
found that self-assessment of person-centered methods was essential for continuing education to promote professional growth, integration of theory into practice, and critical thinking [49]. In particular, self-assessment was found to have a greater impact on the process of self-reflection and was associated with a more positive or meaningful learning experience [50]. Moreover, studies have found that participation and engagement in general more likely promotes positive outcomes in the field of learning [51].

**Professional development- how to?**
In general, the benefits of self-assessment for professional development are twofold. First, the tool could be useful in deepening HCPs' theoretical understanding of how person-centeredness can be promoted in relation to the four Health Education Juggler roles. Second, self-assessment promotes self-reflection and awareness of the professional skills that the HCPs need to develop. However, a self-assessment tool for professional development cannot stand alone. Empowering HCPs to master group-based, person-centered skills may be a lengthy process [23]. Increasing skills requires knowledge in the theoretical paradigm, conscious self-reflection, and participation in practice-oriented training programs. Studies show that teaching communication skills is highly effective if they contain role-play or video-recordings of practice, followed by feedback and small group discussions, noting the importance of continuous practice to maintain skills over time [23, 52, 53]. It is clear that a self-assessment tool for professional development can be used as a first step to explore HCPs' professional development needs.

**The complexity of juggling roles**
The tool to self-assess professional skills is not suitable for exploring HCPs' ability to juggle the four roles of the Health Education Juggler model because it only assesses skills within roles about which HCPs feel skilled and challenged. The health Education Juggler model refers to the importance of juggling all four roles. An appropriate method for developing and improving the ability to juggle between roles could be video recording followed by careful feedback from an experienced mentor, including questions that enhance self-reflection. Individual HCPs have different strengths and weaknesses in relation to the different roles. Thus, when forming a HCP team to promote group-based, person-centered diabetes programs, it would be valuable to strategically combine team members with different strengths and weaknesses to increase the team's overall capability to successfully enact all four different Health Education Juggler roles. Doing so would likely increase each HCP's skills and further increasing the quality of group-based, person-centered diabetes education.

**Implication for practice**
The Health Education Juggler tool for professional development is a promising approach to self-assessing professional skills for facilitating group-based, person-centered diabetes education programs. In particular, the tool to self-assess professional skills is a learner-centered approach that supports self-reflection, which emphasizes autonomy and, in turn, can increase personal engagement [27]. However, after its use, further training and supervision is subsequently needed to support and develop person-centered professional skills.

A self-assessment tool for professional development cannot replace expert-designed coding scales used to measure professional communication skills. However, this study shows that HCP self-assessments are consistent with practice observations. Further research is needed to identify the ways in which self-assessments can complement expert-designed coding scales rating HCPs' communication skills.

**Strengths and limitations**
Field work made it possible to enter ‘the black box’ [54] and observe professional skills from the inside. It also strengthens the study that the workshops included a multidisciplinary team of experienced HCPs recruited from the same educational program as observed. Additionally, an important strength of the study was that the knowledge obtained in the professional development workshops was relevant to the HCPs participating in the workshops—they were the primary consumers of the findings.

One limitation of the self-assess tool was that it assessed the most skilled and challenged Health Education roles which might be a too narrow categorization. The two polarities may not represent different entities as some HCPs may consider themselves skilled in one role while at the same time considering that particular role as most challenging. Another limitation was the impossibility of observing all HCPs that participated in the workshops. Nine HCPs from the workshop were observed in practice. However, all HCPs in the workshops were from the same educational program. Thus, it was not possible for all the observed HCPs to participate in the workshop due to organizational changes and some HCPs changed job.

**Conclusions**
This study compared HCPs' self-assessments of professional skills with the findings from interviews and observations of HCPs' professional skills. We found that a tool to self-assess professional skills provided an
effective way to promote self-reflections and identification of HCPs' strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education. Their self-assessments corresponded to the interviews and observations of professional skills in practice and can form the basis for individualized professional development plans. Grounded in the Health Education Juggler and techniques from MI in Groups, the tool to self-assess professional skills can also promote self-reflections of the roles HCPs must juggle to facilitate group-based, person-centered diabetes education. Future research should examine the ways in which the self-assessment can augment or complement the current assessment standard of expert observations of HCPs and expert-designed coding scales rating professional communication skills.

Additional file

Additional file 1: Appendix. Questionnaire, workshop 1 (questionnaire investigating HCPs’ professional background, level of experience, received supervision and training, and exploring readiness to change) (DOCX 67 kb)

Acknowledgements

The authors acknowledge all the participants who took part in the study. In particular, we thank the HCPs for allowing us to conduct observations of their programs and take the time to be actively involved in the workshops. Moreover, we acknowledge Ingrid Williander and Annemarie Warming for inspiring us to use the professional development tool.

Funding

This study was funded by Department of Nursing, Metropolitan University College, Copenhagen, Denmark and Health Promotion, Steno Diabetes Center Copenhagen, Gentofte, Denmark.

Availability of data and materials

The authors do not wish to make the data available because it contains information that could identify specific individuals.

Authors’ contributions

All authors contributed to study conception/design. VS collected the data and analyzed it initially with NFH. VS drafted the initial manuscript with the support from TS, SR, GW and NFH who also revised it critically for important intellectual content. All authors read and approved the final manuscript.

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. The informants received information, both written and oral. This included information about the possibility of withdrawing from the study at any time. Written consent was obtained before the interviews were conducted, and confidentially ensured. The Danish Data Protection Agency approved the study (J.nr. 2014 confidentially ensured). This study required no formal ethical approval from the regional ethics.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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Received: 24 April 2017 Accepted: 5 September 2017
Published online: 18 September 2017

References


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9.1.3. Article III

Facilitation of group-based, person-centered diabetes self-management education: Healthcare professionals’ implementation of new approaches

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Abstract

Objective
To explore how healthcare professionals implement new approaches to facilitate group-based, person-centered diabetes self-management education after professional development.

Methods
The study was guided by action research and divided into three research studies: investigation, development, and pilot. In the first study, observations across five settings were conducted. 13 HCPs and 49 group participants took part; the focus was to investigate approaches that supported or hindered person-centeredness in groups. Observations were supplemented by interviews (n=12) and two focus groups (n=16) with group participants, as well as interviews (n=5) with HCPs. In the second study, two workshops were conducted with HCPs (n=14). The aim was to develop approaches to support the facilitation of person-centeredness in groups. In the third study, field observations were conducted investigating how HCPs implemented the approaches. The final workshop evaluated the pilot test and developed new actions to further improve practice. Systematic text was used to analyze data.

Results
Three themes described the implementation of new approaches. First, healthcare professionals agreed with the concept of person-centered group-based education, but implementation was challenging, hindered primarily by existing organizational structures or practices that often tended to be paternalistic. Second, healthcare professionals were highly ready for change but unable to effectively facilitate and create clarity about group processes, leaving participants uncertain about the aim. Third, healthcare professionals tailored content and processes successfully to group participants’ needs, promoting reflection and teachable moments.

Conclusion
The use of participatory methods in professional development created context-sensitive methods and increased healthcare professionals’ readiness to implement. However, more attention should be paid to systematic training of healthcare professionals while implementing new methods in practice. Competency criteria should be operationalized and disseminated.

Practice Implications
A longitudinal approach addressing organizational and structural factors is vital to achieve successful implementation of new approaches.
1. Introduction

Group-based, person-centered diabetes self-management education is offered widely and increasingly associated with benefits that include higher patient satisfaction, improved health outcomes, peer support, and increased cost effectiveness [1-6]. Research has generally focused on outcomes of group-based diabetes programs and less on form and content. However, group-based diabetes education is highly complex and challenging for healthcare professionals (HCPs) to facilitate due to variations in intended purpose, content, and format [7, 8]. Many group-based programs described in the literature do not clearly identify or describe the communication skills practiced by HCPs to support self-management. In fact, the majority of studies that report successful outcomes in group programs do not include a detailed description of specific communication skills used by facilitators [9].

Some studies have identified facilitators’ communication skills as more important than their professional backgrounds [10]. In particular, professional skills related to problem solving, goal setting, and facilitating active participation and group dynamics have been identified as key factors in supporting health behavior changes among group participants [3, 7, 11, 12]. These skills support a person-centered approach, which is currently the nest evidence in diabetes self-management education and of prime importance to good clinical practice [13, 14]. In patient education, the concept of person-centeredness describes a shift away from one-way transmission of content from medical experts to passive listeners and toward actively incorporating participants’ experiences, concerns and needs into the curriculum [15]. Thus, the person-centered approach promotes a collaborative process in which the role of the HCPs is to guide progress, catalyze motivation, and provide the right amount of information at the right time to encourage learning among group members [15-17]. Yet many HCPs have not received training in how to switch practice from “teach and tell” to collaborate and empower [18].
Results from the second Diabetes, Attitudes, Wishes and Needs study (DAWN2) revealed that HCPs experienced substantial barriers to providing person-centered diabetes self-management education [18]. Thus, there is still a missing link in the process of translating person-centered research approaches into the implementation of skills in clinical practice. Further, most HCPs have not been trained in running groups in a manner other than the didactic lecture [16]. To the best of our knowledge, no studies have explored whether and how HCPs who have received training in effectively facilitating group-based, person-centered diabetes education implement the new approaches in practice. Therefore, the aim of this article is to explore how HCPs implement new approaches to facilitating group-based, person-centered diabetes self-management education after professional development activities.

2. Methods

2.1 Study design

The study design was modelled by action research [19], which is suited to simultaneously integrating research into practice and supporting change [20]. An action research approach allows practitioners to collaborate in the process of creating research knowledge, similar to the key principles of dialog and active involvement in person-centered education [20]. By using action research, we strived to empower HCPs to be highly engaged in both the development of the research and the subsequent integration of activities into practice.

Qualitative methods such as fieldwork, interviews, focus groups and workshops were used to collect data [21]. The study design and data collection methods are illustrated in Figure 1.

[Please insert Figure 1 about here]

In the first phase of the study, we collaborated with four registered nurses, four physiotherapists, five dietitians, and an occupational therapist across five settings in the Capital
Region of Copenhagen. One hospital and four municipalities agreed to participate in the study and were either recruited by telephone or email contact, or networking at local conferences. The settings were chosen to vary in geographical areas in the region, size; yet still representative in terms of scope and content. In addition, researchers with public health, communication, and psychology backgrounds participated in the study, which took place from March 2015 to November 2016. In the first study phase from March 2015 to May 2016, field observations were used to understand local context and HCP baseline skills. Subsequently, we conducted semi-structured interviews with HCPs (n =5) from the five settings (one hospital and four municipalities) and with group participants (n=12) from three settings; we conducted two focus groups with participants (n=10, n = 6) at the remaining settings. Interviews and group discussions focused on HCP and participant experiences of setting-specific approaches. The fieldwork and interviews were essential for planning the professional development process and is reported elsewhere [22].

In the second phase of the study, these findings were used to plan professional development workshops. HCPs (n=14) from the five observed settings collaborated, initially, in two workshops from June to October of 2016. The overall aim of the workshops was to develop, in collaboration with HCPs, new approaches supporting the implementation of new approaches to facilitate group-based, person-centered diabetes self-management education. Each workshop focused on a single goal in pursuit of the overall aim. Figure 2 depicts the professional development planning process.

[Please insert Figure 2 about here]

Each workshop lasted three hours and invoked a series of exercises to promote participation, reflection, and dialog. The workshops were semi-structured in the sense that the research group facilitated the process to maintain a focus on topics related to incorporating new
approaches into practice. Relevant theoretical models provided inspiration for techniques and tools supporting implementation of new approaches: principles of person-centered communication [15], motivational interviewing [23], and readiness assessment [24]; problem-solving and goal-setting techniques grounded in social cognitive theory [25]; emotional-behavioral strategies [26]; and group facilitation skills [27]. Table 1 summarizes workshop activities.

[Please insert Table 1 about here]

In the third phase of the study, findings from fieldwork and analysis of the two workshops were used to plan individual meetings with HCPs in which techniques and tools appropriate for each setting were discussed, further developed, and selected. We then pilot tested how HCPs incorporated new approaches in three settings that included 25 individuals with type 2 diabetes and five HCPs. Pilot tests were conducted between August 2016 and November 2016. Two settings dropped out prior to the pilot phase due to issues associated with organizational resources such as relocation and employment changes. Figure 3 details the collaboration process at each setting.

[Please insert Figure 3 about here]

The analysis of the pilot test results led to the final workshop at which we collaborated with HCPs (n=6) to develop new actions to improve practice, discussed how to improve techniques and tools, and evaluated the process and the HCPs’ learning outcomes.

2.2 Analysis

Data comprised interview and workshop transcripts, field notes from the pilot test, and program documents such as PowerPoints, program schedules, and e-mails; all were analyzed using systematic text condensation [28]. Initially, data were read closely to obtain an impression of the whole. Second, meaning units were identified, exploring HCP facilitation of group-based,
person-centered diabetes self-management education. Thirdly, meaning units were sorted into three categories about how HCPs implement new approaches after professional development and then condensed. Finally, the content of the categories was summarized into more general descriptions of themes.

3. Results

Three core categories were identified, describing how HCPs implemented new approaches after participating in professional development about facilitation of group-based, person-centered diabetes self-management education.

3.1 Increased awareness but implementation challenges remain

HCPs from all three settings were very engaged in the workshops. They considered themselves highly ready to change, and they agreed with the theoretical principles related to facilitating group-based, person-centered diabetes self-management education. Additionally, they were engaged in self-assessing strengths and areas in need of professional development. They easily identified common challenges described in patient cases representing typical scenarios observed in practice and were engaged in developing specific tools and techniques to enable practical application.

Participating in professional development promoted an increased awareness of the person-centered approach. However, some inconsistency emerged when it came to actual implementation. The shift away from being an expert who defined the content and provided recommendations (teach and tell) to include person-centered skills was particularly challenging. As one educator reported, “I miss a chance to give them input and concrete knowledge—the participant has to talk all the time, but I really need to tell them something concrete.” (HCP, setting 1)
The organizational capability for implementing person-centered approaches was highly variable. In general, organizational changes, such as new locations or jobs, were common reasons for cancellations in the pilot phase: “We just moved and it didn’t really go as planned so I have to cancel tomorrow.” (E-mail setting 1)

Although one setting agreed to pilot test some approaches, it was important for HCPs in this setting to select approaches that could easily be applied within an existing structured curriculum informed by a clinical agenda. The following excerpt from field notes describes how HCPs in this setting applied tools as an add-on method to the established curriculum. The HCPs used techniques to elicit group participants’ preferences but did not subsequently align the curriculum to the group participants’ preferences and current circumstances:

The first HCP expresses: “The time is very limited but today we have a guest (refers to the researcher), so we really want to thank you for your help and collaboration on this.” At the same time, the second HCP stands ready in front of the PowerPoint presentation with the headline “Diabetes and Diet”, looking at his watch to indicate that this is taking too much time. The first HCP continues, “Now we will ask you to fill in these sheets.” The HCP explains that the hand-out contains questions asking the group participants to reflect individually on what to change and their readiness for change. The first HCP explains further: “Then we will collect your answers and give it back to you at the end of the program (five weeks later) to see whether the education has given you further motivation.” (Pilot test, setting 1)

The knowledge gained from group participants was not used to make the content meaningful; instead, the HCPs from this setting were part of a cultural milieu more akin to
paternalism, in which behavior change was believed to result only from increased knowledge. The need to apply person-centered approaches was not fostered by a supportive organizational culture or perceived as particularly meaningful. However, the HCPs from this setting gained an important understanding from participating in the workshop; they realized that their program was not driven by person-centeredness. They consequently found the methods not applicable in practice. The HCPs became increasingly skeptical and, after the pilot test, decided that the new approaches were less important than the long-established topics in their curriculum:

My colleague and I had a meeting yesterday. We came to the conclusion that we have different views on the program. We think of our program as information and sharing of knowledge but your view is more on the changing process. We think that this process comes after they know more about their disease. Therefore, it is difficult for us to implement what we have learned from you. (E-mail, setting 2)

3.2 Readiness to adopt change but unable to facilitate and create clearness

HCPs from another setting were ready and motivated to learn new approaches and apply them in practice. As one stated: “To become an educator, it never ends. It requires constant development and you have to be mindful about it when you begin as an educator and be open to it.” (HCP, setting 5)

After professional development, HCPs from this setting had an increasing focus on using participatory learning techniques to actively involve the whole group. They used open-ended questions to engage group participants in reflection. Additionally, they allowed group discussions during which participants shared their experiences, needs, and concerns. However, in the effort to avoid the medical model, structure fell by the wayside. The HCPs moved so far
away from the expert role that taking control of the process when needed was challenging. One
educator stated the following about this way of teaching:

The last sessions were really challenging because we tried to throw away
the structure, then I thought—do we really know what we are doing? It
really required personal capacity, it required energy, and I felt really
exhausted, right! I thought along the way, are we where we have to be,
and are we at all achieving the content? (HCP, setting 5)

Many HCPs planned exercises that included personal reflections. However, there was
often a lack of transparency about the process, and HCPs frequently jumped into activities
without explaining the aim. The structure occasionally became undefined and unproductive, as
illustrated in a dialog between HCPs:

HCP 1: It's more about feelings and personality and that kind of stuff. We
want them to reflect, but there is not really professional content to
disseminate. We just tried to be in the room and let the dialog flow, instead
of control. We were just floating with the dialog and then followed where
it went.

HCP 2: I once had a man who said I don’t get anything out of it; it’s only
chitchat.

HCP 3: It’s funny, because it’s on the other end, right! We have made up a
slideshow and decided then we do this, and questions—it’s kind of
annoying. And the opposite end, when we get completely out on a
sidetrack and we never end up discussing what we planned. (HCPs, setting 5)
In the effort to abandon the role as the expert who defined the content, HCPs tended to adopt a narrower focus on goal-oriented concepts. For example, they used tools and techniques focusing on goal setting and action planning. In particular, they tended to force some group participants who not were ready to change to set goals that they had not created themselves, as one HCP articulated:

He wasn’t really interested in changing anything. I really thought it was difficult not to put the words into his mouth. I asked him what he wanted to change or simply just try out the next week. He just said, I can try if you want. Then I said you shouldn’t do it for me; it’s for your own sake. After the program he walked directly into another room and said, now they [HCPs] want me to lose weight. (HCP, setting 5)

3.3 Content and process tailored to the needs of group participants

In one setting, a HCP collaborated with group participants, working from their agenda and tailoring the content to their expectations, needs, and concerns. The HCP mastered the complexity of balancing content and process skills within the program and used didactic theory to expand and consolidate discussions directed towards learners’ perceived needs. As the HCP expressed:

It’s important to begin with the participants’ needs and then facilitate behavior change from that point of view. Then, supporting them to be clearer about how they will work on it in their own way. You don’t facilitate that by traditional didactic teaching, because then you don’t know what the participants want. (HCP, Setting 5)

The HCP was particularly concerned about group processes in terms of creating a positive group climate and was able to both maintain a focus on exploring important issues and
simultaneously move the process forward. In the following quote, the HCP describes how she intentionally handled individual group members with potentially disruptive behavior by using acknowledging responses to avoid sidetracking the dialog:

I’m now better at directing the group. I was really well prepared to handle one participant, and I talked with my colleagues about how to handle her. In general, stopping people without making the atmosphere unpleasant is difficult but very important. I put lot of effort into telling them initially my expectations and the importance of making room for everyone. Maybe that it’s why the participants don’t think it’s awkward.

The HCP used strategies to both accelerate and slow the pace of discussions. When she slowed the pace, she used group discussion methods to help participants interact with each other while they explored concerns and enable the whole group to be empathic and collaborative in offering suggestions. The learning experience enriched the whole group. The HCP described how she facilitated the group dialog and acknowledged the challenges of behavior change:

One participant had an issue that I’m quite sure everyone in the group had in mind. Then we talked a lot about that issue, because it’s something about how to stick to new habits, right. It’s quite difficult for everyone. I actually thought we talked about it in a way without blame and shame; we talked about it in a constructive manner. Have anyone in the group tried it and has any ideas or solutions?

Finally, the HCP used participatory learning strategies and mastered simultaneous interventions on both group and individual levels by making space for self-reflection and group discussion of issues. Thus, she was able to structure the program on both educational objectives and individual needs:
It’s useless for the participants that we teach and tell them about internal and external motivation. It’s much more important that they get the chance to articulate by themselves what is motivation. Then give them a chance to mirror their different ideas. They don’t achieve that from a lecture about motivation. They have to be actively involved.

4. Discussion and Conclusion

4.1 Discussion

We found that HCPs applied new approaches quite differently after participating in professional development about group-based, person-centered diabetes self-management education. In general, there was a broad consensus in support of the concept, HCPs expressing readiness to change. However, the actual implementation was challenging with many HCPs experiencing barriers. Barriers to implementation included existing frameworks in which HCPs were experts who disseminated content, and also issues associated with organizational resources. It appears common that HCPs had a genuine readiness to leave their roles as experts until they began to implement it. Implementation precipitated a swing to the opposite pole, which resulted in unstructured processes and an inability to direct group discussions when needed. Further, HCP expressed dissatisfaction with not being able to maintain the expert “teach and tell” style. However, one HCP mastered the complexity of balancing process and content, facilitating person-centered processes and simultaneously providing expert knowledge in manageable amounts at the right time. It appears that uptake of this model of care is currently dependent on the individual characteristic of the HCP. This raises the question whether HCPs, not naturally inclined to this model, can learn to stop doing what comes natural and adapt this
new style. Operationalizing the criteria to define competency in delivery of person-centered care will allow for this question to be evaluated.

4.1.1 Balancing paternalistic and consumerist extremes

The implementation of new approaches was characterized by two extremes; either HCPs took on the role of an expert by defining the content and providing recommendations following a fixed curriculum or, in the effort to abandon unwanted paternalism, tended to swing so far away from the expert role that the group had all the control. This is consistent with Cribb and Entwistle, who argue that current perceptions about shared-decision approaches tend to be interpreted too narrowly in application [29]. This reveals a frequent misconception of the HCP role at the extremes of either paternalism or consumerism [29]. They argue for a broader middle path between paternalistic and consumerist models that seeks to work with the autonomy and responsibility of both HCP and patient [29]. However, Cribb and Entwistle also question whether it is reasonable to expect that all HCPs have the knowledge and skills to navigate this comprehensive middle path and whether it merely represents an ideal that is difficult to implement in practice because it is so far from current clinical norms [29].

4.1.2 The complexity of implementing new approaches

The complexity of applying new approaches in practice is further supported by a study by Lim and Morris, which estimates that only 10% of learning actually transfers directly to performance [30]. The professional development conducted in this study emphasized personal agency, primarily using HCPs as change agents, and focused less on how organizational and structural factors influence the application of new approaches in practice. Nevertheless, we found that a lack of organizational resources was a fundamental cause of the inability to apply new approaches despite the fact that all HCPs reported being highly ready to change. Including organizational and structural factors in change implementation strategies was found to be
critically important and requires support at all levels, e.g., a supportive organizational culture and increased leadership support [31]. Weiner suggests that assessing readiness to change among HCPs is as an important and necessary step but argues for the need to also assess organizational readiness to change, in which the entire organization expresses a collective commitment to the changes required to successfully apply new approaches [32].

4.1.3 Successful components in the present study design

When examined in light of theories about key features of new approaches that support their implementation, the professional development described here paid careful initial attention to the current local contexts in which the intervention took place by observing and identifying potential enablers and barriers [22]. We also identified a common ground in the form of agreement among HCPs on the core principles of delivering group-based, person-centered diabetes self-management education [33] and high readiness to change, implying that HCPs were committed to take action. We engaged HCPs as change agents and customized approaches to match their local circumstances, perceived needs, and existing skills. Finally, we collaborated closely with HCPs in the design of concrete, context-specific techniques and tools to enable practical application [17, 34].

4.1.4 The benefit of designing a longitudinal study

Although participatory strategies were primarily used to change practice in our study, it could have been beneficial to provide additional interventions at the level of HCPs. Evidence suggests that changing professional skills requires systematic training that includes ample time to rehearse and reiterate skills, mediated by supervisors who are able to facilitate experiential learning [17]. Detailed and descriptive video feedback is also beneficial to developing professional skills. In particular, learning by experimentation that is facilitated in an active small group environment has been shown to strengthen peer support and mutual learning [17].
However, this study had limitations related to its time frame. It was designed and planned to occur over a relatively short period of time for logistical reasons, despite the fact that evidence highlights the importance of a more flexible and incremental approach used within a longitudinal design. In addition, professional development program design should allow ample time for robust communication, increasing complexity, and adjustment to HCPs’ needs and preferences.

4.2 Conclusion

This study shows that participatory methods in professional development can create context-sensitive methods to be implemented in group-based, person-centered diabetes education. However, more attention should be paid to supporting HCPs while implementing new methods in practice including the organizational and structural factors in the change process.

4.3 Implication for practice

Identifying how HCPs apply person-centered approaches for facilitating group-based patient education is highly relevant for several reasons. It supports experts in professional development programs in considering possible obstacles and structuring a stepwise curriculum incorporating a variety training techniques directed towards existing skills. It can engender more realistic expectations of outcomes of professional training, i.e., incremental learning is required to address increasing complexity. Finally, our study highlights the importance of taking important organizational and structural factors into account before identifying potential professional development strategies.
Acknowledgements:
The authors acknowledge all the participants who took part in the study. In particular, we thank the HCPs who took the time to actively participate in the workshops. Moreover, we thank Jennifer Green, Caduceus Strategies, for editorial assistance.

Ethical approval:
The Danish Data Protection Agency approved the study (J.nr. 2014-41-3444). This study required no formal ethical approval from the regional ethics. All participants signed consent forms and were informed about the study verbally and in writing.

Funding:
This study was funded by Department of Nursing, Metropolitan University College, Copenhagen, Denmark and Diabetes Management Research, Steno Diabetes Center Copenhagen, Gentofte, Denmark.

Conflicts of interest:
None

Authors’ contributions:
VS collected the data, initially analyzed it, and drafted the manuscript. NFH contributed to the conception and design of the study. All authors assisted in the analysis and interpretation of data and revised the article critically for important intellectual content. All authors approved the final version.
References


Table legends

**Table 1.** Overview of activities in workshops

Figure legends

**Figure 1.** Model of the study design inspired by action research

**Figure 2.** Overview of the intervention

**Figure 3.** Collaboration with study settings
<table>
<thead>
<tr>
<th>Method</th>
<th>Process or purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icebreaking and brainstorming process (G)</td>
<td>Stimulate initial reflections about how HCPs currently facilitate group-based, person-centered diabetes education</td>
</tr>
<tr>
<td>Self-assessing professional skills (G,I)</td>
<td>Brief presentation and overview of skills needed to facilitate group-based, person-centered diabetes education; self-assessment of skills and challenges</td>
</tr>
<tr>
<td>Discussion of baseline skills (SG,G)</td>
<td>Identify how HCPs applied skills they were asked to discuss and managed their strengths and challenges in practice</td>
</tr>
<tr>
<td>Patient cases (SG,G)</td>
<td>Identify common challenges in patient cases</td>
</tr>
<tr>
<td>Questionnaire (I)</td>
<td>Assess HCPs’ level of experience and postgraduate training, current use of group-based, person-centered methods and readiness/willingness to incorporate new skills</td>
</tr>
<tr>
<td>Insights from Workshop 1 (G)</td>
<td>Present specific skills HCPs perceived as key challenges and key differences between self-assessed and observed skills</td>
</tr>
</tbody>
</table>

**Four inspirational tracks related to observed challenges in practice and the skills HCP identified as challenging in Workshop 1 (I, SG, G)**

**Track 1:**
- Discussion of how to initially assess readiness to change
- Strategies to facilitate not ready, ambivalent, and ready-to-change group participants in a non-judgmental manner through asking questions, active listening, and promoting reflections.

**Track 2:**
- Discussion of how to increase group participants’ motivation, using value clarification as a method to initiate behavior change
- Strategies to facilitate value clarification are open-ended questions, reflection sheets prompting individual reflection, followed by questions that promote group dialog

**Track 3:**
- Discussion of how to enable group processes without restricting content
- Strategies to facilitate group processes and focus on the interaction between group members in reflective dialog: control, direct, and redirect in a timely way to establish discussion flow

**Track 4:**
- A shared decision method for choosing discussion content, given participants’ experience, concerns, and needs
- Strategies to translate questions, reflections, and discussions into understandable knowledge and teachable moments
- Strategies promoting psychosocial support for food and exercise

| Insights from Workshop 2 and pilot test (G) | Discuss incorporating group-based, person-centered methods after the pilot test, based on observations, interviews, and focus groups |

**Working in four different tracks (as in workshop 2) evaluating the methods (G)**

- Present qualitative data from participants’ experience
- Discuss how HCPs used the methods in practice
- Discuss HCPs experience with pilot testing:
  - Are the methods important in your work?
  - Are the methods important for the group participants?
  - How can the methods be adjusted?
  - What else to discuss?

**Redesign of group-based, person-centered methods based on observations, interview, and focus groups (G, I)**

- Present potential actions to improve practice

**Method 1:**
- Discuss how to identify contextual factors inhibiting behavior change

**Method 2:**
- Discuss how HCPs can reduce diabetes-related stigma in diabetes education and which questions to ask to address stigma within the group

**Closing the process (LG)**

- Reflection sheets and discussion:
  - What would you incorporate into your work?
  - What are your take-home messages?

*Abbreviations: G, group; HCP, healthcare professional; I, individual, SG, small group*
Figure 1. Model of the study design inspired by action research

- **Investigating**
  (Explore practice to plan potentially appropriate actions)

- **Piloting and redesign**
  (Pilot-test and redesign actions to improve practice)

- **Action planning**
  (Develop actions through collaboration)
Figure 2. Overview of the intervention

1. Individual meetings with HCPs at each setting to prioritize approaches
2. Pilot test selected approaches

Workshop 1:
Explore HCPs’ existing needs and skills related to facilitating group-based, person-centered diabetes education

Workshop 2:
Develop new approaches relevant for group-based, person-centered diabetes education

Workshop 3:
Discuss and develop the applied approaches
Evaluate HCPs’ learning outcomes

Sub-study 3
Sub-study 2
Figure 3. Collaboration with study settings

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test
- Chose not to participate in workshop 3: HCPs found group-based, person-centered methods inapplicable as the program not was driven by a person-centered concept

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Figure 3. Collaboration with study settings

- Field observations
- Workshop 1, 2 & 3
- Individual meetings with HCPs
- Pilot test

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Figure 3. Collaboration with study settings

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test
- Chose not to participate in the pilot-test and workshop 3: Organizational changes (relocation & employment changes)

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Figure 3. Collaboration with study settings

- Field observations
- Workshops 1, 2 & 3
- Individual meetings with HCPs
- Pilot test
- Chose not to participate in the pilot test: Organizational changes (employment changes)
WHO AM I?
Name, position/hobbies and duration of diabetes?

MY DIABETES
What significance does diabetes have in my daily life?

MY ANSWER


APPENDIX 9.2.B. Tool to facilitate reflection and dialog about exercise habits

MY EXERCISE HABITS

A number of situations are described below that can make it hard to stick to exercising regularly. Please circle the scale below. How strongly do you agree with the following statements?

I find it difficult to exercise...

Strongly

Strongly

disagree

agree

...when I am in a bad mood (tired, experiencing personal problems, feeling low or depressed) 0 1 2 3 4 5 6 7 8 9 10

...when it is inconvenient (poor weather, traveling, having visitors, gym is closed) 0 1 2 3 4 5 6 7 8 9 10

...when it is not part of my daily tasks 0 1 2 3 4 5 6 7 8 9 10

...when I am busy (pressure from work, too much work at home, family responsibilities) 0 1 2 3 4 5 6 7 8 9 10

...when I have to exercise alone 0 1 2 3 4 5 6 7 8 9 10

...if I don’t reach my exercise goals 0 1 2 3 4 5 6 7 8 9 10

...after recovering from illness or after vacation 0 1 2 3 4 5 6 7 8 9 10

...when I feel physical discomfort when I exercise 0 1 2 3 4 5 6 7 8 9 10

Where do I score high?

How can I act differently in the future?

Discuss in the group:

1. When is it particularly difficult to exercise?
2. Suggestions to make it easier in the future?

Facilitator tips:

1. Highlight and link participants with similar concerns and solutions in the group
2. Summarize similar issues to help participants see topics in a new way by hearing and considering new ideas and perspectives from others having the same challenges
APPENDIX 9.2.C. Tool to facilitate reflection and dialog about eating habits

### MY EATING HABITS

Eating is normally more influenced by the principles of pleasure and social interaction. Please circle the scale below. How strongly do you agree with the following statements?

<table>
<thead>
<tr>
<th>My eating habits depend on...</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...my emotions (boredom, loneliness, sadness, reward, guilt, anger, happiness)</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>...my physical discomfort (stress, tiredness, exhaustion, pain)</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>...my daily routines (TV, reading, late at night)</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>...availability or social life (friends, family, weekends, holiday)</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

Try to describe the certain events that trigger your unhelpful eating habits? (Emotions, physical discomfort, daily routines, availability or social life)

### How can you manage your eating habits differently?

Discuss in the group:
1. Triggers to food?
2. Alternative activities to food?

### Facilitator tips:
1. Highlight and link participants with similar concerns and solutions in the group
2. Summarize similar issues to help participants see topics in a new way by hearing and considering new ideas and perspectives from others having the same challenges
APPENDIX 9.2.D. Tool to assess readiness to change and facilitation techniques

READY TO CHANGE?

- **NO**
  - Not ready to change

- **MAYBE**
  - Pros and cons

- **YES**
  - Ready to change

READY TO CHANGE?

Choose one issue in life with diabetes that you have considered changing: __________________________

Are you ready to change?

- NO
- MAYBE
- YES

Why is it important to you?

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________
APPENDIX 9.2.D. Tool to assess readiness to change and facilitation techniques

Discuss in the group what you have considered to change in your daily life with diabetes?

**Facilitator tips:**
Be aware that “green light” assessment can be disguised as “red or yellow light”

---

**NOT READY TO CHANGE**

<table>
<thead>
<tr>
<th>FACILITATORS</th>
<th>BARRIERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep the conversation going to maintain the relationship:</td>
<td></td>
</tr>
<tr>
<td>✔ Explore why they are not ready to change</td>
<td></td>
</tr>
<tr>
<td>✔ Acknowledge and normalize the challenges of living with diabetes</td>
<td></td>
</tr>
<tr>
<td>✔ Use a non-judgmental approach</td>
<td></td>
</tr>
<tr>
<td>✔ Ask open-ended questions (don’t tell them what to do)</td>
<td></td>
</tr>
<tr>
<td>✔ Ask for permission before giving advice</td>
<td></td>
</tr>
<tr>
<td>✔ Explore resistance actively, rather than confronting the person judgmentally. Try to be curious in negative statements</td>
<td></td>
</tr>
<tr>
<td>Initiate a dialogue to clarify personal values</td>
<td></td>
</tr>
<tr>
<td>Give advice and suggest solutions to the challenges the participants might have</td>
<td></td>
</tr>
<tr>
<td>Giving advice without permission</td>
<td></td>
</tr>
<tr>
<td>➤ Invites to resistance</td>
<td></td>
</tr>
<tr>
<td>Urging more willpower</td>
<td></td>
</tr>
<tr>
<td>Threatening bad outcomes (diabetes complications)</td>
<td></td>
</tr>
<tr>
<td>Defensiveness/confrontation/arguing for change</td>
<td></td>
</tr>
<tr>
<td>➤ Can cause defensiveness and resistance</td>
<td></td>
</tr>
<tr>
<td>➤ Shame and blame can destroy motivation</td>
<td></td>
</tr>
<tr>
<td>➤ Can establish a negative relationship</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 9.2.D. Tool to assess readiness to change and facilitation techniques

PROS & CONS

Ask the group to consider and present pros- and cons of changing or staying the same (divide the group into subgroups and note down their answers)

Summarize

Ask each group participant to mention one item on the chart, which they noticed and found meaningful.

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying the same</td>
<td></td>
</tr>
<tr>
<td>Changing</td>
<td></td>
</tr>
</tbody>
</table>
# READY TO CHANGE

<table>
<thead>
<tr>
<th>ASK</th>
<th>LISTEN (includes statements of acknowledgement)</th>
<th>REFLECT</th>
<th>SUMMARIZING STATEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRATEGY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open-ended questions to:</td>
<td>Highlight and acknowledge positive actions</td>
<td>Acknowledge and mirror key messages back to the whole group</td>
<td>Summarizing: Brings different statements from the group and end with an open question inviting and adding multiple views</td>
</tr>
<tr>
<td>1) Identify needs, preferences, and values</td>
<td>Demonstrate an understanding of key messages from the group Allow for silence</td>
<td>Ask open-ended questions as a way to engage the group to reflect and find common issues</td>
<td>Connecting: Connect earlier statements and highlight shared perspectives</td>
</tr>
<tr>
<td>2) Elicit what the group knows and ask for permission before presenting information</td>
<td></td>
<td></td>
<td>Change subject: Summarize the subject and change to a new and more productive subject</td>
</tr>
<tr>
<td><strong>AIM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gives a feeling of ownership and engagement</td>
<td>Builds up motivation and supports self-efficacy</td>
<td>Gives an opportunity for participants to elaborate and expand on their perspectives and thoughts</td>
<td>Enables participants to take a step back and see the overall picture</td>
</tr>
<tr>
<td>Not exclusively attached to the curriculum</td>
<td>Respect and accept participants as they are unconditionally</td>
<td></td>
<td>Statements about change applies to everyone in the group</td>
</tr>
<tr>
<td><strong>EXAMPLE/TECHNIQUE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What’s living with diabetes been like for you? What significance does diabetes have in my daily life?</td>
<td>Look at the whole group when someone talks. It invites others into the conversations and supports a group conversation</td>
<td>What I’m hearing you are saying is... I’m hearing that it’s important to you... Have I understood this correctly when you are saying... Who else? What else?</td>
<td>Who else in the group can recognize what XX just told? What have you done when you were in a similar situation? I can see that many of you are nodding. I think that many of you can recognize what XX just told. Is that true?</td>
</tr>
</tbody>
</table>
APPENDIX 9.2.E. Tool to facilitate back on track

BACK ON TRACK

Negative pattern:
- Relapse
  - Get stuck: Makes it hard to get back on track
  - Self-blame: “I’m such a failure”
  - Amplifies behavior: I have already deviated from the plan, then continue

Positive pattern:
- Relapse
  - Acknowledge: Don’t judge your relapse, forgive yourself, and move on to the course of action now
  - Learn from it: What caused the relapse? What can I do next time?
  - Back on track

MANAGING SITUATIONS THAT TRIGGER OLD HABITS

<table>
<thead>
<tr>
<th>HIGH RISK SITUATIONS</th>
<th>WHAT CAN YOU DO TO MANAGE THEM?</th>
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</thead>
<tbody>
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<td></td>
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</tr>
</tbody>
</table>

MANAGING RELAPSE - How can I get back on track, when I fall into old habits?

<p>| |</p>
<table>
<thead>
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<tbody>
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<td></td>
</tr>
</tbody>
</table>

1. Share experiences in the group
2. How can you get back on track after relapse?
APPENDIX 9.2.F. Tool to initiate value clarification in regards to diabetes

AIM

✓ To be aware of what drives you to live a good life with diabetes
✓ To be aware of whether you are living with diabetes in accordance with your personal values
✓ To be aware of actions that can help you achieve the most meaningful life with diabetes

Tips:
If addressing personal values is too challenging, the following question can be asked: “Imagine someone close to you is giving a speech at your 70th birthday. What would you like them to say about you most of all?”

MY VALUES & DIABETES

Which values give me the most motivation to live a good life with diabetes?
1. ____________________________
2. ____________________________
3. ____________________________

Present one of your values to the group:

_____________________________

MY VALUES & DIABETES

1. What significance do my values have in regards to managing my diabetes?

_____________________________

_____________________________

2. How can I live in better accordance with my values (now, tomorrow, next week)?

_____________________________

_____________________________

_____________________________

_____________________________

Share the following experiences in the group:

1. How can different values be in conflict with your diabetes?
2. How can your values motivate you to change behavior?
QUESTIONNAIRE, WORKSHOP 1

1. PERSONAL INFORMATION:
(All responses will be kept confidential and will be used for research purposes only)

   a. Name:

   b. Gender:

   c. Age:

   d. Your position:

2. ARE YOU WORKING IN A MUNICIPALITY OR AT A HOSPITAL SETTING?

   □ Municipality

   □ Hospital

3. PLEASE MARK THE STATEMENT THAT BEST DESCRIBES HOW EXPERIENCED YOU CURRENTLY ARE IN FACILITATING GROUP-BASED, PERSON-CENTERED DIABETES EDUCATION PROGRAMS?

   □ To a large degree

   □ To some degree

   □ Not much

   □ Not at all
4. PLEASE MARK THE STATEMENT THAT BEST DESCRIBES WHICH CONTINUING EDUCATION OR SUPERVISION WITHIN GROUP-BASED, PERSON-CENTERED METHODS YOU HAVE RECEIVED?

☐ Postgraduate training

Please elaborate on type and level of education

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

☐ Courses

Please elaborate on type and level of education

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

☐ Supervision

Please elaborate on type and level of education

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Nothing

Please elaborate on type and level of education

5. **How often do you use methods to facilitate group-based, person-centered diabetes education programs in your currently work?**

   - Regularly
   - Occasionally
   - Rarely
   - Never

6. **Please use the scale below to rate how important is it for you to use group-based, person-centered methods to facilitate diabetes self-management education programs?**

   On a scale from 0 to 10 where 0 is ‘not at all’ and 10 is ‘very much’

   ![Scale](image)

   - Please mark

   Please elaborate on your self-assessment:
7. PLEASE USE THE SCALE BELOW TO RATE HOW INTERESTED ARE YOU IN RECEIVING NEW INSPIRATION IN YOUR WORK WITH FACILITATING GROUP-BASED, PERSON-CENTERED DIABETES EDUCATION PROGRAMS?

On a scale from 0 to 10 where 0 is ‘not at all’ and 10 is ‘very much’

[Scale with 0 to 10]

Please mark

Please elaborate on your self-assessment:

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
Kære alle,

Jeg sender hermed lidt nærmere detaljer for de kommende workshops i forbindelse med gennemførelse af delstudie 2 i ph.d.-projektet: Personcentrering i gruppebaseret diabetesuddannelse.

**Deltagere:**
Alle deltagere arbejder dagligt med gruppebaseret patientuddannelse målrettet personer med type 2 diabetes. Vi vil derfor være et tværfagligt team bestående af fysioterapeuter, diætister, sygeplejersker, ergoterapeut, motionsvejleder samt forskere indenfor patientuddannelse. Ph.d. studerende Vibeke Stenov vil facilitere de tre workshops. Følgende fem forskellige settings i Region Hovedstaden medvirker i forløbet:

- XX Hospitals Diabetesambulatorium
- Sundhedscentret, XX Kommune
- XX, XX Kommune
- XX Kommunes Forebyggelsescenter
- Sundhedscenteret, XX Kommune
- Repræsentanter fra Steno Diabetes Center og Professionshøjskolen Metropol til at understøtte afviklingen af interventionen

**Adresse for de tre workshops:**
Steno Diabetes Center
Niels Steensensvej 6
2820 Gentofte

Direkte nummer: 72 48 73 69
(døren er låst, så de kræver en opringning for at blive låst ind. Der vil dog stå en person og lukke jer ind lidt før mødetidspunktet)

**Program:**

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Dato og tid</th>
<th>Tematik</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop 1</td>
<td>6. juni 2016 kl.</td>
<td>• Præsentere fund fra eksisterende praksis</td>
</tr>
<tr>
<td></td>
<td>8.30-11.30</td>
<td>• Fremstilling af personcentrerede principper samt bud på praktiske eksempler</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Drøfte behov og afklare egen ”forandringsparathed”</td>
</tr>
<tr>
<td>Workshop 2</td>
<td>16. juni 2016 kl.</td>
<td>• Udvikle og prioritere ideer på baggrund af input fra ph.d.-</td>
</tr>
<tr>
<td></td>
<td>12.30-15.30</td>
<td>- studerende Vibeke Stenov</td>
</tr>
<tr>
<td>Workshop 3</td>
<td>1. september kl.</td>
<td>• Diskutere dilemmaer fra praksis</td>
</tr>
<tr>
<td></td>
<td>8.30-11.30</td>
<td>• Udvikle og prioritere konkrete ideer</td>
</tr>
</tbody>
</table>

**Forplejning:**
Under formiddagens workshops vil der blive serveret et let morgenmåltid
Under eftermiddagens workshop vil der blive serveret et let frokost

Jeg glæder mig meget!

Vel mødt,
Vibeke Stenov
Ph.d.-studerende, Kandidat i kommunikation & psykologi, sygeplejerske
**VIL DU VÆRE MED TIL AT UDVIKLE OG AFPRØVE PERSONCENTREREDE METODER INDFOR GRUPPEBASERET PÆDIALDIABETESVIDENSKAB MED MÅLRETETTE TYPE 2 DIABETES?**

**PROJEKTETS FORMÅL**
Formålet med projektet er at udvikle nye personcentrerede metoder sammen med sundhedsprofessionelle, der varetager gruppebaseret diabetesuddannelse. Projektet har fokus på, at udvikle kompetencer og metoder, der fremmer en "facilitator-rolle". Projektet er et samarbejde mellem Steno Diabetes Center, Professions-højskolen Metropol og Københavns Universitet.

**MENNESKER MED TYPE 2 DIABETES Oplevelser af Diabetesuddannelse**
"Underviseren ved hvad hun gør, men hun er ikke rigtig god til at formidle. Fordi mange gange, når de kommer med den der løftede pegefinger, så bliver du sgu sur" (V. Stenov-unpublished, 2015).

"Altså, hun havde sit fagsprog hun kørte i. Hun var for meget ekspert og for lidt pædagog. Det synes jeg var direkte... forkasteligt" (V. Stenov-unpublished, 2015).

**INTERVIEW MED SUNDHEDSPROFESSIONELLE OM ERFARINGER MED PERSONCENTRERING INDEFOR DIABETESUDDANNELSE**
"Det handler meget om, at vi skal se de der små ting patientene siger og gribe fat i dem, og det gør man altså kun, hvis man er en øvet underviser" (V. Stenov-unpublished, 2015).

"Jeg er nok blevet meget bedre til at lægge alt det her undervisningsmateriale lidt til side, og så ligesom mærke efter, hvor er det her hold, og hvad for nogle problematikker, der optager dem og så søge for, at det er der fokuser. Jeg var måske lidt famlende i starten, men jo flere gange man underviser, jo flere år man har prøvet det og jo mere uddannelse man har fået - jo bedre synes jeg også selv, jeg er blevet" (V. Stenov-unpublished, 2015).

**DIN ROLLE**
Et tværfagligt samarbejde gennem 3 workshops på 3 timers varighed i perioden maj-august 2016

**FORLØB FOR WORKSHOPS**

Workshop 1: Behovsafdækning (afholdes maj, 2016)

Workshop 2: Idégenerering (afholdes juni, 2016)

Workshop 3: Udvikling (afholdes august, 2016)

**KONTAKTPLYSNINGER:**
Vibeke Stenov
Sygeplejerske, Kandidat i Psykologi & Kommunikation, Ph.d.-studerende
Maill: vste@phmetropol.dk
Tlf.: 72487369
APPENDIX 9.5
Declaration of co-authorship, article I

GRADUATE SCHOOL OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

DECLARATION OF CO-AUTHORSHIP

<table>
<thead>
<tr>
<th>Information on PhD student:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of PhD student</td>
</tr>
<tr>
<td>E-mail</td>
</tr>
<tr>
<td>Date of birth</td>
</tr>
<tr>
<td>Work place</td>
</tr>
<tr>
<td>Principal supervisor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title of PhD thesis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-centered methods in group-based diabetes self-management education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>This declaration concerns the following article:</th>
</tr>
</thead>
<tbody>
<tr>
<td>An ethnographic investigation of healthcare providers' approaches to facilitating person-centredness in group-based diabetes education.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The PhD student's contribution to the article:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(please use the scale (A,B,C) below as benchmark*)</td>
</tr>
<tr>
<td>1. Formulation/identification of the scientific problem that from theoretical questions need to be clarified. This includes a condensation of the problem to specific scientific questions that is judged to be answerable by experiments</td>
</tr>
<tr>
<td>2. Planning of the experiments and methodology design, including selection of methods and method development</td>
</tr>
<tr>
<td>3. Involvement in the experimental work</td>
</tr>
<tr>
<td>4. Presentation, interpretation and discussion in a journal article format of obtained data</td>
</tr>
</tbody>
</table>

*Benchmark scale of the PhD student’s contribution to the article

A. refers to: Has contributed to the co-operation

B. refers to: Has contributed considerably to the co-operation

C. refers to: Has predominantly executed the work independently

<table>
<thead>
<tr>
<th>Signature of the co-authors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Title:</td>
</tr>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>17-01-2018</td>
</tr>
<tr>
<td>Nana Folmann Hempier</td>
</tr>
<tr>
<td>Professor, Dr. Med.</td>
</tr>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>17-01-2018</td>
</tr>
<tr>
<td>Susanne Reventlow</td>
</tr>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>17-01-2018</td>
</tr>
<tr>
<td>Gitte Wind</td>
</tr>
<tr>
<td>Signature:</td>
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</table>

150
APPENDIX 9.5
Declaration of co-authorship, article I

<table>
<thead>
<tr>
<th>Signature of the PhD student and the principal supervisor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: 17-01-2018</td>
</tr>
<tr>
<td>PhD student:</td>
</tr>
<tr>
<td>Principal supervisor:</td>
</tr>
<tr>
<td>Date: 19.1.2018</td>
</tr>
</tbody>
</table>
# Declaration of Co-Authorship

Information on PhD student:

<table>
<thead>
<tr>
<th>Name of PhD student</th>
<th>Vibeke Stenov</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td><a href="mailto:vibeke.stenov@regionh.dk">vibeke.stenov@regionh.dk</a></td>
</tr>
<tr>
<td>Date of birth</td>
<td>09-02-1978</td>
</tr>
<tr>
<td>Work place</td>
<td>Steno Diabetes Center Copenhagen and Metropolitan University College</td>
</tr>
<tr>
<td>Principal supervisor</td>
<td>Susanne Reventlow</td>
</tr>
</tbody>
</table>

**Title of PhD thesis:**

Person-centered methods in group-based diabetes education: an intervention study investigating, developing, and implementing new approaches

**This declaration concerns the following article:**

The potential of a self-assessment tool to identify healthcare professionals' strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education

**The PhD student’s contribution to the article: (please use the scale (A,B,C) below as benchmark*)**

<table>
<thead>
<tr>
<th>Contribution</th>
<th>(A,B,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Formulation/Identification of the scientific problem that from theoretical questions need to be clarified. This includes a condensation of the problem to specific scientific questions that is judged to be answerable by experiments</td>
<td>C</td>
</tr>
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<tr>
<td>3. Involvement in the experimental work</td>
<td>C</td>
</tr>
<tr>
<td>4. Preparation, interpretation and discussion in a journal article format of obtained data</td>
<td>C</td>
</tr>
</tbody>
</table>

*Benchmark scale of the PhD student’s contribution to the article*

- A. refers to: Has contributed to the co-operation 0-33 %
- B. refers to: Has contributed considerably to the co-operation 34-66 %
- C. refers to: Has predominantly executed the work independently 67-100 %

**Signature of the co-authors:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Title</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>05-01-2018</td>
<td>Gitte Wind</td>
<td>Docent</td>
<td></td>
</tr>
<tr>
<td>05-01-2018</td>
<td>Timothy Skinner</td>
<td>Proff.</td>
<td></td>
</tr>
<tr>
<td>05-01-2018</td>
<td>Susanne Reventlow</td>
<td>Proff.</td>
<td></td>
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</tbody>
</table>
APPENDIX 9.5
Declaration of co-authorship, article II

<table>
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<th>Year</th>
<th>Date</th>
<th>Name</th>
<th>Position</th>
</tr>
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<tbody>
<tr>
<td>2018</td>
<td>5-01-2018</td>
<td>Nana Folmann Hempler</td>
<td>Senior researcher</td>
</tr>
</tbody>
</table>

Signature of the PhD student and the principal supervisor:

**PhD student:** Ulla Holm    
**Date:** 5-01-2018

**Principal supervisor:** Simon Reventlow    
**Date:** 19-1-2018
**APPENDIX 9.5**  
Declaration of co-authorship, article III

**GRADUATE SCHOOL OF HEALTH AND MEDICAL SCIENCES**  
**UNIVERSITY OF COPENHAGEN**

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## DECLARATION OF CO-AUTHORSHIP

<table>
<thead>
<tr>
<th>Information on PhD student:</th>
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<tbody>
<tr>
<td>Name of PhD student</td>
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<thead>
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<th>This declaration concerns the following article:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitation of group-based, person-centered diabetes self-management education: Healthcare professionals' implementation of new approaches</td>
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</table>

<table>
<thead>
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<th>The PhD student's contribution to the article:</th>
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<tr>
<td><em>(please use the scale (A,B,C) below as benchmark)</em></td>
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</tr>
<tr>
<td>2. Planning of the experiments and methodology design, including selection of methods and method development</td>
</tr>
<tr>
<td>3. Involvement in the experimental work</td>
</tr>
<tr>
<td>4. Presentation, interpretation and discussion in a journal article format of obtained data</td>
</tr>
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</table>

*(Benchmark scale of the PhD student's contribution to the article)*

- **A.** refers to: Has contributed to the co-operation  
  - 0-33 %
- **B.** refers to: Has contributed considerably to the co-operation  
  - 34-66 %
- **C.** refers to: Has predominantly executed the work independently  
  - 67-100 %

<table>
<thead>
<tr>
<th>Signature of the co-authors:</th>
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<tr>
<td>Date:</td>
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<tr>
<td>Name:</td>
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<td>Title:</td>
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APPENDIX 9.5
Declaration of co-authorship, article III

<table>
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<tr>
<td>05-01-2018</td>
<td>Nana Folmann Hempler</td>
<td>Senior researcher</td>
<td></td>
</tr>
</tbody>
</table>

Signature of the PhD student and the principal supervisor:

Date: 05-01-2018
PhD student: [Signature]

Date: 19.1.2018
Principal supervisor: [Signature]