Patient Preference and Adherence

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ORIGINAL RESEARCH

Empowerment, motivation, and medical adherence (EMMA): the feasibility of a program for patient-centered consultations to support medication adherence and blood glucose control in adults with type 2 diabetes

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Purpose: To explore the feasibility of a research-based program for patient-centered consultations to improve medical adherence and blood glucose control in patients with type 2 diabetes.

Patients and methods: The patient-centered empowerment, motivation, and medical adherence (EMMA) consultation program consisted of three individual consultations and one phone call with a single health care professional (HCP). Nineteen patients with type 2 diabetes completed the feasibility study. Feasibility was assessed by a questionnaire-based interview with patients 2 months after the final consultation and interviews with HCPs. Patient participation was measured by 10-second event coding based on digital recordings and observations of the consultations.

Results: HCPs reported that EMMA supported patient-centered consultations by facilitating dialogue, reflection, and patient activity. Patients reported that they experienced valuable learning during the consultations, felt understood, and listened to and felt a trusting relationship with HCPs. Consultations became more person-specific, which helped patients and HCPs to discover inadequate diabetes self-management through shared decision-making. Compared with routine consultations, HCPs talked less and patients talked more. Seven of ten dialogue tools were used by all patients. It was difficult to complete the EMMA consultations within the scheduled time.

Conclusion: The EMMA program was feasible, usable, and acceptable to patients and HCPs. The use of tools elicited patients' perspectives and facilitated patient participation and shared decision-making.

Keywords: type 2 diabetes, adherence, participation, dialogue, health education, self-management

Introduction

The management of type 2 diabetes mellitus (T2DM) comprises several elements, such as poly-pharmacy including insulin administration, self-monitoring of blood glucose, diet, and physical exercise to prevent or postpone long-term complications.[1] The adherence to prescribed therapies is an important but often neglected issue in the management of T2DM.[2] It is estimated that 20%–50% of patients with chronic conditions such as diabetes are not adherent to their prescribed medication regimen, with non-adherence being defined as <80% adherence to relevant prescribed medication.[3,4]

However, adherence is not just a matter of taking medication; it requires lifestyle changes, knowledge and competence, and internal motivation for self-management. Accordingly, the recommended approach to diabetes management has recently shifted from an emphasis on standardized measures of adherence to an individualized, patient-centered approach.[1] A patient-centered approach is defined 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 (p. 8).[5]

However, little guidance is provided as to how health care professionals (HCPs) should accomplish this in a clinical setting.[6]

Studies indicate that patient–provider collaboration can be enhanced by HCP use of educational material and communication skills training and patient use of notes about their concerns that provide specific information about disease and attention to emotion.[7,8] It is also suggested that decision aids or tools that help to involve patients in shared decision-making may facilitate patient-centered care.[9,10]

We developed a patient-centered consultation program based on dialogue tools – EMMA (for empowerment, motivation, and medical adherence). It aims to support medication adherence and blood glucose control by facilitating rapport, exploring patient concerns and challenges, enabling knowledge exchange, and supporting goal setting and action planning. EMMA's effect on glycemic control is reported elsewhere.[11] We report here the results from a feasibility study investigating the perspectives of patients and HCPs.

Theoretical framework

The theoretical framework for the EMMA program builds on three key concepts: empowerment, motivation, and medical adherence.

Empowerment

The EMMA program is based on the empowerment philosophy, an alternative to the pathogenic paradigm.[12] Funnell et al have defined the process of empowerment as:

> […] the discovery and development of one's inborn capacity to be responsible for one's own life. People are empowered when they have sufficient knowledge to make rational decisions, sufficient control and resources to implement their decisions, and sufficient experience to evaluate the effectiveness of their decisions.[12]

Empowerment is a patient-centered collaborative approach tailored to match the fundamental realities of diabetes care. The aim of the EMMA program is to facilitate a process supporting patients' abilities to think critically about the way they live with T2DM and to act autonomously. EMMA is intended to help patients make informed choices about how their lives should be organized with the best possible self-management.[13]

Motivation

Motivation is the driving force underlying the wish to change behavior. Inner motivation is driven by one's needs, values, and feelings, whereas external motivation is driven by other people, material goods, penalties, or benefits. People are more likely to work toward goals they set for themselves if behavioral change is driven by inner motivation. EMMA provides tools intended to facilitate inner motivation and focus on identifying patients' individual needs, values, and feelings. Patients have the experience of making choices, using available information to make decisions according to self-selected goals.[14]

Medical adherence

Medical adherence has largely replaced the passive notion of compliance and is defined as:

> The extent to which a person's behavior – taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health-care provider.[15]

EMMA aims to improve adherence by providing support for concordance in practice and by boosting patients' experiences of the comprehensibility, meaningfulness, and manageability of treatment. The term concordance relates to a consultation process in which prescribing is based on shared decision-making between patient and HCP.[16] Concordance is defined as:

> Agreement between the patient and health care professional, reached after negotiation that respects the beliefs and wishes of the patient in determining whether, when and how their medicines is taken, and (in which) the primacy of the patient's decision (is recognized).[17]

Patients and methods

Developing the program

This study was approved by the Danish Data Protection Board and ethics committee, and participant consent was obtained. The program was developed using an action research methodology. A collective learning and development process in cooperation between theory and practice was performed

from February 2011 to August 2011.[18] Two health education scientists with backgrounds in user-driven innovation and drug management (GE and AV) and two physicians (GA and FP) and a diabetes nurse (LJ) from a specialist diabetes clinic in Denmark participated. The health education scientists were the primary developers of EMMA, but results were discussed and elaborated in the entire group. The process involved multiple workshops using methods such as ideation, prototype development, and role playing. To facilitate patient participation during consultations, dialogue tools were designed to explore specific challenges for medication adherence, perform medical review,[19] and facilitate interactive learning and goal-setting and action-planning processes. The dialogue tools included visual and tangible materials such as pictures, peer quotes, questions, illustrations, and worksheets. The idea of using dialogue tools during consultations was inspired by the methodology of cultural probes that encourage participants to reflect, engage in dialogue, and verbalize their experiences and to encompass a variety of patient learning preferences.[20,21] The theoretical building blocks of the EMMA program can be explained as consisting of the why, the what, and the how as shown in Figure 1. The overall theoretical framework of EMMA builds on empowerment, motivation, and medical adherence and explains why the EMMA program is important. To operationalize these concepts into a concrete consultation-based program, the "five-step empowerment model of goal setting"[22] formed the basis for the structure of the EMMA program. This involved a step-by-step process encompassing problem identification, problem elucidation, goal setting and exploration, action planning, and finally follow-up describing what steps the EMMA program consists of. And finally, in order to describe how the patient-centered consultations should play out in practice, selected theories, models, and methods relevant for health behavioral change were applied in developing dialogue tools for each step.[23] The dialogue tools thus apply elements from different methods, models, and theories such as the WHO model of five dimensions of adherence,[15] the health belief model,[24,25] the transtheoretical model of change,[26] self-efficacy theory,[27] narratives,[28] and motivational interviewing.[29] The development of dialogue tools was also inspired by education material from the DESMOND Programme (eg, discussing blood glucose management by inviting the patient to point out their own level of blood glucose on a continuum) and by the Danish Diabetes Association (eg, illustrating the pathophysiology of diabetes on a human-like figure with the use of icons).[30,31] Furthermore, one tool ("My Challenges") applies the WHO model of five dimensions of adherence. Table 1 lists the flow of the program including theme and purpose of the included tools. A full description of the entire program and all tools with regard to methodology, anticipated mode of action, and intended outcome is available elsewhere.[32] One patient pre-tested and provided feedback on the content and format of the first consultation prior to the initiation of the feasibility study.

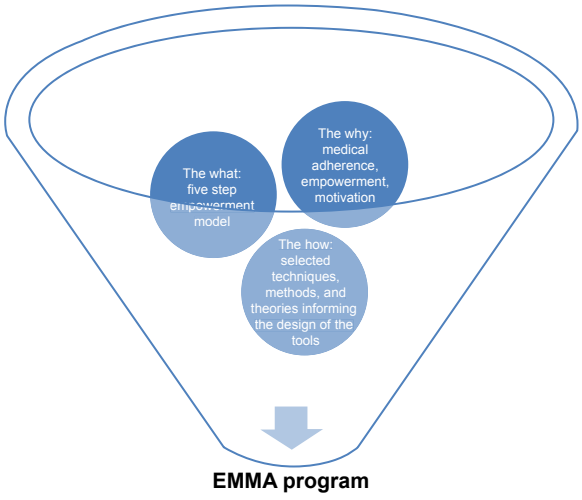

Figure 1 "The why", "the what", and "the how" of the EMMA program. The overall theoretical framework describes why the EMMA program is important, the five-step empowerment model describes what steps the EMMA program consists of, and the selected techniques, models, and theories describe how the EMMA approach is operationalized into specific dialogue tools.
Abbreviation: EMMA, empowerment, motivation, and medical adherence.

The EMMA program

The program consisted of a process of three one-to-one consultations with the same HCP (nurse or physician) to ensure continuity. Approximately 4 weeks elapsed between the first and second consultations, and 6 weeks elapsed between the second and third consultations. A follow-up phone call was conducted between the second and the third consultation. The first two consultations were scheduled to last 45 minutes; the third lasted 30 minutes.

The main focus of the program is to explore and resolve challenges patients may have with implementing prescribed medication and in obtaining good glycemic control.

Study sample

Twenty-two Danish-speaking adult patients at a Danish specialist diabetes clinic accepted the invitation to participate in the feasibility study. They were 49–85 years of age, had T2DM, glycosylated hemoglobin A1c of ≥64 mmol/mol (8.0%), and medication possession rate of ≤80%.[10] Sixteen were male.

One diabetes nurse (8 years of experience) and one physician (3 years of experience) who had participated in the development and training process of the EMMA program conducted

Table 1 Flow of program content and tools across sessions

Name and theme	Purpose and description
Consultation 1	
"My Day" Patient story about everyday life with diabetes	*Purpose*: To provide HCP with relevant and important information with regard to the everyday life of patients *Tool*: A sheet with a rough timeline of 24 hours framing "the patient" in the center with space for notes
"My Medication" Medication review	*Purpose*: • To identify and correct discrepancies between medication taken by patients and what is stated on their medication lists • To identify and rectify misunderstandings and errors with respect to taking medication • To assess whether the medication regimen could be optimized with regard to efficacy, adverse reactions, and convenience for individual patients • To clarify what patients know about their medication (eg, indications, mechanism, administration, and adverse reactions) *Tool*: A sheet with a rough timeline of 24 hours framing "the patient" in the center with space for notes
"My Use of Medication" How patients view medication adherence	*Purpose*: • To obtain patient-assessed levels of adherence and its importance • To talk about perspectives and attitudes on medication use *Tool*: A scale to mark level of medication use and the importance of taking medication
"My Challenges" Challenges patients' experience	*Purpose*: To explore individual challenges and barriers in relation to living with T2DM and the treatment regimen *Tool*: 36 cards with pictures and quotations illustrating or expressing different challenges. A compiled list with all cards to mark patient's selection
First consultation ends with summary and invitation to fill out the "postcard" tool as homework	
Between 1 and 2	
"Postcard" Challenges patients' experience	*Purpose*: To encourage patients to reflect daily on their lives and the challenges of living with diabetes *Tool*: "Postcard" to write down reflections and experiences of living with diabetes
Consultation 2	
"Follow-up" Summarize challenges and identify focus for further work	*Purpose*: • To follow-up on the first consultation, the "Postcard" tool, and resulting reflections • To summarize patient challenges and concerns • To identify focus for further work during consultations *Tool*: A sheet to summarize concerns and challenges and identify a selected challenge for further work
"Scrapbook" Worksheets to support knowledge exchange	*Purpose*: To promote relevant knowledge exchange in relation to T2DM through interactive learning exercises *Tool*: Fifteen worksheets with illustrations, questions, and scales addressing different themes: blood sugar control, symptoms of high and low blood sugar, treating type 2 diabetes, medication overview, insulin treatment, long-term complications of diabetes, and support from network. They support patients in understanding their disease, treatment, and situation and enable HCPs to tailor communication to individual patients' needs
"Goal and Plan" Goal setting and action planning	*Purpose*: • To identify an attractive and realistic goal and plan action steps to reach it • To explore barriers, facilitators, and support in relation to achieving the goal *Tool*: Sheet to write down goal and action plan
"Importance and Confidence" Explore readiness in relation to goal setting and action planning	*Purpose*: To promote patient reflection on the importance of achieving the goal and their confidence in being able to do so. If patient considers the goal unimportant or unrealistic, then it is adjusted or changed. *Tool*: 0–10 scales indicating importance of reaching goal and confidence in ability to do so
Second consultation ends with summary and invitation to do homework of explaining to a relative what the patient has learned	
Between 2 and 3	
Phone call Follow-up	*Purpose*: To follow-up on progress toward goals and provide support and motivation and adjust goals as needed
Consultation 3	
"Advantages and Disadvantages" Explore ambivalence and adjust goal and plan	*Purpose*: To explore goal-related ambivalence to provide support and enhance motivation by emphasizing advantages and/or identify need for adjustment *Tool*: Sheet to record advantages and disadvantages of present situation and advantages and disadvantages of reaching goal
Third consultation ends with adjustment of goal and plan, as needed, and summary	

Abbreviations: HCP, health care professional; T2DM, type 2 diabetes mellitus.

the consultations, assisted by comprehensive step-by-step guidelines outlining the purpose and process of each tool.[32]

Data collection

Data were collected between June 2011 and September 2012.

Feasibility of EMMA

The methods for assessing feasibility were inspired by Bowen et al's work and we focused on the acceptability, practicality, and implementation of the program.[33] Data collection to assess the feasibility of the EMMA program was guided by the elements in Table 2 (eg, the implementation of tools, the experience of patients and HCPs of the consultation process). The following data collection methods were used: materials from consultations, interviews with patients based on questionnaires, interviews with HCPs, and 10-second event coding as described in sections Materials from consultations, Interviews with patients based on questionnaires, Interviews with HCPs, and Ten-second event coding.

Materials from consultations

The tools used in the consultations were given to the patients after each consultation and a copy of the material was kept by HCPs.

Interviews with patients based on questionnaires

Two months after their last consultation, patients completed a questionnaire as part of face-to-face interviews using a semi-structured interview guide. The purpose was to investigate patients' experience and appraisal of the consultation process and outcomes (Table 2). The two health education scientists constructed the questionnaire in accordance with the theoretical foundation of the program, building on elements from the five-step empowerment model, and the concordance-facilitating strategy.[15,21] The questionnaires used four-point Likert scales ranging from "very important" to "not important" or from "to a very large extent" to "to a small extent". An example question was "Did you get relevant support in regard to living with diabetes?". Two patients filled in the questionnaires immediately after their last session to guide the development of the final questionnaire.

Interviews with HCPs

The nurse and the physician were interviewed 7 months after completing their first consultation. In the interviews, we explored the acceptability, practicality, and implementation of the program from the HCPs' point of view and probed specifically about the challenges and barriers experienced to inform the development and refinement of the program

Table 2 Key areas of focus for the feasibility study of the EMMA program related to acceptability, practicality, and implementation

Tools/exercises	Consultation process	Patient-centered outcomes
	Patient-reported outcomes	**Patient-reported**
Active use of dialogue tools and exercises throughout consultations • Exercises performed as scheduled • Relevant worksheets completed	• Patients feel understood • Patients feel listened to • Patients feel trusting relationship with the HCP • Patients feel that focus was on important issue(s) • Patients experience that difficult issues were articulated • Patients feel encouraged to reflect more on having diabetes • Patients feel active and contributing during the sessions • Patients feel active in decision-making • Patients feel active in goal-setting process regarding the treatment	• Patients obtain clarity on situation and possibilities • Patients obtain valuable learning they can use in practice • Patients get relevant support in relation to living with diabetes • Patients get concrete ideas and suggestions • Patients obtain improved diabetes self-management capabilities • Patients follow the goal and plan
	HCP reported outcomes	
	• HCPs feel at ease using the tools and exercises in conducting the consultations • HCPs feel supported in exploring challenges of the patients • HCPs feel supported in working with learning process of the patients • HCPs feel supported in goal-setting process with the patients	
	10-second event coding	
	• Patients talk as much as HCPs during the consultations	

Abbreviations: EMMA, empowerment, motivation, and medical adherence; HCP, health care professional.

(Table 2). Interviews included open-ended questions about how they experienced the different tools and how they felt supported in terms of exploring patients' challenges, knowledge sharing, and shared goal setting and decision-making. They were also asked how many times they had to use the tools before they felt confident in using them. The two interviews lasted 69 and 51 minutes and were digitally recorded.

Ten-second event coding

A researcher was present during consultations to assess patient participation using 10-second event coding to measure the ratio of patient and HCP talk.[34] We perceive the talk ratio to be indicative of the feasibility of the program as one of several indicators for patient-centered patient education.[35] Every 10 seconds, the researcher noted whether the patient or the HCP was talking or if silence was occurring.

Routine consultations in January 2013 with 21 patients with T2DM (hemoglobin A1c ≥64 mmol/mol [8%]) were digitally recorded and assessed by 10-second event coding to serve as controls. Consultations lasted an average of 27 minutes (range: 11–47 minutes) and were conducted by HCPs who did not participate in EMMA.

Data analysis

Implementation of tools in consultations and examples of output

Tool implementation and examples of patient output were analyzed by inspecting the copied dialogue tools and examining the recordings of consultations.

Analysis of questionnaires

We assessed patient-reported experiences of selected parameters of consultations in relation to their rating of the importance of those parameters, comparing the number of patients reporting they experienced a parameter to a large or very large extent with the number of patients rating it as very important or important. Achieved competencies were assessed by patients. The extent to which they followed the goal and plan 2 months after their final session was calculated as the number of patients who responded "to a very large" or "to a large extent" and the number of patients who responded "to some extent" or "to a small extent".

Insights from the interviews with HCPs

Interviews were analyzed in accordance with the key elements in Table 2 (eg, whether HCPs felt at ease using the tools and whether they felt supported in goal-setting processes) to gain insight into the feasibility and usability of the specific tools and the entire program from the perspective of the HCPs.

Analysis of 10-second event coding

For each consultation, the ratio between patient talk and HCP talk was calculated as the number of coded events representing patient *or* HCP talk divided by the total number of events representing patient *and* HCP talk. For periods during EMMA consultations in which specific dialogue tools were used, talk ratios were calculated as the number of coded events representing patient or HCP talk divided by the number of all coded events (HCP and patient talk and silence). These calculations also include silent time ratios. The statistical significance of differences in average talk ratios in EMMA and control consultations was calculated using Student's *t*-test (SAS 9.2).

Results

Study sample and duration of sessions

Nineteen patients finished the program. In all, three patients dropped out of EMMA due to severe illness (n=2) and referral to a lifestyle clinic (n=1). The mean age of patients completing the program was 68.3 years; 13 were men. The average duration of the first, second, and third consultations was 49 minutes (range: 37.7–77.3), 64 minutes (42.5–106.9), and 34 minutes (23.0–59.9), respectively, with a trend toward shorter consultations as the study progressed and HCPs gained more experience using the tools.

Use of tools

The content of the EMMA program was conducted as planned. The dialogue tools were implemented throughout the consultations and seven out of ten tools were used by all patients. The results and example outcomes are presented in Table 3.

Patient experiences

The majority of participants felt understood and listened to and felt a trusting relationship (16 (94%), 17 (100%), and 16 (94%) participants, respectively), and they also rated these parameters highly in terms of importance (Figure 2). Fourteen (82%) participants reported that they felt encouraged to reflect more on having diabetes, nine (53%) reported that they achieved more clarity regarding their situation and possibilities, and eleven (65%) felt that difficult issues were articulated. Feeling encouraged to reflect more on having diabetes and achieving more clarity on their situation and possibilities were also rated as important (by 16 (94%) and 17 (100%), respectively). With regard to the articulation of difficult issues,

Table 3 Overview of dialogue tool use

Tool	% of patients with whom HCPs used tool	Outcomes
"My Day"	100%	–
"My Medication"	100%	45%, discrepancies between medications taken and prescribed 36%, dosage mistiming either unintended or due to outdated prescription
"My Use of Medication"	100%	50%, persistent non-adherence to a single medication or unintentional omission of dosages of different drugs
"My Challenges"	100%	Average number of cards selected: 6 (range: 0–10) Most frequently selected challenges: 63%, not feeling ill 47%, anxiety about hypoglycemia 37%, concern about medication side effects 37%, concern about too many medications at once 37%, forgetfulness
"Postcard"/summarize challenges	100%, tool and follow-up challenges addressed 42%, completed postcards	Overall themes: Concerns about medication and disease management; concerns about long-term complications; emotional burden
Educational exercise(s)/"Scrapbook"	47%, one exercise 32%, ≥ two exercises 21%, zero exercises	–
"Goal and Plan"	100%	Primary goal: 68%, glycemic control 21%, weight loss
"Importance and Confidence"	74%	–
"Advantages and Disadvantages"	26%	–

Note: – Not possible to summarize outcomes.
Abbreviation: HCP, health care professional.

13 (76%) participants found it to be important. With respect to participation (questions 8, 9, and 10 in Figure 2), one (6%) participant did not report concordance between experience and importance for general participation and contribution. Three (18%) and four (24%) participants expressed inconsistency between their experience and the importance of decision-making and goal-setting processes, respectively.

Almost all participants reported obtaining valuable learning they could use (Figure 3). However, in terms of more concrete achievements, such as getting ideas and suggestions

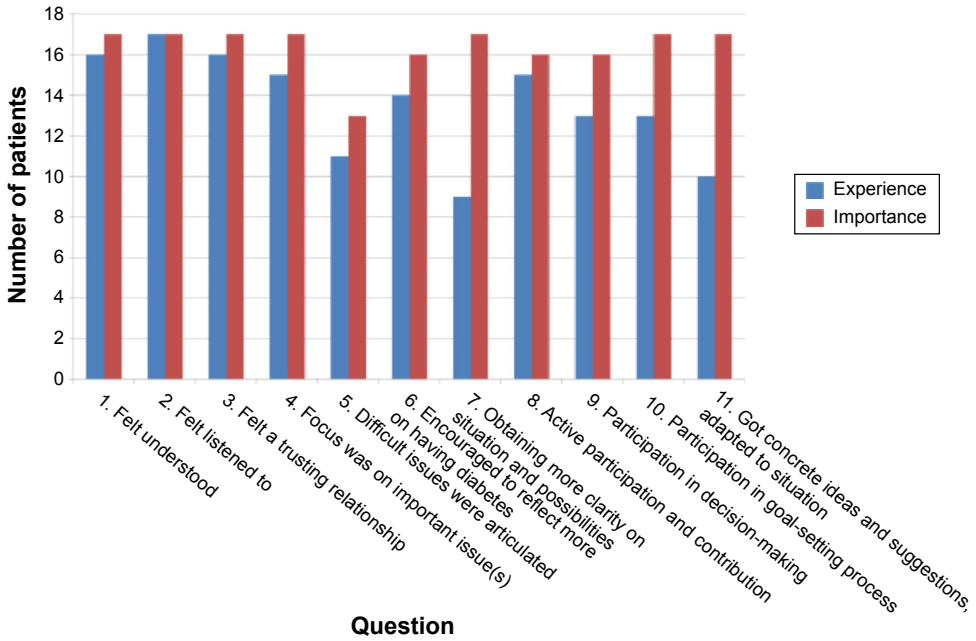

Figure 2 Patient ratings of experiences and importance of consultation parameters (N=17).

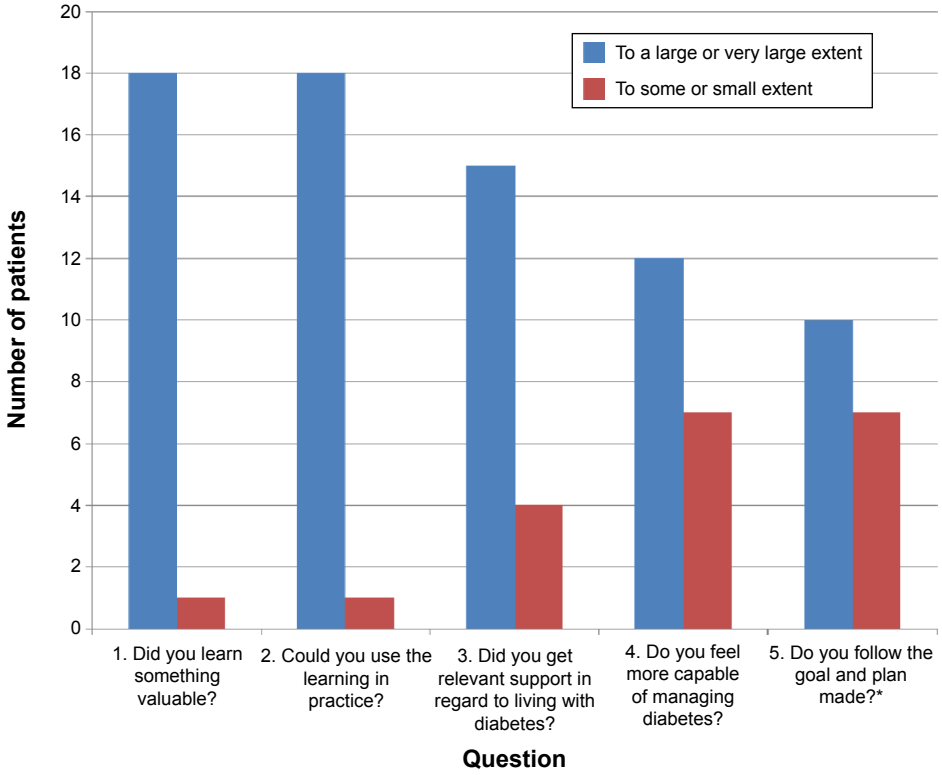

Figure 3 Patient assessment of EMMA intended outcomes (N=19).
Note: *N=17.
Abbreviation: EMMA, empowerment, motivation, and medical adherence.

adapted to their specific situation (Figure 2) and feeling more capable in managing diabetes (Figure 3), ten (59%) and 12 (63%) patients agreed.

All patients identified a goal (Table 3). Two months after their final session, ten (59%) participants stated that they followed the goal and plan to a high or very high extent.

HCP experiences

HCPs felt confident in conducting the first consultation after their initial three patients. One HCP expressed the need for more training to become confident in using the tools for the second consultation.

> I needed to get some hands-on experience with the tools and also to see them in use. [quote from HCP]

Furthermore, taking notes in connection to the use of tools was unfamiliar to one HCP, who needed more practice. The HCPs reported that most patients became active participants during the consultation and expressed that, in general, they felt the tools were usable and feasible and ensured a patient-centered approach while guiding the flow of visits.

> I feel that I got to know the patients better than what I remember from usual consultations. [quote from HCP]

However, both HCPs expressed concerns about working with the "goal and plan" tool for some patients. One HCP reported that for less motivated patients, the final goal was often defined by the HCP, not by the patient. The other HCP would have liked to be more proficient at challenging patients to engage in the goal-setting process. Generally, HCPs experienced a lack of communication skills that would have allowed them to avoid taking control during consultations with unmotivated patients. Both HCPs found it difficult to complete the consultations within the scheduled time due to the number of tools allocated to each consultation and because the tools were new to the HCPs.

Patient and HCP talk ratios

Talk ratios supplemented qualitative assessments by patients and HCPs. Table 4 shows the average talk ratios for each of the three EMMA consultations, the total EMMA program, and control consultations. On average, HCPs talked 48% of the total talk time during EMMA consultations, compared with 54% during routine consultations. The average HCP talk ratio for the first, second, and third consultations was 42%, 53%, and 50%, respectively. When talk ratios were examined for specific tools, wide differences were found (data not shown). The HCP talk ratio ranged from 22% for "My Day", in which patients were invited to talk about a typical day with diabetes

Table 4 Average talk ratios

	Average HCP talk ratio, % (range) of total talk time	EMMA consultation compared with control, *P*-value
EMMA		
Consultation 1	42 (14–60)	0.002
Consultation 2	53 (40–75)	0.722
Consultation 3	50 (28–76)	0.242
Total	48 (14–76)	0.059
Control consultations		
Total	54 (29–72)	

Note: Silent time is excluded.
Abbreviations: EMMA, empowerment, motivation, and medical adherence; HCP, health care professional.

to 47% for the goal-setting exercise, and 53% while working with diabetes education tools in the second consultation. The amount of silent time also differed substantially, depending on the amount of writing and reflection related to each tool. The silent time ratio was especially high for the tool "My Challenges" (23%), due to the time spent selecting cards.

Discussion

In an effort to rethink medical adherence from a patient-centered perspective, we explored the feasibility of a research-based consultation program using dialogue tools to improve medication adherence and blood glucose control in patients with T2DM. Overall, patients and HCPs found the EMMA program to be feasible and usable, and the dialogue tools were highly used in consultations. The HCPs reported that the tools supported patient-centered consultations by facilitating dialogue, reflection, and patient activity. Patients reported that they obtained valuable learning during consultations, felt understood and listened to, and felt a trusting relationship with the HCPs.

To assess the extent to which EMMA facilitated patient-centered consultations, we triangulated data from different sources. One source was the degree of patient talk in the consultations as assessed by 10-second event coding described by Skinner et al.[31] We included this assessment as an indicator of patient participation. According to Roter et al, patients generally talk less than do physicians (40% vs 60%), although less HCP talk has been associated with a greater improvement in participants' knowledge about diabetes.[31,34] The average HCP talk ratio during EMMA consultations was 48%, whereas control consultations had an HCP talk ratio of 54% (P=0.059).

Roter et al also point out that reports on the distribution of patient and HCP talk throughout consultations are lacking.[34] Consequently, we calculated separate talk ratios for the first, second, and third consultations and for selected tools (Table 4). Skinner et al suggested that the maximum standard proportion of educator talk should be 40%–65%, depending on the theme of the session.[31] For patient stories, the standard for educator talk is 40%, while the standard for educator talk is 65% for professional stories and 50% for goal setting.[31]

Overall, the talk ratios of the specific sessions in EMMA are very consistent with targets suggested by Skinner et al. For the first EMMA consultation, in which all tools focus on exploring patients' challenges and daily life with diabetes and medication, the HCP ratio was 42%, close to Skinner et al's suggested standard for patient stories. In the second EMMA consultation, consisting of educational exercises with more learning-intensive tools that are comparable to Skinner et al's professional stories, the HCP talk ratio was 53%. For the goal-setting exercise in the same consultation, the share of HCP talk was 47%, which is close to Skinner et al's suggested standard of 50%.[31]

The HCP talk ratio of the first EMMA consultation is significantly lower than the average HCP talk ratio of the control visits and much lower than HCP talk ratios of the second and third EMMA consultations, leading to an average EMMA HCP talk ratio that approaches a statistically significant decrease from the control consultations (0.059). While the control consultations have a rather low HCP talk ratio of 54%, compared with the typical 60% described by Roter et al,[34] the EMMA average HCP talk ratio of 48% is even lower. We attribute this, at least in part, to the structured flow facilitated by the tools that provide room for the patient story. However, Skinner et al's study was based on group sessions and the EMMA program is based on one-to-one consultations; Skinner et al's suggested targets may not be entirely applicable to our findings. Future research could explore correlations between participation as measured by the talk ratio and both medication adherence and blood glucose control.

However, talk time only indicates who is doing the talking and does not address talk quality or content. Another data source was the assessment of patients' experience and appraisal of the consultation process and patient-centered outcomes in the questionnaire-based interviews. Almost all patients in EMMA felt a trusting relationship with HCPs. Trust has been suggested as an important determinant in patient–provider communication, and it has been related to an enhanced patient desire to participate.[36,37] In EMMA, trust may be promoted by the initial exercise "My Day", which elicits patients' perspectives at the beginning of the program. This could relate to patients' high ratings of feeling understood and listened to and experiencing a focus on issues that were important to them. Although this dialogue tool might seem time consuming, it forms a foundation for later collaboration and shared decision-making to establish an optimal treatment plan in keeping with a patient-centered approach.[5]

The patient assessment supports the high degree of patient participation revealed by 10-second event coding; 15 of 17 patients reported that they participated and contributed actively in EMMA consultations. Fewer patients (13 of 17) reported participating to a high or very high degree in the goal-setting process, which is confirmed by the experience of the HCPs. They felt that they either took too much control of the process or did not challenge unmotivated patients to engage in goal setting. The fact that the goal-setting process did not work with all patients may also be illustrated by the fact that ten of 17 patients stated that they continued to pursue the goal and plan 2 months after program completion. We conclude that, although the EMMA program works in terms of creating rapport and giving voice to patients, room for improvement exists in terms of achieving patient-centered support in goal setting and planning with all patients.

Limitations and strengths of the study

Some limitations of this study merit consideration. First, the consultations lasted much longer than planned, which limits program feasibility. This likely indicates that too many tools were allocated for each consultation or more training in using the tools is needed before the start of the program. An option is to allow patients to prepare by giving them the tools before and between consultations. Another limitation relates to the study design. Collection of data over time or the inclusion of a control group could have increased the validity of the results in terms of patient assessment and outcomes.

Strengths of the study include transparency about the theoretical foundation of the program, an element that is often missing.[8,38] It is also a strong point that, despite its relatively small size and scope, the study involves many different data sources and the triangulation of these data. Finally, it is a strength that the tools use different learning styles and preferences, such as visual and tangible methods for reaching vulnerable patients needing extra resources and support.

Modifications based on the feasibility study

The feasibility study gave rise to a revised version of the tools, based on the feedback from patients and HCPs.[39] Some tools were simplified by, for instance, being made more interactive (and less susceptible to writing preferences/training) through the use of icons to illustrate biological symptoms and processes. The program format was revisited based on the time pressure experienced by HCPs. Finally, the entire program was formatted by a graphic designer to create an attractive uniform presentation.

Implications for practice

The EMMA program and, in particular, the EMMA tools guide HCPs in achieving an individualized, patient-centered approach to diabetes management with the ultimate goal of improving medical adherence and blood glucose control in patients with T2DM. However, HCP adherence to the program is not simply a matter of applying the tools. Hulvej Rod et al have coined the term "the spirit of the intervention" to describe the intangible "something" that constitutes the social effectiveness of an intervention (p. 303).[40] In this context, the spirit of the EMMA program is largely synonymous with the patient-centered approach built into the tools. However, the feasibility study showed that, although dialogue tools are useful in facilitating patient participation, they are not sufficient for achieving a patient-centered approach. Therefore, adequate communication skills training for HCPs is an important part of being able to practice the EMMA program. This is especially important for patients who are less motivated for changing health behavior and those who are hardly reached by HCPs.

Conclusion

The EMMA program is feasible for patients with T2DM and HCPs, and should be tested for effectiveness in a large-scale study.

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Disclosure

The authors report no conflicts of interest in this work.

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