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National train-the-trainer certificate programme for improving healthcare communication in Austria

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ABSTRACT

Objectives: In Austria a national train-the-trainer programme (TTT) has been developed, implemented and evaluated with the aim of training and certifying participants for developing, implementing and delivering communication skills training (CST) for health professionals.
Methods: The programme included 5 in-person courses, application homework with feedback, peer work, and regular trainer network meetings. Global satisfaction with training and changes in self-efficacy among TTT-participants and their learners in the CST delivered as practice projects were evaluated.
Results: 18 participants have graduated from the TTT-pilot. 98 people took part in the 9 CST delivered by TTT-participants. Participants' satisfaction has been rated very positively both for TTT and CST. At post-programme/post-training, statistically significant improvement was observed in self-efficacy for the TTT-participants and for the CST-participants. Additionally, valuable suggestions for programme/training improvement were identified.
Conclusions: This programme is an important step to sustainably improving CST in Austria. To guarantee high quality and consistency, a set of standards for certification have been developed for TTT and CST.
Practice implications: Implementation of best practices in training trainers and communication skills teaching can be guided by a structured approach. Those wanting to implement similar programmes can benefit from strengths and suggestions for improvement identified in this national project.
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1. Introduction

Extensive research evidence has shown that patient-centred healthcare communication improves patient satisfaction [1–3], healthcare behaviour [4–6], health status [6–13] and patient safety [14,15] while at the same time reducing malpractice complaints [16] and financial burden on the healthcare system [12,13,17–20]. Effective communication has also been shown to lead to more efficient use of consultation time [13,21–23]. Systematic reviews show that interventions for healthcare providers aiming to promote patient-centred care are effective [24]. In addition, communication skills teaching and assessment have been increasingly integrated into undergraduate health professional curricula [25].

Despite all the efforts in research and teaching, the quality of communication in everyday clinical practice remains low [26–29] and in Austria is below average in the EU [30]. Literature suggests factors potentially responsible for this include the gap between classroom and workplace communication learning in terms of lack of role modelling and reinforcement of what has been learnt in the classroom, leading to deterioration of communication skills in the clinical workplace [31,32]. Also, much less formal communication skills training occurs in post-graduate education and continuing education [33].

On an international basis, some large-scale train-the-trainer programmes have been reported which address some of these gaps [34–36]. Several country-specific large-scale train-the-trainer programmes have been implemented more recently by individuals affiliated with EACH: International Association for Communication in Healthcare, thus taking existing local programmes aimed at only a limited group of providers and upscaling them to a national level [37]. While the effectiveness and positive impact of train-the-trainer and faculty development programmes have been demonstrated in several

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studies [38–43], there is limited literature available describing development, implementation and evaluation of countrywide train-the-trainer programmes focused on clinical communication.

In Austria, a train-the-trainer certificate programme (TTT) was established in 2017–2019 as part of a comprehensive national strategy for improving healthcare communication [43]. The TTT was developed, implemented and evaluated in close cooperation with tEACH, the teaching committee of EACH.

The purpose of the current paper is to describe the development, implementation and impact of this national programme.

2. Methods

2.1. Trainee recruitment

For recruitment of TTT-participants we created an initial list of 40 potential applicants through a snowballing-system. Thereafter, we invited 28 selected people out of this list to participate in a selection process for the programme which included a written application and an application interview. Our aim was to have a trainee cohort of between 15 and 18 people. Potential participants had to fulfill the following requirements:

- at least 5 years of experience as either healthcare professional with direct patient contact and working in an interdisciplinary team or in experiential communication skills teaching for healthcare professionals,
- openness to learn new communication models, communication and facilitating skills,
- willingness to actively participate in a national trainer network and deliver CST based on quality standards.

Apart from these requirements, our selection strategy was guided by the principle of maximum diversity within the TTT-cohort regarding professional and demographic characteristics because the national strategy of which this programme was part of [43] aimed at improving healthcare communication in the entire Austrian healthcare system and was not limited to specific settings, professions, diseases etc. We prioritised applicants who had already been involved in local or focused initiatives which included a focus on healthcare communication.

2.2. Programme description

The TTT-programme was part of the Austrian health reform and the Austrian Health target for improving health literacy [44] and was 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 tEACH.

The method used for developing the curriculum of this programme followed the steps recommended by Thomas et al. [45]. As a first step, problem identification and general needs assessment was conducted to guide curriculum development by searching relevant literature and interviewing experts and stakeholders [27–29]. An assessment of trainee professional background, experience in communicating with patients and in communication skills teaching, and individual needs and expectations with regard to the programme, also helped guide curriculum development.

2.2.1. Programme goals and objectives

The broad goal of this programme was to promote evidence-based communication skills training (CST) for healthcare professionals, particularly in postgraduate and continuing education in Austria. Specifically, the primary aims of this programme were.

- to train and certify participants for developing, implementing and delivering CST in healthcare according to evidence-based standards by developing and enhancing participants' knowledge and skills regarding how to develop, what to include in, and how to facilitate CST
- and to build a network of trainers certified according to evidence-based standards.

According to identified needs of the target group (see Table 1), specific measurable objectives were formulated for 4 domains (see Table 2).

Table 1
Summary of identified needs of the target groups.

TTT-participants	
Needs	Examples
a model for structuring consultations and an evidence-based skills set for communicating with patients incl. basic skills	e.g. demonstrating empathy
skills for specific challenging tasks, contexts and situations in healthcare communication	e.g. breaking bad news, motivating and empowering patients, fostering adherence, Shared Decision Making, dealing with language barriers or low health literacy
skills for communicating with specific patient groups	e.g. vulnerable patient groups like the elderly, patients with medically unexplained symptoms or dementia
skills for communicating beyond the patient	e.g. communicating with families, team communication
evidence-based strategies and skills for participant-centered experiential communication skills teaching	e.g. working with simulated patients, video, feedback
skills for facilitating transfer of communication skills learning to the workplace and for dealing with challenging teaching situations	e.g. dealing with resistance or overconfidence regarding own communication skills
competences for developing longitudinal, interdisciplinary communication skills curricula according to evidence-based standards	
competences for developing and delivering train-the-trainer and faculty development programmes	
CST-participants	
Needs	Examples
basic skills for patient-centered communication	e.g. sharing information, providing structure
skills for specific challenging tasks, contexts and situations in healthcare communication	e.g. dealing with strong emotions or conflicts, breaking bad news, motivating patients, dealing with language or cultural barriers, sensitive issues
skills for communicating with specific patient groups	e.g. young people
skills for communicating beyond the patient	e.g. communicating with families, team communication

Table 2
Specific measurable objectives in four domains of the TTT-programme: As a result of this programme, participants will be able to.

1. **Introduction to clinical communication and health literacy:**
   - explain the concept of health literacy
   - describe relevant standards and strategies of a health literate organisation
   - describe effects of good healthcare communication on health outcomes
   - name typical problems in healthcare communication
   - name evidence showing that healthcare communication can be learned
2. **What to teach:**
   - name various models in use to conceptualise health care communication
   - analyse the structure of communication in observed interviews using the Calgary Cambridge Guides[57]
   - identify the specific communication skills in observed interviews
3. **How to teach:**
   - describe what they are trying to teach in a specific teaching environment
   - apply educational theory to designing effective communication skills training
   - describe key components of effective experiential communication skills training
   - use role play, video, small groups and simulated patients to enhance learner's communication skills
   - give learners structured feedback on their communication skills
   - describe strategies for managing large and small group dynamics in communication skills training
4. **Curriculum development:**
   - develop a curriculum suitable to the healthcare setting the participant operates within
   - determine adequate content to include in the curriculum
   - determine adequate teaching methods for the curriculum

2.2.2. Educational strategies

Educational strategies were chosen based on evidence on how to effectively change behaviour in communication skills teaching. These include activating prior knowledge, systematic delineation and definition of the skills and core concepts, interactive peer learning as well as experiential strategies such as opportunity to practice, observation of learners, video or audio recording and review, well-intentioned feedback, and rehearsal [33,46–53]. Also, activities were planned to consolidate, refresh and reinforce what has been learnt and to support transfer into practice. A longitudinal design that enables helical learning was developed to support participants in sustainably strengthening their communicative and teaching skills as effectively and efficiently as possible [33,52,53].

2.2.3. Programme components

The TTT-programme consisted of several 1–3 day in-person course meetings combined with practical application of concepts and skills through relevant homework projects. The TTT-curriculum is described in Table 3.

All in-person courses (5 courses in total) of the TTT were delivered at the Austrian Public Health Institute in Vienna by a group of 7 highly experienced tEACH facilitators (2 courses in English, 3 in German). As an overall approach in the TTT we started with giving an introduction to clinical communication and health literacy (Opening event) and exploring effective communication skills (What to teach) and then effective strategies for teaching these in experiential small groups (How to teach), followed by developing a curriculum suitable to the healthcare setting the participant operates within (Curriculum development) and finally refreshing and reinforcing what has been learnt (Refresher). Homework projects included conducting and video recording of a teaching session followed by a feedback review. A key component of the TTT-programme, following recommendations for best practices in faculty development [54–56], was to have TTT-participants complete an application project of developing and implementing a CST curriculum project in the context of their own workplace. Each TTT-participant used the same steps following Thomas et al. [45] in developing their CST curriculum projects.

2.2.4. Course content

As a framework for defining and analysing skills for communicating with patients, the Calgary-Cambridge Guides [57] were chosen. They are evidence-based, widely used internationally and offer a communication model specifically designed for health professionals to conduct consultations with their patients, is behaviour-oriented and allows a comprehensive analysis of a consultation [57–59]. As a didactic framework for teaching communication skills, agenda-led outcome-based analysis (ALOBA) [49] was chosen as it follows the teaching principles and experiential training methods that evidence has shown to be necessary for effective communication training (see Section 2.2.2). Both frameworks, the Calgary-Cambridge Guides and ALOBA were expected to adequately address the identified needs of the target groups.

2.2.5. Programme delivery

To guarantee high quality and consistency of the programme, a set of quality standards for certification of TTT and CST were developed. The participants of the TTT-programme were trained to develop and deliver CST based on these standards, described in Table 3. Upon completion of the programme, all participants were evaluated for having fulfilled the following criteria for certification: continuous active participation in as well as positive assessment of competence by course facilitators for all in-person courses, successful completion of all application homework including feedback. All but one participant has achieved certification. Subsequently, certified communication skills trainers became members of a trainer network and have to meet defined duties. Re-certification after 3 years can be achieved if predefined requirements are met.

A group of simulated patients (initially a first cohort of n = 7, after completion of the programme a second cohort of n = 8) were recruited and trained according to the ALOBA-framework to participate in TTT and CST experiential learning activities.

2.3. Evaluation

The programme was evaluated by the Institute of Health Promotion and Disease Prevention in close cooperation with the Austrian Public Health Institute and tEACH. The overall aim of the evaluation was to investigate the quality and effects of the TTT-programme. The timeline of the evaluation procedure is outlined in Fig. 1. For the whole evaluation, paper-pencil assessments were applied.

2.3.1. Programme satisfaction

At the end of courses 2–5 (t1b-e) and at the end of the whole TTT-programme (t3), TTT-participants were asked to rate their global satisfaction with each course (t1b-e) and with the whole programme (t3). The satisfaction questionnaire included a 5-point Likert-scale item (1 = very good to 5 = very bad) "Which grade would you give the course (at t3: programme) in total?" and a dichotomous yes/no question "Would you recommend the course (at t3: programme)?". TTT-participants were also asked to provide suggestions for improvement at t3. Furthermore, at t3, a group discussion with TTT-participants was conducted to gain further suggestions for improvement and qualitative in-depth insights into participants' overall evaluation of the whole TTT-programme.

2.3.2. Learning

To reveal changes in learners' competence, TTT-participants completed a teaching skills (i.e. self-efficacy) self-assessment survey at the start of the programme (t1) and at the end of the programme (t3). A retrospective pre-programme assessment of TTT-participants' self-efficacy was also conducted at t3 to minimize response shift bias which can result in underestimation of programme effectiveness

Table 3
Description of the curricula and quality standards developed as part of the programme.

	Communication skills training	Train-the-trainer programme
Target group	health care professionals	• health care professionals • communication experts
Facilitators	1 certified communication skills trainer per max. 10 participants	highly experienced teaching trainers
Duration	depending on needs assessment: at least 8 h spread over several sessions	393 h (corresponding to 16 ECTS) spread over 4 semesters
Content/ components	depending on needs assessment: specific needs and challenges perceived by the participants combined with basic key competences of healthcare communication	in-person courses (71.25 h): • "Introduction to clinical communication and health literacy" • "What to teach in Communication Skills Teaching: Skills and Structure" • "How to teach: Experiential Communication Skills Teaching" • "Curriculum development in Communication Skills Teaching" • "Refresher: Mix of what and how to teach" application homework with feedback (209 h): • Teaching video with feedback review: conducting and video recording of a 3 h-teaching session (experiential small group session with simulated patient) followed by the discussion and evaluation of one's own training experiences with a teaching trainer • curriculum plan with feedback review: developing a curriculum plan for a CST for practicing health professionals (practice project) and receiving feedback from peers and a teaching trainer • implementing and evaluating this CST homework and peer work (112.5 h): • review of course materials, a practical facilitators' manual and literature • preparation/follow-up work • working together in the national trainer network
Educational strategies	• use of an evidence-based framework for analysing skills for communicating with patients such as the Calgary-Cambridge Guides [57], which allows to address the specific needs and challenges perceived by the participants with reference to basic key competences of healthcare communication (e.g. information sharing) • following effective principles for experiential communication skills teaching such as high learner-centredness, practical exercises in small groups under guidance preferably with simulated patients in combination with constructive feedback and theoretical models, the possibility for repeated practice and for reflection, activities to consolidate, refresh and reinforce what has been learnt and to support transfer into practice • longitudinal training design that enables helical learning tailored to the target group	
Methods	mix of experiential and didactic methods in small and large group sessions	
Assessment	formative assessment throughout the training (feedback)	
Completion	confirmation of participation	certificate

due to participants overestimating their skills prior to training [60,61]. The 17 self-assessment survey items were based on measurable objectives for this programme across the 4 main topic domains (see Table 2). All items were rated on a 4-point Likert-type scale ranging from 1 (I disagree) to 4 (I agree) in response to the prompt "I am able to…." followed by the objective. Single item scores as well as domain scores for each of the 4 domains and total score over all items were calculated by averaging the domain specific items and all 17 items, respectively. As an additional measure of TTT-participants' self-efficacy, a single item "How would you rate your competence to develop and implement a communication skills training for health professionals?" was used. This item had to be responded on a 10-point Likert-type-scale, 1 (very low competence) to 10 (very high competence).

2.3.3. Evaluation of CST projects

To evaluate TTT-participants application projects, CST-participants were asked in a questionnaire survey to rate their global satisfaction with the training at the end of each CST (t2a-i) with a single item including "Which grade would you give the training in total?" which had to be responded on a 5-point-scale, 1 (very good) to 5 (very bad). Furthermore, CST-participants were asked for suggestions for improvement.

CST-participants' communication skills self-efficacy was assessed via questionnaire surveys at the end of each CST (t2a-i) by applying a retrospective pre/post-training assessment (no traditional pre/post assessment was used for the CST). The questionnaire consisted of 4 items which were formulated in correspondence with the main competences and skills defined in the Calgary Cambridge Guides [57] (see Table 6). All items were rated on a 5-point Likert-type scale ranging from 1 (less skilled) to 5 (highly skilled) and analysed separately (i.e. no sum or average score was calculated).

2.4. Statistical analysis

All continuous variables were expressed as mean ± standard deviation and categorical variables as frequency (%). The Shapiro-Wilk normality test was applied to assess the assumption of normal data distribution. Within-group changes in learners' competences (i.e. TTT-participants' self-efficacy and CST-participants' self-efficacy) were evaluated using paired-*t*-tests or Wilcoxon signed-rank-tests, if data were not normally distributed. To estimate effect sizes, Cohen's d for repeated measures was additionally computed with $|d| \geq 0.2$ indicating a small, $|d| \geq 0.5$ indicating a medium and $|d| \geq 0.8$ indicating a large effect. Statistical analyses were performed using SPSS Statistics version 25 (IBM Corp, Armonk, NY, USA) and GraphPad Prism version 7 (GraphPad Software, La Jolla, CA, USA). Statistical significance was set at $P < .05$ (two-tailed).

3. Results

The TTT-programme consisted of 18 participants which were diversely stratified along professional and demographic characteristics (see Table 4).

3.1. Programme satisfaction

As outlined in Table 5, on average TTT-participants were very satisfied with the courses and the total programme. Comparing the data collected on courses 2–5 (t1b-e), the course "How to teach"

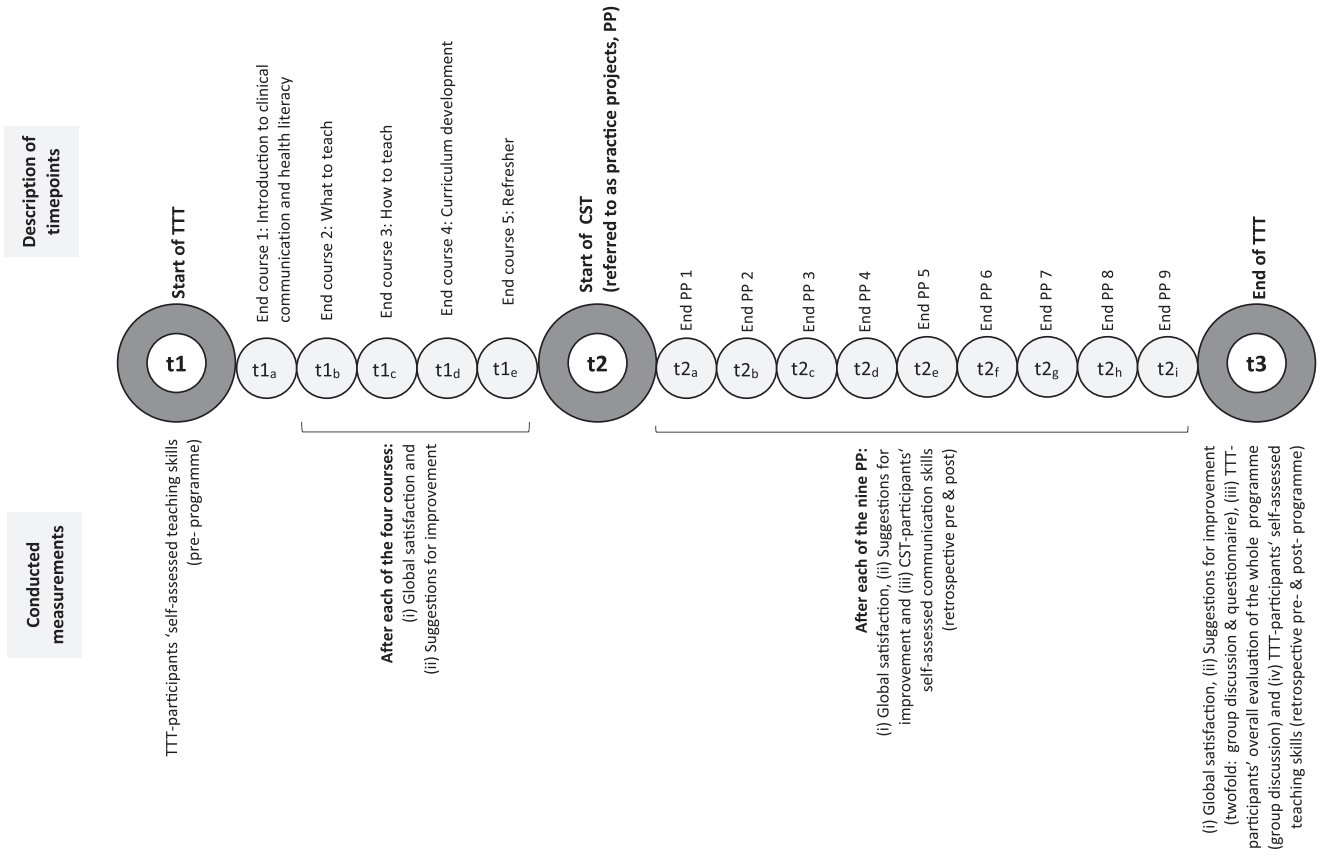

Fig. 1. Timeline for the evaluation.

received the highest rating and recommendation score and the lowest was for the course "Curriculum development".

The surveys administered after each course and at the end of the TTT-programme, as well as the final group discussion (attended by 16 TTT-participants), showed that participants perceived the TTT-programme as very effective in improving their skills for developing and implementing CST. Establishing a group of trainers and providing quality standards, as well as the longitudinal design of the TTT-programme, its individual components and experiential teaching methods, the support from tEACH and the project team were perceived as very helpful. Less helpful aspects included starting into the TTT with no previous experience in communication skills teaching for some of the participants, English as teaching language in 2 courses, tight timing in some courses, underestimating the time investment needed for the programme beforehand, and some organisational issues. Suggestions for improvement included more support for planning, acquisition and implementation of the practice projects and a preparatory course for participants with no previous experience in communication skills teaching before the TTT.

3.2. Learning: TTT-participants' self-assessed teaching skills (i.e. self-efficacy)

With regard to the specific programme objectives, a significant higher score was observed for the total score (Fig. 2.5) and for all 4 domain scores at post-programme (Fig. 2.1–2.4), when comparing with both the retrospective pre-programme and the pre-programme ratings. For the single item used as an additional measure of self-efficacy (overall competence to develop and implement CST) results were approximately identical. Effect sizes were large for all findings but tended to be lower for the pre-post comparisons compared to the retrospective pre-post comparisons. As an additional analysis, retrospective pre-programme and pre-programme scores were compared. Thereby, statistically significant differences were detected for the total score (Fig. 2.5) as well as for the domain "Introduction to clinical communication and health literacy" (Fig. 2.1) and the domain "What to teach" (Fig. 2.2) indicating that participants overestimated their competence regarding these scores prior to the programme. Detailed data on all of these findings are provided as Table A in the appendix.

3.3. CST evaluation results

A total of 98 people took part in the 9 different CST delivered as practice projects by TTT-participants, with the number of participants per CST ranging between 6 and 16 people (mean = 10.9 ± 3.6). The participants of the CST included doctors (52.4%), medical-technical healthcare professionals, i.e. dieticians, physiotherapists, speech therapists (33.3%), nurses (8.3%) and others (6.0%), working mainly in hospital settings followed by out-patient, rehabilitation and other healthcare institutions. 77.4% of participants were female. The CST were offered mainly at CST-participants' home institutions (e.g. hospitals) and were co-facilitated by 2 TTT-participants each.

Overall, CST-participants (85%/98% response rate) were very satisfied with the training, indicated by a mean rating score of 1.2 ± 0.5 (possible range 1–5 with lower values indicating a higher satisfaction).

Many CST-participants would have liked to have more time in total, especially for practicing with simulated patients.

As illustrated in Table 6, for all 4 items used to assess CST-participants' self-efficacy a statistically higher rating score with a large effect size was observed post-training compared to the retrospective pre-training score (all $p < .001$; effect sizes ranging from 1.6 to 2.0).

Table 4
Professional and demographic characteristics of the TTT-cohort.

Professional background	
healthcare professionals	16
communication experts with no background as health professionals	2
Healthcare profession	
Physicians	10
Psychotherapists	8
clinical psychologists	3
Nurse	1
speech therapist	1
Dietician	1
Professional specialisation (doctors only)	
general medicine	5
Psychosomatics	5
Psychiatry	3
palliative medicine	1
internal medicine	1
Urology	1
Geriatrics	1
anaesthesiology and intensive care	1
Field of work:	
Educational settings	
University	8
university of applied sciences	2
freelancer trainer	1
Patient care (primary/extramural and secondary/intramural care)	
Hospital	8
private practice	7
rehabilitation center	1
home for the elderly	1
social care	1
Health promotion and prevention	2
Owner of healthcare institutions participants are working in	
Austrian Social Insurance	5
Others	13
Gender	
Female	13
Male	5
Region (out of 9 regions in Austria)	
Vienna	11
Lower Austria	2
Styria	2
Carinthia	1
Salzburg	1
Vorarlberg	1
Years of previous experience in communicating with patients (healthcare professionals only)	9–40 (22 ± 8 years, n = 16)
Years of previous experience in communication skills teaching	0 to between 5 and 25 (11 ± 6 years, n = 18)

Table 5
TTT-participants global satisfaction with the courses and the total programme.

Course	n	Rating score[a]	Recommend the course (n)
What to teach?	15	1.4 ± 0.6	14 (93.3%)
How to teach?	17	1.1 ± 0.3	17 (100%)
Curriculum development	15	1.6 ± 0.8	13 (92.8%)[b]
Refresher	15	1.2 ± 0.6	15 (100%)
Total programme	17	1.2 ± 0.6	17 (100%)

Note: The variation in sample size is due to missing or invalid data for both items (total sample size, n = 18); [a] lower values indicate a higher satisfaction (possible range: 1–5); [b] based on 14 participants (1 participant presented a valid answer for the rating item, but did not answer the item regarding the course recommendation).

4. Discussion and Conclusion

4.1. Discussion

In Austria a lack of evidence-based CST for healthcare professionals, particularly in postgraduate and continuing education, as well as a lack of (clinical) teachers' skills for facilitating such training according to evidence-based standards has been identified [27–29]. While there have been some one-off initiatives of limited duration which largely depend on the commitment of individuals, there have been only very limited systematic nationwide initiatives [29]. Quality standards, example curricula, training and certificate programmes for practising health professionals have been identified as needs to assure quality and consistency of evidence-based CST [43].

Results from the current study provide a picture of the effectiveness of a nationwide TTT-programme to increase capacity in the country for providing evidence-based CST to healthcare professionals. This study demonstrated that participants were highly satisfied with the TTT-programme and showed significant improvement of self-efficacy regarding their skills for communication skills teaching. Retrospective pre/post self-efficacy ratings point to participants tending to overestimate their communication skills prior to training while more accurately rating their teaching skills. Similarly, participants from the CST were very satisfied with the training, and their self-efficacy regarding their communication skills significantly improved post training.

This study adds to the current literature by presenting a structured approach for developing, implementing and evaluating a TTT on a national level. While there is a large body of literature on CST [62], there is only a limited number of studies on TTTs [37] and even less so on countrywide initiatives [37,63]. When comparing initiatives based on a TTT-model, considerable differences between programmes become evident [37]. With 393 h per individual trainee the Austrian programme is very extensive compared to other TTTs. Reasons why we invested so many hours included that we wanted to provide participants with foundational knowledge of communication and CST along with significant opportunities to practice their skills for efficiently working with simulated patients in experiential sessions, followed by reinforcement through refresher courses, and observation and feedback in their own teaching setting. These elements have been shown to be most effective for teaching communication skills [33,46–56]. Secondly, the Austrian programme aimed at providing trainers with skills not only for what and how to teach, but also for developing and flexibly adapting curricula to different contexts in which they are working. Thirdly, to assure high quality and sustainability, the Austrian programme also included time for future trainers to work together in a national trainer network. Lastly, as part of this programme, a set of standards for certification have been developed for TTT and CST. Standards have been discussed as an important yet little covered part of professionalization of teaching practice [55] and are an important addition to this area as they help to guarantee high quality and consistency, i.e. that the programme is delivered as intended. In the future, these quality standards might also become a basis for accrediting healthcare institutions as well as for paying healthcare professionals also according to the quality of their communication. Quality standards could therefore become a basis for developing incentives for patient-centered communication in everyday clinical practice.

In the following, some lessons from this project are discussed with regard to the TTT-curriculum, the CST offered and from a larger national perspective.

4.1.1. TTT-curriculum lessons

- Learning both the necessary communication and teaching skills within the TTT was a challenge for some of the less experienced trainees. In future TTTs, this problem should be tackled by

Table 6
Changes in CST-participants' self-assessed communication skills (i.e. self-efficacy): retrospective pre-training vs. post-training assessment (both assessments were conducted at the same timepoint).

Items		Retro-Pre		Post			
	n	M	SD	M	SD	*p*	Cohen's d
How skilled are you at **gathering information** from your patients in an effective, efficient and patient-centred way? (i.e. in particular encouraging patients to tell their story; appropriately moving from open to closed questions; listening attentively)?	75	3.5	0.8	4.1	0.7	< 0.001	2.0
How skilled are you at **understanding the patient's perspective**? (i.e. in particular actively exploring the patient's perspective; actively exploring ideas, concerns, expectations and feelings; picking up and responding to verbal and non–verbal cues?"	76	3.6	0.9	4.2	0.7	< 0.001	1.9
How skilled are you at **providing the correct amount and type of information to each individual patient**? (i.e. in particular giving information in assimilatable chunks, using patient's response as a guide to how to proceed; asking for patient's prior knowledge and giving information accordingly; asking patients what other information would be helpful)?	74	3.3	0.8	4.0	0.8	< 0.001	1.6
How skilled are you at **aiding accurate recall and understanding of information** (i.e. in particular organizing explanations; checking patient's understanding of information given; using easily understood language)?	74	3.3	0.8	4.0	0.7	< 0.001	2.0

Note: All scores ranging from 1 to 5 with higher values indicating a greater self-efficacy; Retro-Pre = retrospective pre-training assessment; Post = post-training assessment.

implementing an obligatory CST for everyone who is interested in participating in a TTT beforehand and recruiting those with demonstrated effective communication skills.
- Although international coordination and adaptation for cultural fit was resource-intensive and language barriers were challenging (2 courses were offered in English, the materials for the other courses were translated into German), learning from the experience from other countries and bringing in expertise from expert associations like EACH and tEACH has turned out to be crucial for the success of a large-scale project like this. In cooperation with tEACH, a teaching-trainer programme has started in 2019 for a selected group of 10 experienced graduates from the TTT-programme who will deliver further TTT-programmes in German in the future.

4.1.2. Lessons CST offered

Capacity for effective and sustained delivery of CST has been built successfully. The main challenge for future years will be to convince more healthcare institutions to implement CST in order to reach more healthcare professionals. Some strategies for this include:

- Developing shorter CST formats with the main aim of getting buy-in for more extended CST. The implementation phase showed that developing more patient-centred communication skills needs time and "baby steps". To meet the need for smaller steps, "impulse workshops" of 3 h duration have been developed as teasers to glean interest in more extensive CST.
- Professionalizing marketing and developing strategies to attract a large number of healthcare professionals.
- While individualizing CST to the needs of the target group is an important feature for curriculum development, standard formats for specific target groups, challenges and settings need to be developed and offered to increase efficiency and buy-in.

4.1.3. Lessons from a larger national perspective

- In order to really impact communication in healthcare, interventions should not be limited to empowerment of individuals (trainers and learners) but should include organisational and process development and changes in the entire healthcare system. This is the aim of the wider Austrian approach of which this TTT-programme is a component [37,64–66].
- Convincing financiers to invest to this extent and involving stakeholders takes a lot of effort. Strong political support is needed. Finding change agents in the healthcare institutions requires special attention. Regarding sustainability and financing, implementation of a programme like this can benefit from being situated within a national political framework: The current programme was developed as part of the implementation of an emerging national strategy for Austrian Health Reform. This – at least to a certain extent – goes along with a national political commitment to further implementation and basic funding for the future years. Thus successful implementation of and funding for similar programmes in other countries may depend on national political structures and processes.
- One of the challenges for participants was to gain support and funding for CST within their organisations. The national budget was used for the international tEACH-facilitators, simulated patients, external evaluation, setting up and coordinating the TTT including translation of all material into German, building up a trainer network and a network of simulated patients, and writing of a project report. Hospitals and other healthcare organisations had to pay for the CST delivered by the TTT-participants. In future TTT-programmes, we will have hospital system leadership commit beforehand to funding and implementing CST as a prerequisite for sending participants into a TTT.

4.1.4. Limitations

There was a small sample size of TTT-participants, which should be considered when interpreting the corresponding results. The gender imbalance of the participants (TTT-programme and CST) suggests that, if offered on a voluntary basis, communication skills courses in Austria tend to attract more women, and it reduces generalisability of our findings. While the self-efficacy measures for both TTT and CST programmes were theory based assuring content validity, we did not determine convergent and divergent validity. The findings of this study could have been strengthened if a control group had been available and if actual communication and teaching behaviours were measured rather than relying solely on self-report. Therefore conclusions of this study are limited to the level of reaction and self-reported learning and exclude the level of behaviour and clinical outcomes [56,61]. The impact of both TTT and CST was measured immediately after training, so we don't know about the sustainability of training effects.

A similar programme has been started in 2019 at the University of Applied Sciences Vienna for a group of 15 teachers of medical-therapeutic health professionals (physiotherapy, speech therapy, dietology, occupational therapy) which will allow for comparative results.

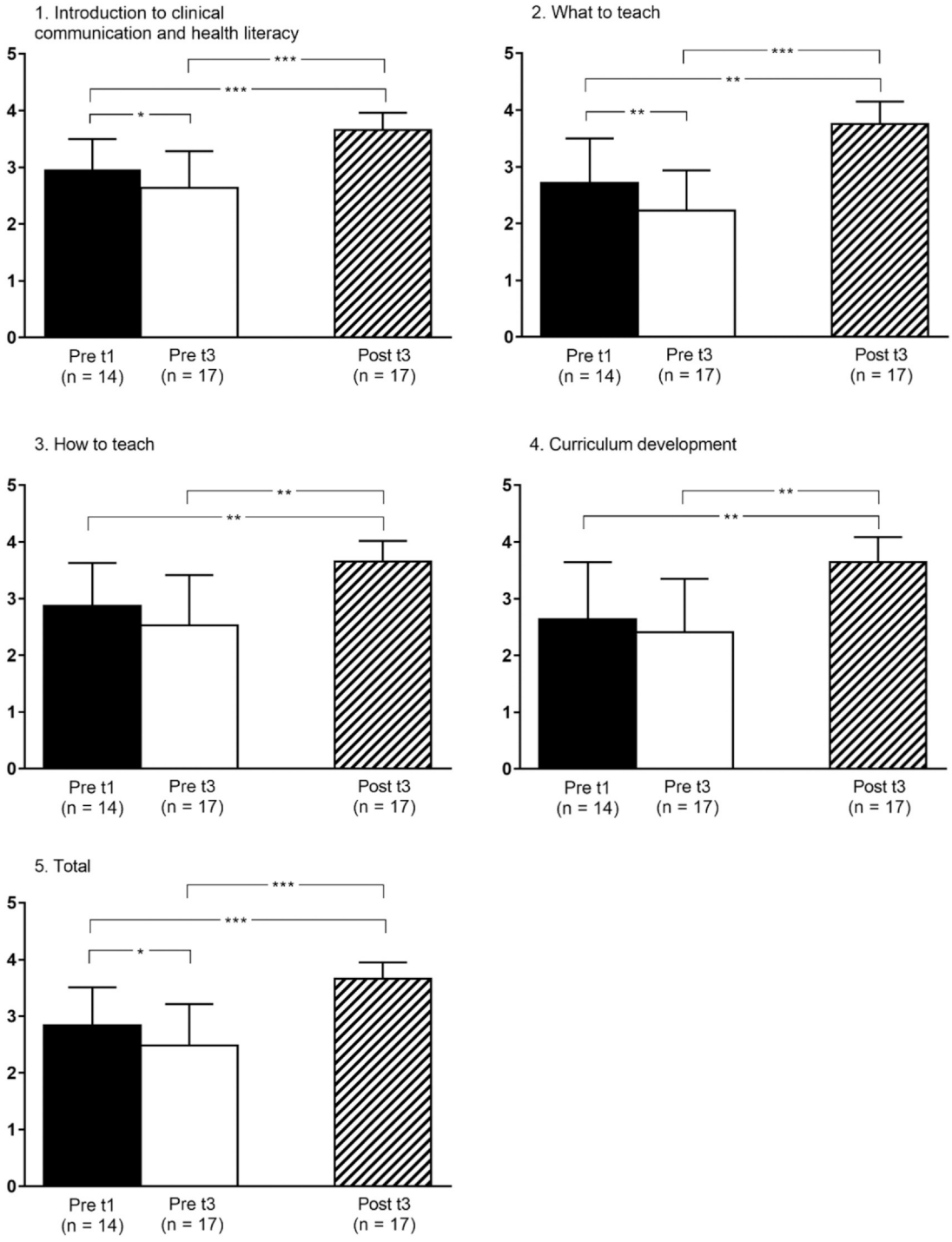

Fig. 2. Domain specific (1–4) and total (5) changes in TTT-participants' self-assessed teaching skills (i.e. self-efficacy).Note: Pre t1: assessment at the start of the programme; Pre t3: retrospective pre-programme assessment at t3; Post t3: post-programme assessment at t3. The variation in sample size is due to missing and invalid data (total sample size, n = 18). Values are given as mean ± SD, with higher values indicating a greater proficiency; * $p < .05$; ** $p < .01$; *** $p < .001$.

4.2. Conclusion

This programme is an important step to sustainably improving CST in Austria. A set of standards for certification developed for TTT and CST will help to guarantee high quality and consistency. The Austrian programme can provide a model for similar initiatives in other countries.

4.3. Practice Implications

Implementation of best practices in training trainers and communication skills teaching can be guided by a structured approach. Those wanting to implement similar programmes can benefit from strengths and suggestions for improvement identified in the process of developing, implementing and evaluating this national project.

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CRediT authorship contribution statement

Marlene Sator: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing, **Peter Holler:** Data curation, Formal analysis, Investigation, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing, **Marcy Rosenbaum:** Conceptualization, Investigation, Methodology, Supervision, Implementation, Validation, Writing – review & editing.

Declaration of interest

none.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.pec.2021.07.046.

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