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Upscaling communication skills training – *lessons learned from international initiatives*

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ABSTRACT

Objective: To collect experiences and to identify the main facilitators and barriers for the implementation process of large scale communication training programs.
Methods: Using a multiple case study design, data was collected from leaders of the individual programs in Australia, Ireland, Austria and Denmark. The RE-AIM framework was used to evaluate the components: Reach, Effectiveness, Adoption, Implementation, and Maintenance of the programs.
Results: The programs, all based on the Calgary-Cambridge Guide, succeeded in reaching the intended target groups corresponding to between 446 and 3000 healthcare workers. New courses are planned and so far the outcome of the intervention has been investigated in two countries. The fact that implementation, including educating trainers, relies on a few individuals was identified as the main challenge.
Conclusion: Large scale communication training programs based on the Calgary-Cambridge Guide can be implemented and adopted in multiple different healthcare settings across a national health system culture. The importance of standardized trainer education and adaption of the programs to clinical practice was highlighted.
Practice Implications: In order to address the sustainability of the programs and to allow the intervention to scale up, it is important to prioritise and allocate resources at the political and organizational level.

1. Introduction

Communication training programs for healthcare providers (HCP) aimed at improving the competencies and knowledge related to patient-centered care are one of the most frequently used interventions associated with positive health-related outcomes (1–4). Along with the recognition of the challenges in healthcare and the dissemination of The World Health Organisation (WHO) global strategy on integrated people-centred health services (5), there is an increasing demand for evidence-based training programs that can be transferred into clinical practice and equip HCP with the skills required (6).

Around the globe, a variety of different communication skills training models have been used to train HCPs (7). One of them which has been widely translated and is used in the USA, Canada and Europe to teach communication in general practice and specialist environments, at undergraduate and postgraduate levels is the Calgary-Cambridge Guide (8,9). It was developed to provide a structure for analysis and teaching of provider-patient communication, and describes the core evidence-based skills identified for each facet of the interaction with the patient at the different conversation stages (e.g., initiating the session, gathering

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information, providing structure to the consultation, building relationship, explanation and planning, and closing the session) (8). Although the impact of communication skills training on patient outcomes is still scarce (4,10–13) the findings so far are promising. Several effectiveness and efficiency studies have shown that communication skills training based on the Calgary-Cambridge Guide (8) can significantly increase the health professionals' self-efficacy (14–16).

Communication skills training based on that and other guidelines/framework are increasingly being implemented in several countries as post-graduate training (17–19).

In order to gain the most optimal effect of the training in clinical practice, it is important also to consider the context where the implementation takes place and the many factors that influence successful and sustained implementation of knowledge and skills (20,21).

Until now most available literature on HCP communication training describes local programs aimed at a limited group of providers. We know that a crucial component of such programs is to ensure that they incorporate activities to promote transfer of the acquired skills into daily practice (12). Despite this knowledge, implementation of communication programs into clinical practice at scale has been embryonic and less information is available about efforts to make an impact across whole organizations or healthcare systems.

The aim of this study was to collect and analyse experiences and lessons learnt from projects that have initiated large scale communication skills training programs in healthcare

Table 1
Description of the large scale Communication Skills Training (CST) in four countries

CST	Austria	Ireland	Denmark	Australia
Target group	Health professionals in different healthcare settings	All health professionals and healthcare workers in acute hospitals in Ireland	All health professionals and healthcare workers and managers of the departments in one hospital organization	Health professionals, healthcare workers and non-clinical staff in different healthcare settings
Duration of course	On average 17 hours (minimum 8 hours) of experimental sessions and/or workshops over an extended period of time. Impulse workshops: 3 hours	Modules of different durations: ranging from 90 minutes to three hours. Supplementary material available online on Health Services Executive (HSE) website. (www.hse.ie/nhcprogramme)	On average 24 hours (2 + 1 day) over a period of 1 to 2 month Pre-course: prepare a video Healthcare workers: 1 or 2 days (8-16 hours) class time.	SKINDEEP: 2 hours RESPECTS: 4 hours Champions of Change: 8 days Range of resource materials to support learning
Single modules /components	The specific needs and challenges perceived by the participants are combined with basic key competences of healthcare communication (e.g. information sharing).	Module 1: Making Connections. Module 2: Core Consultation Skills. Module 3: Challenging Consultations. Module 4: Communicating with Colleagues and promoting Teamwork.	Mandatory modules : 1. The structure of the dialogue 2. Psychological reactions to somatic disease 3. Video supervision In addition each department could choose 2 of 10 optional course modules Healthcare workers: the same mandatory modules except for video supervision	1.SKINDEEP: skilled introduction & action small changes in communication applicable for each & every interaction 2.RESPECTS: action 5 key skills to ensure that all clinical interactions are consistently person-centred 3.Champions of Change: equip senior staff with skills to teach SKINDEEP and RESPECTS
Implementation *Delivering the program as intended*	To guarantee high quality and consistency a set of ÖPGK-tEACH-standards for certification have been developed for CST, TTT and TTTT. Certified communication skills trainers become members of the trainer network and have to meet defined duties (e.g. implementation of the standards, documentation and reporting of all trainings, withdrawal of certificate in the event of violation of the standards, rules and regulations). Re-certification after 3 years can be achieved if predefined requirements are met. CSTs, TTTs and TTTTs will continue to be evaluated, continuing financing and political support provided.	Participant feedback is collected after each module and is available on request. Feedback is unanimously positive with participants reporting that they have learnt new skills and have enjoyed the training. Quality can be assured at present because the project group is small and the workload is manageable. This may be a challenge however as the program is broadened to include the remaining hospitals and will need to be resourced more substantially going forward.	The education of the TTT and the TTTT is maintained by The Danish Association of Communication in Healthcare who is responsible for the quality and the consistency. The planning of the implementation process at new departments/organisations is maintained in cooperation with Center for Patientcommunication. The Danish Association of Communication in Healthcare has established a network for communications skills trainers with and without certification. Standards for certification of TTT and TTTT have not yet been developed	A major issue is the limited time for the foundation module, 2 hours, and still a relatively short total, 6 (2 + 4) hours, for clinicians. In an Australian context some of the longer programs, 1-3 days away from clinical service delivery, were seen as a major threat to a sustainable intervention. Another key threat to scaling up this intervention is the capacity of the senior facilitators who teach the TTT program; these senior facilitators who are healthcare academics have many 1000s of workshops worth of experience.
Maintenance *Sustained delivery and effectiveness of the initiative.*	Within the Austrian health reform we are aiming at establishing a national competence center for improving healthcare communication under the umbrella of the Austrian Health Literacy Alliance. The main task of this competence center will be to support and coordinate the trainer network and an elected expert committee for communication skills trainings for health professionals.	The program is initiated at a national level by the National Health Services Executive (HSE) which is the national provider of health services in Ireland.	Are cooperating with The Danish Association of Patient Communication on setting new standards and create a common frame of reference for professional patient communication in Denmark. Aimining at getting support and funding for establishment of a National Centre for Patient Communication	In order to enable growth, there is activity to develop a clear process to build a second wave of leading facilitators (TTT) to increase the capacity of the program

organisations, and to identify the main facilitators and barriers for their implementation.

2. Methods

2.1. Program selection and recruitment

For the purpose of this study we selected programs which 1) have implemented large-scale communication skills trainings across entire healthcare organisations or healthcare systems, 2) are based on the Calgary-Cambridge Guide as this model is evidence-based and transferable across multiple professional groups, 3) build on the expert knowledge available within EACH (the International Association for Communication in Healthcare) as one of the main purposes of this association is to translate research evidence on health communication into healthcare teaching, clinical practice and policy (22). Based on these selection criteria, we included four programs which were conducted at hospitals and other healthcare organisations in Australia, Ireland, Austria and Denmark. The first and second author contacted the manager/project leader of each program through e-mail. They were provided with information about the study and invited to participate. All accepted and are co-authors on this paper.

2.2. Design

A multiple case study approach was chosen as a method to explore similar interventions in their specific context (23,24). Data was collected via e-mail correspondence about the training programs and the implementation process from participating leaders of the individual programs (the co-authors) using open-ended questions designed by the first and the last author and e-mail correspondence.

2.3. Participants

All four projects are targeting HCP and other healthcare workers. The specific groups and the numbers are described in Table 3.

2.4. Data-collection

A total of 20 open-ended questions were e-mailed to the authors including questions about 1) the communication skills program, 2) the 'train the trainer' program, 3) the implementation process according to the individual RE-AIM indicators (described below), 4) the challenges and barriers, 5) suggestions for the future.

2.5. Data extraction and synthesis

The RE-AIM planning and evaluation framework is a tool that can be used to comprehensively evaluate both the individual and organisational impact of a program or intervention. RE-AIM is an acronym for the framework's five evaluation components: Reach, Effectiveness, Adoption, Implementation, and Maintenance. The first version of the framework was developed in 1999 (25) and since then it has been developed and advanced over the years as a method used to evaluate public health programming across multiple organisations (26,27).

To get an overview of the individual training program, how they have been implemented, adopted and maintained the collected data from the communication skills programs were categorized by the first author (JA) and presented according to the following RE-AIM indicators:

'Reach' represents the absolute number and proportion of individuals who are willing to participate in a given initiative. It

Table 2
Description of the 'train the trainer' course (TTT) in four countries

'Train the trainer'	Austria	Ireland	Denmark	Australia
Target group	Health professionals with direct patient contact (doctors, nurses, technical and therapeutic HP and professional communication skills trainers)	Senior clinicians (medical and nursing), health professionals administrative / learning and development staff	Health professionals (doctors, nurses, technical and therapeutic healthcare professionals)	Every member of workforce
Duration of course	A total of 393 hours (corresponding to 16 ECTS) 1. 5 in-class courses: 71,25 hours 2. Practical training: 209 hours 3. Homework and peer work: 112,5 hours	A total of 14 hours. Experiential/didactic workshop followed by supervised training on site leading to independent training with support and follow-up	Approximately 64 hours class time and 16- 24 hours homework 1. A recruitment course 2 + 1 day CST course (24 hours) 2. Train the trainer course: 2 + 3 days in class training (40 hours) 3. One supervised education (24 hours)	Approximately 56 hours including 1. Pre-course SKINDEEP 2 hours + RESPECTS 4 hours (pre-requisite) 2. Ongoing professional development healthcare communication: 1 day 3. Delivery of 6 SKINDEEP or RESPECTS sessions per year
Single modules /components	1. In-class courses: teaching skills and structure, experiential communication skills teaching, curriculum development, refresher 2. Practical manual for communication skills trainers 3. Practical training, feedback review for teaching video and curriculum plan, implementation and evaluation of a communication skills training 4. Homework: literature review, preparation/ follow-up work 5. Working together in a national trainer network	TTT programs delivered separately for each of the four modules with roll-out and tailored supervision according to trainers' requirements	In-class course: 1. Learning how communication training via role-play is implemented 2. Practice communication training using role-playing 3. Introduction to video supervision 4. Working with the teacher role according to 2 + 1 day course's various modules	1. Development of own communication skills 2. Development of group facilitation skills for SKINDEEP and RESPECTS 3. Observation and co-facilitation of SKIN DEEP and RESPECTS with an experienced facilitator 4. Opportunity to be observed by experienced facilitator

also indicates the level of representativeness of participants compared to the target population.

'Effectiveness' describes the impact of the intervention or program.

'Adoption' is the absolute number and proportion of settings and intervention staff who are willing to initiate the intervention or program.

'Implementation' refers to the degree to which the intervention or program staff delivers the initiative as intended, as well as the related costs.

'Maintenance' refers to the sustained delivery and effectiveness of the initiative.

Data synthesis included a description of the main findings according to the authors experiences of the challenges and barriers and suggestions for the future.

3. Results

Data describing the individual communication skills training programs are presented below and details about the target group, duration and the content of the training programs appear from Table 1 and 2. Data related to RE-AIM framework is summarised in 3.4 under the headline 'To what extent did we succeed? and unfolded in Table 3.

3.1. Overview of the communication programs

3.1.1. The Austrian program

In Austria, the program is part of a national multi-modal initiative, the Austrian Health Literacy Alliance (28,29).

Based on a national strategy (30), the implementation process started with the development of an evidence-based quality standard for communication skills training (CST) simultaneous with the implementation of a Train the Trainer-program (TTT) in 2018.A group of 19 healthcare professionals and communication experts were trained to become trainers and have started to offer CST as experiential sessions and/or workshops for health professionals in various healthcare settings. A group of simulated patients has been recruited and trained for CST and TTT. The project group have started to further qualify a selected group of experienced communication trainers for implementing TTTs as teaching trainers, to train new trainers.

The program has been financed by the Austrian Social Insurance and the Federal Health Agency and has been implemented by the Austrian Public Health Institute in close cooperation with the Institute of Health Promotion and Disease Prevention, the Austrian Health Literacy Alliance, and the teaching sub-committee of EACH (tEACH).

Table 3
Assessment of the four communication skills training programs according to the RE-AIM Framework (14).

RE-AIM	Austria	Ireland	Denmark	Australia
Reach *The number of participants and representation in relation to the target group*	CST: In the pilot-phase in 2019, about 446 health professionals with direct patient contact working in different healthcare settings TTT: 19 health professionals and/or communication skills trainers have participated in the pilot of the TTT TTTT: 8 health professionals and/or professional communication skills trainers from the group of 19 volunteered and were recruited to participate in the pilot of the TTTT	CST: A total of 2,200 healthcare workers have attended at least one module Module 1: 7 TTT days with the 40 publicly funded acute hospitals – completed Module 2:7 TTT days completed Module 3: 7 TTT days completed Module 4: 7 TTT days completed	CST: A total of 2,315 staff members with patient contact have participated communication research program. Before that another 4 departments implemented a similar CST on their own. With few exceptions all staff with patient contact was reached TTT: Approximately 90 have been educated as trainers in the same period and includes doctors and nurses	CST: is currently being implemented at two small regional hospitals with approximately 1000 staff each Approximately 50% of the staff was trained by OCPH, with the remainder to be trained by their own faculty. Approximately about 700 staff members. Staff reach in phase 1 sites has been excellent with no groups excluded though medical professionals proving to be harder to free up from clinical duties.
Effectiveness *The impact of the program*	CST and TTT: evaluation of participants' satisfaction has been predominantly rated very positively for both levels. Healthcare professionals' self-efficacy for specific communication tasks (CST) and trainers' self-efficacy for specific teaching skills (TTT) has improved. On the level of the TTTT there are no evaluation results available yet	12 workshops for each of the three modules (total = 36 workshops) have been delivered in six hospitals. This work is continuing and these figures will increase over the next year	Survey to all HP showed significant effect on self-efficacy (14) and on observed communication based on audio recording before and after the course (27). After the implementation, survey to managers showed that all new staff members attended the course at 17 out of 24 department. Half of all departments had made a plan for brush-up (not all had finished the implementation).	Staff evaluations of the program have been positive indicating the program is practical and relevant. At organizational level, initial data suggest some improvement in complaints/compliments related to healthcare. The authors are planning to design a framework for evaluating health economics and other outcomes at organizational level
Adoption *Number of settings who are willing to initiate a program.*	The pilot TTT-cohort has been certified and has started to offer CSTs for healthcare organizations. About 15-20 healthcare and educational institutions have requested CSTs. Another TTT has started in 2019.	The remaining 34 acute hospitals will participate in the TTT program as described above and will have supervised roll-out of modules. A number of hospitals have voluntarily approached the project lead with requests to be included. They will be implemented using the same implementation approach	The program will be implemented at another hospital in Denmark in 2020, and they will initiate the process by certification of 8 trainers. The three other hospitals in the Region of Southern Denmark are preparing a similar process	To date YTM has only been implemented in services whose CEO and Board have seen person-centred HC as a major strategic priority, and this has been identified as a key enabler. It is unclear what the uptake might be without government part-funding.

3.1.2. The Irish program

In Ireland, the communication program was initiated by the National Health Services Executive (HSE) targeting the acute hospitals in Ireland. The program commenced with the design of four modules and accompanying TTT modules. Module one was designed for all staff, including non-clinical and management staff and the remaining three modules are for HCP.

The TTT programs were first delivered in July 2018 and all four modules have been successively delivered on multiple occasions on a national basis to six pilot hospital sites across the country. The majority of the modules to date were delivered jointly by the HCPs who completed the TTT training and the program leaders. This facilitated the continuance of the TTT training into the initial phases of the program delivery. Withdrawal of teaching supervision is decided in consultation with the HCP trainers and the program leaders.

The implementation team for the project consists of a group of four individuals with different backgrounds in Speech and Language, Clinical Psychology, Surgery and General Practice. Three of the team have over 30 years of experience in CST and medical education. The program is coordinated, partly designed, taught and administered by one part-time HCP working for the HSE in collaboration with three other HCPs mentioned above, all with other commitments.

3.1.3. The Danish program

In Denmark the communication program was initiated within one hospital organization, incorporating three hospitals using a model that provided all clinical departments with trainers at the three hospitals (31).

All of the clinical departments were included in a stepwise fashion between 2011 and 2017.

At each department, 4-8 HCPs (depending on the size of the department) were trained to conduct the CST of the staff from their own department. Courses for newly recruited staff members were established (the same 2 + 1 day course) after the implementation at the individual department.

The program is anchored in the Health Services Research Unit/Centre for patient communication at the organization. The research director has the overall responsibility for the implementation and evaluation of the program. The course administration is carried out by the hospital administration in close cooperation with the research group.

The next phase in the planning is the implementation of the communication program at hospitals in the region of Southern Denmark with app. 10.000-15.000 staff.

3.1.4. The Australian program

In Australia, the program 'Your Thoughts Matter' was initiated by the Centre for Organisational Change in Person-centred Healthcare at Deakin University. The first phase was targeting health organizations within Victoria, Australia.

It is a five-tiered multi-modal intervention consisting of four training components and also includes a patient component designed to equip patients with 'Question Prompt Sheets' and clinicians with education on how to use this tool in their consultations. This component is excluded in this paper. The overarching objective of the program is to ensure that core communication skills are consistently delivered on each and every encounter by all staff members, both clinical and non-clinical.

Starting with two small regional hospitals (800-1000 staff each) subsequently include larger regional & metropolitan multi-campus health organisations with a total of 5000-10,000 staff.

3.2. Training programs

In general, the programs for implementing CST are based on a TTT approach and share many common characteristics. The model used, the content of the training program, the teaching methods and the formative assessment and feedback used to ensure the application of the acquired knowledge and skills are all similar. This is explained by the fact that some of the leaders of the programs and the TTT have been actively involved or trained in the teaching subcommittee of EACH (tEACH), and also that the educational material used originated from within the tEACH framework.

3.2.1. Train the trainer (TTT)

Training of trainers (TTT) was prioritised from the outset particularly in Denmark, Austria and Ireland. The duration of the TTT courses varies significantly and in Austria included the establishment of a national network of trainers.

All four TTT programs are based on the Calgary-Cambridge textbook 'Teaching and Learning Communication Skills in Medicine'(23). This textbook describes how to construct a skills curriculum across specialities and documents the skills that form the core content of CST. The programs aim to train the teachers to facilitate the key skills pertinent to CST and include training methods with a particular focus on the active involvement of participants in small group settings, and the implementation of CST, coaching and supervision. More detailed information on the TTT programs appears in Table 2.

3.2.2. Communication skills training (CST)

All projects have used communication training programs based on the Calgary-Cambridge Guide (8). In Austria the training program is based on experiential communication skills teaching with simulated patients and the six-steps approach for curriculum development for medical education (32). A practical manual for communication skills trainers was developed in German (33). In Denmark a Danish textbook based on the Calgary-Cambridge Guide targeting all health professionals and staff with patient contact is used as the textbook at the courses (34). The Irish program developed trainer and participant manuals along with a suite of bespoke video demonstrations for each of the four modules.

With the exception of the initial module for all staff in the Australian program (SKINDEEP) the training courses in the four countries are conducted in small groups (8-10 persons) using a mix of experiential and didactic methods with presentations, video demonstrations, roleplay with individual guidance, feedback and group discussions. In Denmark the training of the HCP includes mandatory video recording from clinical practice with feedback.

The target groups, the duration and the content of the courses are documented in Table 2.

3.3. Estimate of the costs

The variation in implementation processes, and the mix of cost-recovery, subsidized and collaborative funding models makes it difficult to document standardized costs.

Estimates from the programs from Austria and Ireland show that the cost for CST range from 193 (Austria) to 250 (Ireland) Euro per person per day. In Denmark, the calculation of the cost includes the expense of funding staff leaves to attend the training. Based on this precondition, the three days CST was estimated to cost 1.6 person-years (35) for each 100 staff participating in the courses, which equates to approximately 375 Euro per person per day.

Information on the cost of the TTT courses specifically was only available from Austria and Denmark. Austria calculated the cost to

be 140,000 Euro per TTT program and Denmark reported that the cost was 25,000 Euro per TTT course. In Austria, the costs arise from the long duration of the program (393 hours vs. 88 hours in Denmark) and its evaluation, and includes the establishment of the national trainer network and the network of trained simulated patients.

3.4. To what extent did we succeed?

This question was elucidated by the heads of the communication programs by responding to the indicators of the RE-AIM framework. A summary of their description is presented in Table 3.

With regard to the REACH indicator (number of participants and representation in relation to the target group, **t**he number of participants in the programs ranged from 446 in the pilot phase in Austria to 3000 health care workers after six years in Denmark. All programs were successful in targeting the intended groups, however in Australia it was noticed that it was challenging to reach as many physicians in the implementation phase.

According to 'EFFECTIVENES' and the impact of the program, it has only been investigated in Austria and in Denmark. Both programs used self-efficacy as one of the outcome measures, and the findings from Denmark demonstrates that the three-day communication skills program could be implemented broadly in clinical practice and still demonstrate the same positive outcomes as shown in smaller and more controlled studies (16).

Denmark has also reported data from observations of healthcare workers' communication based on audio recordings. The findings from this study showed a significant increase in patient-centered communication, following training, with no increase found in time spent in the consultation (36). Patients' experiences of the communication were measured using the Communication Assessment Tool (37) and the preliminary data seems to support the findings from the objective ratings and the self-efficacy questionnaires (38).

According to the RE-AIM indicator 'ADOPTION' all four programs can document that they are in the process of implementing their programs in a brand-new setting. Australia has reported that future success of the program will rely on whether funding can be shared between the government and the health organisations.

Quality and consistency is currently assured only because the programs are being delivered by small groups of very experienced educators who are all members of EACH. Austria is the only country among the four which has developed standards for the trainers to guarantee that the courses are delivered as intended.

4. Discussion and conclusion

4.1. Discussion

The implementation of the four projects has relied on a few individuals and this poses the main challenge. It takes a lot of effort to convince organizational leadership to invest, to involve stakeholders and to locate change agents in the healthcare institutions. In general, the evaluations of the courses has been very positive, as demonstrated by requests for new training programs, and plans for new implementation projects.

The necessity of adapting the program to the needs and the circumstances of local clinical practice is a common theme. Originally CST in Austria was planned to comprise of three and a half days spread longitudinally over several months, however this plan turned out to be too large a step for most of the Austrian institutions. Similar adjustments were necessary in the other projects such as customizing the content of the course to suit non-clinical staff members and adjusting the criteria for acceptance onto the TTT program. All four programs are characterized by a learner-centred approach focusing on skills training and the use of teaching methods such as role-play, feedback, supervision, and the analysis of consultations using video and group discussions. These are the methods that have proven effective and are known to result in enhanced person-centredness (39,40).

The programs are all based on the TTT model, and the necessity of using well-trained trainers was highlighted as a precondition for the success of the implementation and the sustainability of the programs. The experiences shared in this study highlight why it makes sense to share our experiences and cooperate internationally. For example, until now it was only Austria that offered a TTT certification. On the other hand, Austria has reported challenges with less experienced participants in the TTT and has concluded that trainers should ideally be recruited in mandatory CST preceding the TTT. This is a strategy already adopted by the Danish and Irish programs.

The evaluation of the effectiveness of these large scale projects and the improvement of patient outcomes such as improved patient health and wellbeing, decreased readmission rate and other health economic outcomes remains a complex issue. There is disagreement regarding the desired methodological approach to this research. The recommendation in The Cochrane Handbook for Systematic Reviews of Interventions (41) has identified the problem of bias resulting from the heterogeneity among trials and several reviews of communication programs have drawn the same conclusion (1,13).

The Austrian approach maintains that for CST to be successful, and to lead to actual transfer of skills into daily practice, more complex interventions are needed which would address not only the HCPs' skills development but also the organizational, cultural and systemic factors in which they work which do not support patient-centred communication.

According to the literature on the evaluation of complex interventions (42,43) it is just as important to understand the context behind how a delivered intervention produces changes. Perhaps we have to reframe the research question to: how does CST change the behaviour of the HCP? And subsequently, how does the changed behaviour impact patients? Street et al. (44) have described the direct and indirect pathways through which communication may influence health and wellbeing and suggest that research on the relationship between communication and outcomes should strive to identify the particular pathways through which the events of the consultation can affect subsequent patients' outcome. Furthermore, they suggest that researchers identify the outcome of interest first, then work backwards to ascertain the relevant proximal and intermediate outcomes which should be measured, and finally determine what aspects of clinician–patient communication should be analyzed to predict the success of that pathway. This is aligned with the Realistic Evaluation approach recommended for complex interventions (42,43), which emphasizes the importance of investigating not only 'what happens?' but also 'how it happens?' by testing hypothesized causal pathways and identifying unexpected mechanisms by using quantitative and qualitative methods.

The health economic impact of CST using large scale interventions is another issue, which has to be addressed in future studies. Research in this area is still scarce, however if future large scale studies can confirm the findings of Zhang et al., that effective communication programs are associated with less aggressive treatment and reduced health care costs (45), then funding for more large scale projects may be forthcoming.

The RE-AIM framework used to collect data and to analyze the interventions provided a useful framework to give an overview of

the important aspects of the interventions, the implementation process and to help to clarify the similarities and the differences between them.

The implementation literature suggests several models/frameworks, however there is no consensus on how best to divide the analysis into the subcomponents and it is not possible to adjudicate between the different frameworks describing e.g. fidelity, dose, reach etc. (43).

We chose to focus on these four national projects for the purposes of this study although there may be many other large scale projects in existence and this can be regarded as a limitation of our study. By including programs based on the Calgary-Cambridge Guide and the TTT model, we sought to increase the comparability of the projects. The data collection methodology was purposive and collected from the authors who initiated and implemented the programs and this methodology is another limitation of the study. Despite this, the data represent important knowledge about the implementation process of a generic communication training concept conducted in a wide variety of clinical settings and across different countries.

The fact that the data has led to identification of similar findings in terms of experienced successes and challenges also helps confirm the novelty and significance of the data.

4.2. Conclusion

The experiences from implementing communication training based on the Calgary-Cambridge Guide and the TTT concept indicates that these are valid concepts which can be implemented and adopted in multiple different health care settings across national cultures. The authors stress the importance of establishing standardized trainer education, the necessity of tailoring the communication programs to the needs and the circumstances in the local clinical practice, and to the maintenance of the academic creditability of the program.

Knowledge about the impact of the programs continues to be scarce although the findings from the Danish surveys and observation studies as well as from the Austrian evaluation are very promising and are in preparation for publication.

CST training should be regarded as a complex intervention and so evaluation studies should use appropriate methodologies. The measurement of the health economics of these programs will require co-operation across jurisdictions. The sustainability of the programs is under threat whilst they are dependent on provisional funding and this requires urgent attention.

4.3. Practice Implications

Cultural change which focuses on the patient's perspective, on self-reflection, and on peer feedback is necessary to achieve continuous improvement in communication competencies in clinical practice. Interventions should not be limited to the empowerment of individuals but should include organizational and process development. Initiating local, national and international processes for developing incentives for good healthcare communication may pave the way for a patient-centred communication culture that makes a difference for patients.

The allocation of resources at the political and organizational level needs to be prioritized as a matter of urgency in order to guarantee the sustainability of programs.

CRediT authorship contribution statement

Jette Ammentorp: Conceptualization, Methodology, Writing - original draft, Writing - review & editing. **Sarah Bigi:** Conceptualization, Writing - review & editing. **Jonathan Silverman:** Methodology, Resources, Writing - review & editing. **Marlene Sator:** Investigation, Methodology, Resources, Writing - review & editing. **Peter Gillen:** Investigation, Methodology, Resources, Writing - review & editing. **Winifred Ryan:** Methodology, Resources, Writing - review & editing. **Marcy Rosenbaum:** Methodology, Ressources, Writing - review & editing. **Meg Chiswell:** Methodology, Resources, Writing - review & editing. **Eva Doherty:** Methodology, Resources, Writing - review & editing. **Peter Martin:** Conceptualization, Resources, Writing - review & editing.

Declaration of Competing Interest

No competing interests

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