Disaster Medicine and Public Health Preparedness

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Training Package for Emergency Medical Teams Deployed to Disaster Stricken Areas: Has 'TEAMS' Achieved its Goals?

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Original Research

Cite this article: Bodas M, Peleg K, Adini B, Ragazzoni L (2022) Training package for emergency medical teams deployed to disaster stricken areas: has 'TEAMS' achieved its goals? *Disaster Med Public Health Prep* **16**: 663–669 doi: https://doi.org/10.1017/dmp.2020.359.

First published online: 10 February 2021

Keywords:
EMT; training; TEAMS training package; team work; humanitarian aid

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Abstract

In spite of their good intentions, Emergency Medical Teams (EMTs) were relatively disorganized for many years. To enhance the efficient provision of EMT's field team work, the Training for Emergency Medical Teams and European Medical Corps (TEAMS) project was established. The purpose of this study was to assess the effectiveness and quality of the TEAMS training package in 2 pilot training programs in Germany and Turkey. A total of 19 German and 29 Turkish participants completed the TEAMS training package. Participants were asked to complete a set of questionnaires designed to assess self-efficacy, team work, and quality of training. The results suggest an improvement for both teams' self-efficacy and team work. The self-efficacy scale improved from 3.912 (± 0.655 SD) prior to training to 4.580 (± 0.369 SD) after training (out of 5). Team work improved from 3.085 (± 0.591 SD) to 3.556 (± 0.339 SD) (out of 4). The overall mean score of the quality of the training scale was 4.443 (± 0.671 SD) (out of 5). In conclusion, The TEAMS Training Package for Emergency Medical Teams has been demonstrated to be effective in promoting EMT team work capacities, and it is considered by its users to be a useful and appropriate tool for addressing their perceived needs.

Introduction

Disasters and outbreaks regularly have devastating effects on societies and populations.[1] According to the Center for Research on the Epidemiology of Disasters and Emergencies (CRED) and The United Nation's Office for Disaster Risk Reduction (UNISDR), climate-related and geophysical disasters between 1998 and 2017 killed 1.3 million people and affected an additional 4.4 billion who were either injured, became homeless, displaced, or in need of emergency assistance.[1]

To assist affected countries, an increasing number of national and international Emergency Medical Teams (EMTs) have been deployed. These are groups of health practitioners who provide healthcare to disaster-affected populations. However, these EMTs were relatively disorganized for many years. They had no standards to follow and it was not possible to ascertain the quality of the service they provided.[2] Therefore, in an effort to harmonize, standardize and improve the quality of EMTs work in affected areas, the 'EMTs initiative' evolved in 2010 under the umbrella of the World Health Organization (WHO). As of October 2016, there were 59 registered EMTs, 14 of which completed the verification process and are completely classified according to the new WHO classification system for EMTs.[3]

In February 2016, the European Union (EU) launched the European Medical Corps (EMCs) to help mobilize medical and public health teams and equipment for emergencies inside and outside the EU. According to the European Civil Protection and Humanitarian Aid Operations, the EMC will "significantly increase the availability of doctors and medical *equipment in response to emergencies, and allow for better response planning and preparations.*"[4]

While there is potentially great value in deploying EMTs and EMCs to provide medical support in disaster stricken areas, studies have shown that such medical teams frequently lack the essential knowledge and competencies required to provide effective assistance.[5,6]

There have been a range of academic and non-academic inputs into the adaptation of professional competencies to low resource and disaster settings where EMTs will work, but till date no proposition has fully met their requirements.[2] Both researchers and practitioners have emphasized the need to integrate appropriate training as an essential component of preparing EMTs to deploy.[7,8]

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Significant shortcomings in leadership capacities and ineffective coordination within and between teams have been identified as problems requiring specific training to solve.[5] Tzeng et al,[9] stressed the need to enhance levels of confidence in multidisciplinary collaboration with team members during disaster response, in order to improve the function of medical teams when deployed outside of their routine facilities. Moving forward, team work training for EMTs needs to be well defined in terms of scope, curriculum and teaching modalities.

To enhance the efficient provision of EMC/EMT field team work, the Training for Emergency Medical Teams and European Medical Corps (TEAMS) project was established. Its objective was to develop, pilot and assess a standardized, validated and cost effective training package which was adaptable to different types of EMCs/EMTs, focused on operational team training for EMCs/EMTs, and was sustainable within low income countries and resource poor settings. The outlines of the TEAMS Training Package are presented in Table 1.

The purpose of this study was to assess the effectiveness and quality of the TEAMS training package in 2 pilot training programs implemented in Germany and Turkey, based on 2 aspects: (a) assessment of the effectiveness of the training package to increase self-efficacy and team work, and (b) assessment of the quality of the pilot training events organized.

Methods

Study Design

This study examined the change in 3 major constructs, i.e., team work, perceived self-efficacy, and perceived quality of training, among participants of the TEAMS Training (see following). The comparison was conducted for each participant responding to questionnaires administered before and immediately after the training.

The TEAMS Training Package

The TEAMS Training Package and Platform were designed to support the development and improvement of an EMTs' team work. Through a series of 8 exercises, EMT personnel will be able to train for scenarios likely to be met on the field, while focusing on the importance of team work in achieving their goals.

The TEAMS Training Package is comprised of a set of 8 innovative blended-learning teaching materials and simulation-based exercises. Each exercise is a complete stand-alone module consisting of a concept note, learning objectives sheet, debriefing tool, and a variety of supplementary documents aimed at facilitating the exercise such as 'injects' (unscheduled injection into the simulated scenario), annexes, reading materials and gaming accessories.

The TEAMS Trainings

The training exercises' components of the TEAMS Training Package were recently put to the test in Germany and Turkey in the context of the first and second pilot training exercises (respectively) within the TEAMS Project. The training in Germany took place in Irsee between September 3 and September 6, 2018 and was conducted by Humedica, a WHO-certified Type 1 Fixed EMT. The training in Turkey took place in Istanbul between October 22 and 25, 2018 and was conducted by Istanbul Medeniyet University, which overlooks the activities of a Type 2 EMT. During these pilot trainings, all 8 exercises comprising of the TEAMS Training Package were performed and evaluated.

Population and Sample

Overall, 19 German and 29 Turkish training participants completed the TEAMS training package. In each training exercise there were 3 trainers while the remainder of the participants were trainees (EMT physicians, nurses, logisticians, coordinators, etc.). Of the total, 14 participants (29.2%) were women (11 German and 3 Turkish). All participants in the training and subsequent evaluations were EMT employees/volunteers who are expected to be deployed to disaster-affected areas upon need. All participants were invited to be included in the evaluation's sample and all chose to partake. Informed consent was obtained from all participants.

Variables and Tools

The evaluation of the TEAMS training program focused on 3 main constructs: (a) Self-efficacy—this index measures individual perceptions of the team's capabilities to galvanize motivation, cognitive resources, and courses of action needed to meet given situational demands; (b) Team work skills—this index measures individual perceptions of leadership, team dynamics, situation awareness, and effective task management; and (c) Quality of Training—this index measures individual perceptions of the overall efficacy, appropriateness, and contribution to the team. A slightly different questionnaire was used to assess quality of training by trainees versus trainers.

Assessment of the selected variables was conducted using validated and/or original measurement tools created or adapted for the purpose of this evaluation: (a) Self-efficacy of the team was assessed using an adapted version of a scale developed by Chen, Gully, and Eden (2001).[10] In the current evaluation data, this scale scored sufficiently high on the reliability scale (Cronbach's alpha = 0.915 and 0.787 before and after the training, respectively); (b) Team work was assessed using the validated tool "Team Emergency Assessment Measure" developed by Cooper, et al. (2010).[11] This scale scored sufficiently high on the reliability scale (Cronbach's alpha = 0.890 and 0.795 before and after the training, respectively); and (c) Quality of training was assessed using a questionnaire specifically designed for the purpose of this evaluation (Cronbach's alpha = 0.816).

All assessment tools were based on Likert-scale measurement. Self-efficacy and Quality of training were assessed using a Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly Agree). Team work was assessed using a Likert scale ranging from 0 (Never/hardly ever) to 4 (Always/Nearly always). Tools are available upon request to the corresponding author.

Procedure

Participants were informed during the first day of the training week about the evaluation process and its purpose. Informed consent was requested from all participants willing to partake in the evaluation process. Subsequently, participants were asked to complete the first round of data collection by completing the self-efficacy and team work questionnaire. The information collected at this stage was considered as the 'pre-training' data. Upon the completion of the last day of training, participants were asked to re-take the self-efficacy and team work questionnaires, as well as to complete the Quality of Training questionnaire. The information collected at this stage was considered as the 'post-training' data. For the sake of cross referencing responses, participants were asked to indicate a short designated ID tag on their questionnaire

https://doi.org/10.1017/dmp.2020.359 Published online by Cambridge University Press

Table 1. Outlines of the TEAMS training package

#	Exercise title	Type of exercise	Phase of the humanitarian mission	Exercise scope	Learning Objectives
1	**PREPARING FOR DEPLOYMENT**	Tabletop exercise	Pre-deployment	This exercise simulates the first meeting of a group of EMT members assigned to deploy in response to an earthquake in a fictitious country. Before heading to the field, the team members introduce to each other, get information about the mission and understand what will be their roles once on the field. They will also have to work together on different preparatory tasks for the imminent deployment.	• To effectively manage the information received before deployment • To understand the different EMT staff roles within the team • To work collaboratively for the preparation of the EMT deployment
2	**ARRIVING AND SETTING UP**	Functional exercise	Arrival and set up	This exercise simulates the arrival and set up of the EMT in the field. On arrival participants will need to meet relevant authorities and organizations managing the response to the earthquake, obtain important information, and get registered to work as an EMT in the country.	• To be aware of the communication and registration procedures on arrival in the disaster area • To build up the field hospital in the target area • To get familiar with the field equipment and logistics
3	**SETTING PRIORITIES**	Functional exercise	Operational	During this exercise the EMT members will be confronted with patients in very critical conditions and a set of resources to treat these patients. The team will have to decide how to allocate the available resources in order to save the highest number of patients. A role player will also intervene during the exercise, taking the role of a father whose child is admitted within the EMT facility in a critical state.	• To manage situations involving difficult ethical decisions • To navigate between needs and resources in a critical situation • To maximize the response to a critical event with the available resources and the network around
4	**MANAGING OPERATIONAL INFORMATION**	Tabletop exercise	Operational	In this exercise team members will receive different sources of information related to EMT activities that they will read and consider to plan for their activities in the upcoming days. This planning will be shared with the EMT HQ office in a situation report. The team will also have to report their activities to the EMT Coordination Cell (EMTCC) using the Minimum Data Set (MDS) forms.	• To recognize the main tools for EMT data collection and reporting • To correctly analyze and interpret data related to EMT activities • To report EMT data following the established channels • To deal with emerging situations while performing other routine tasks • To work collaboratively during data collection and reporting tasks
5	**RESPONDING TO A MASS CASUALTY INCIDENT**	Functional exercise	Operational	In this exercise a Mass Casualty Incident (MCI) will be simulated, following an aftershock. The whole team will have to organize to deal with the high number of casualties arriving at the EMT facility, while constantly communicating with the EMTCC and other partners in the area.	• To effectively communicate with the EMTCC for situation awareness and coordination of a MCI • To appropriately organize as a team and manage a MCI
6	**ADAPTING PRACTICE TO CONTEXT**	Functional exercise	Operational	During this exercise EMT members will have to develop or adapt an available Standard Operating Procedure (SOP) for the management of dead bodies in the local context. Once this is ready they will be confronted with a case of a boy who arrives at the EMT facility and dies shortly after. The team will have to consider the circumstances in which the child was brought in the facility and interact pertinently with the family.	• To adapt EMT procedures to the local context • To manage a clinical emergency case of an unaccompanied minor • To show empathy and responsibility when handling sensitive cases • To understand the position of an EMT during disaster response and work collaboratively with other partners
7	**PLANNING THE EXIT**	Tabletop exercise	Exit	In this exercise, participants will prepare for the EMT exit by planning for the handover of medical activities, logistics, dealing with the local staff and the local community, the management of medical records and possible donations to the local facilities.	• To identify the main actions required for the EMT exit • To understand the importance of adapting the exit strategy to the local context • To effectively deal with the media during emergencies • To work collaboratively towards the exit
8	**DEALING WITH SECURITY THREATS**	Functional exercise	Exit	The module presents a commonly encountered case scenario in humanitarian settings and stresses the importance of both proper planning before undertaking overland road travels and adequate team/individual behavior when crossing checkpoints.	• To understand the reasons of the road movement • To plan the trip in order to reduce vulnerability during the overland road travel • To demonstrate good skills in the utilization of satellite-based navigation and other communication devices • To demonstrate good knowledge of the basic behavioral tips when crossing a checkpoint • To demonstrate good communication skills • To demonstrate good negotiation skills

https://doi.org/10.1017/dmp.2020.359 Published online by Cambridge University Press

in a manner that will allow matching of the data without compromising their anonymity.

In Germany, the original English versions of the questionnaires were used. In Turkey, all questionnaires were translated into Turkish and were administered in Turkish. Prior to that, validation of translation accuracy was conducted by translating the Turkish version back to English by an independent translator and comparing the result to the original. Minor adaptations in language were performed to ensure adherence to original intents. The complete questionnaires in English are available as supplementary materials.

Statistical Analysis

The statistical analysis of the results was performed using IBM's SPSS Version 25 (IBM Corp, Armonk, NY). The analysis included both descriptive and analytical methods, and the statistical tests were chosen according to variables distribution. Prior to analysis, indices were generated and their reliability was assessed using Cronbach's alpha.

Given the small sample size, non-parametric tests were used. Spearman correlation test (with multiple comparison correction) was used to examine correlations between continuous variables. Mann-Whitney U and Wilcoxon tests were used to compare means of independent and paired categorical variables, respectively. In all statistical analyses performed, a p-value of 0.05 or less was deemed as statistically significant.

Results

Team's Self-Efficacy

In the overall sample, out of a maximum score of 5, the mean score (N = 42) of the self-efficacy scale was 3.912 ± 0.655SD (95% CI: 3.708, 4.116) prior to training and 4.580 ± 0.369SD (95% CI: 4.465, 4.695) following the training exercise. This difference is statistically significant according to Wilcoxon paired samples test (W = 713.00, Z = 4.511, $p < 0.001$). The median values were similar to the means (3.875 and 4.625 before and after the training, respectively). An increase in the selection of the top option of the Likert scale was also observed for all items following training. See Table 2.

A residual variable of the difference in self-efficacy was computed by subtracting the mean score of self-efficacy before the training from the score afterwards. There was no difference demonstrated between men (0.69 ± 0.75SD) and women (0.61 ± 0.59SD) for this measurement according to the Mann-Whitney U-test (U = 200.00, Z = 0.314, p = 0.768). There was no difference observed also between German (0.42 ± 0.62SD) and Turkish (0.82 ± 0.71SD) participants (U = 271.50, Z = 1.648, p = 0.099).

There was no correlation observed between age and perception of a team's self-efficacy neither before (r(42) = 0.296, $p = 0.057$) or after the training exercise (r(42) = 0.065, $p = 0.684$), according to the Spearman Correlation test.

Team Work

In the overall sample, out of a maximum score of 4, the mean score (N = 45) of the team work scale was 3.085 ± 0.591SD (95% CI: 2.890, 3.271) prior to training and 3.556 ± 0.339 SD (95% CI: 3.460, 3.672) following the training. This difference is statistically significant according to the Wilcoxon paired samples test (W = 890.00, Z = 4.209, $p < 0.001$). The median values were similar

Table 2. Comparison of means, percentage of top option selection and their change per item of the self-efficacy scale between countries (N = 42)

Item	German training (n = 16)				Turkish training (n = 26)			
	Mean score after training (± SD)	Mean Change[a]	% of top option after training	Change in % of top option[b]	Mean score after training (± SD)	Mean Change[a]	% of top option after training	Change in % of top option[b]
1. Our team will be able to achieve most of the goals that we have set for the team	4.563 (± 0.629)	+ 0.188	62.5%	+ 18.7%	4.654 (± 0.485)	+ 0.846	65.4%	+ 42.3%
2. When facing difficult tasks, our team is certain that we will accomplish them	4.625 (± 0.500)	+ 0.375	62.5%	+ 31.2%	4.462 (± 0.582)	+ 0.731	50.0%	+ 30.8%
3. In general, our team thinks that we can obtain outcomes that are important to the team	4.625 (± 0.500)	+ 0.375	62.5%	+ 25.0%	4.731 (± 0.604)	+ 1.011	80.8%	+ 60.8%
4. Our team believes that we can succeed at most any endeavor to which we set our minds	4.375 (± 0.500)	+ 0.375	37.5%	+ 12.5%	4.692 (± 0.549)	+ 0.653	73.1%	+ 42.3%
5. Our team will be able to successfully overcome many challenges	4.750 (± 0.447)	+ 0.438	75.0%	+ 43.7%	4.615 (± 0.496)	+ 0.653	61.5%	+ 30.7%
6. Our team is confident that we can perform effectively on many different tasks	4.688 (± 0.479)	+ 0.688	68.8%	+ 43.8%	4.615 (± 0.637)	+ 0.855	69.2%	+ 41.2%
7. Compared to other teams, our team can do most tasks very well	4.063 (± 0.680)	+ 0.375	25.0%	+ 6.2%	4.692 (± 0.549)	+ 1.000	73.1%	+ 50.0%
8. Even when things are tough, our team can perform quite well	4.750 (± 0.447)	+ 0.562	75.0%	+ 43.7%	4.308 (± 0.788)	+ 0.885	46.2%	+ 30.8%

[a]Change in mean score was computed by subtracting the mean score prior to training from the one after the training;
[b]Change in percentage of top option was computed by subtracting the proportion of top option prior to training from the one after the training.

https://doi.org/10.1017/dmp.2020.359 Published online by Cambridge University Press

to the means (3.182 and 3.636 before and after the training, respectively). An increase in the selection of the top option of the Likert scale was also observed for all items following training. See Table 3.

A residual variable of the difference in team work was computed by subtracting the mean score of team work before the training from the score afterwards. There was no difference shown between men (0.55 ± 0.80SD) and women (0.43 ± 0.61SD) for this measurement according to Mann-Whitney U-test ($U = 182.00$, $Z = -0.861$, $p = 0.389$). There was no difference observed also between German (0.39 ± 0.37SD) and Turkish (0.53 ± 0.82SD) participants ($U = 297.00$, $Z = 1.152$, $p = 0.249$).

There was no correlation observed between age and the perception of a team's self-efficacy either before ($r(45) = 0.043$, $p = 0.780$) or after the training exercise ($r(45) = -0.005$, $p = 0.972$), according to the Spearman Correlation test.

In addition, item 12 on the scale prompted participants to assess the global rating of the team's non-technical performance on a scale of 1 to 10. The overall mean rating was 7.684 (± 1.612 SD) prior to training and 8.584 (± 0.805 SD) following the training. This difference was statistically significant according to the Wilcoxon Test ($W = 269.000$, $Z = 2.900$, $p = 0.004$).

A residual variable of the difference in responses to item 12 (global rating of the team's non-technical performance) was computed by subtracting the mean score of this item before the training from the score afterwards. There were no differences observed between the countries ($p = 0.126$) and genders ($p = 1.000$) for this measurement.

Quality of Training

The quality of training was assessed once, at the end of each pilot training exercise, by all participants (N = 48). The overall mean score of the quality of training scale was 4.443 (± 0.671 SD). There were no differences observed between men (4.595 ± 0.308SD) and women (4.076 ± 1.087SD), according to the Mann-Whitney U-test ($U = 320.00$, $Z = 1.867$, $p = 0.062$) were observed. Turkish participants (4.651 ± 0.263SD) evaluated the training higher than German participants (4.127 ± 0.945SD), according to the same test ($U = 416.50$, $Z = 2.984$, $p = 0.003$). The quality of training scale is not correlated with age or the self-efficacy and team work scales (data not shown).

Both trainers and trainees assessed the quality of the training as equally high (4.431 ± 0.322SD for trainers and 4.445 ± 0.709SD for trainees). Overall, 75.9% of trainees and 100.0% of trainers thought that this training was effective and useful to the team. See Table 4.

Participants were also prompted to provide open text feedback. The data here suggests that participants held a positive attitude towards the quality of the training. The verbal input of German participants indicated that the aspects that were to be preserved are the mix of tabletop and practical exercises, the engagement of team members, roleplaying, and realistic scenarios. The most pressing issue to improve was the provision of a more detailed explanation to trainees of the individual exercises and their goals prior to performing them. The verbal input of Turkish participants indicated that aspects to be preserved are the team work nature of the TEAMS package and the manner in which it endows knowledge, experience and confidence. The Turkish participants found some of the scenarios unrealistic

Table 3. Comparison of means, percentage of top option and their change per item of the team work scale between countries (N = 45)

Item	German training (n = 19)				Turkish training (n = 26)			
	Mean score after training (± SD)	Mean Change[a]	% of top option after training	Change in % of top option[b]	Mean score after training (± SD)	Mean Change[a]	% of top option after training	Change in % of top option[b]
1. The team leader let the team know what was expected of them through direction and command	3.790 (± 0.419)	+ 0.527	78.9%	+ 36.8%	3.769 (± 0.514)	+ 0.423	80.8%	+ 23.1%
2. The team leader maintained a global perspective	3.684 (± 0.478)	+ 0.316	68.4%	+ 26.3%	3.769 (± 0.514)	+ 0.538	80.8%	+ 34.6%
3. The team communicated effectively	3.368 (± 0.684)	+ 0.263	47.4%	+ 31.6%	3.731 (± 0.452)	+ 0.577	73.1%	+ 26.9%
4. The team worked together to complete the tasks in a timely manner	3.790 (± 0.419)	+ 0.422	78.9%	+ 42.1%	3.769 (± 0.430)	+ 0.730	76.9%	+ 42.3%
5. The team acted with composure and control	3.421 (± 0.607)	+ 0.368	47.4%	31.6%	3.000 (± 0.748)	+ 0.231	23.1%	− 3.8%
6. The team morale was positive	3.945 (± 0.229)	+ 0.524	94.5%	+ 52.4%	3.769 (± 0.430)	+ 0.615	76.9%	+ 30.7%
7. The team adapted to changing situations	3.684 (± 0.478)	+ 0.368	68.4%	+ 36.8%	3.423 (± 0.902)	+ 0.692	61.5%	+ 34.6%
8. The team monitored and reassessed the situation	3.556 (± 0.511)	+ 0.345	55.6%	+ 29.3%	3.423 (± 0.758)	+ 0.500	53.8%	+ 23.0%
9. The team anticipated potential actions	3.211 (± 0.631)	+ 0.211	31.6%	+ 5.3%	3.308 (± 0.788)	+ 0.500	50.0%	+ 19.2%
10. The team prioritized tasks	3.500 (± 0.515)	+ 0.342	50.0%	+ 18.4%	3.500 (± 0.583)	+ 0.538	53.8%	+ 19.2%
11. The team followed approved standards and guidelines	3.474 (± 0.513)	+ 0.579	47.4%	+ 26.3%	3.423 (± 0.758)	+ 0.500	53.8%	+ 19.2%

[a]Change in mean score was computed by subtracting the mean score prior to training from the one after the training;
[b]Change in percentage of top option was computed by subtracting the proportion of top option prior to training from the one after the training.

https://doi.org/10.1017/dmp.2020.359 Published online by Cambridge University Press

Table 4. Means and percentage of top option selection per item of the Quality of Training questionnaire according to role (N = 48). Mutually exclusive items on the trainers versus trainees versions of the questionnaire are indicated with grey background

Item	Trainees (n = 42)		Trainers (n = 6)	
	Mean (± SD)	% of top option	Mean (± SD)	% of top option
The content of the exercises is relevant for EMT deployments	4.429 (± 0.831)	54.8%	5.000 (± 0.000)	100.0%
I found the scenarios to be realistic (i.e., simulating real situations that can happen in the field)	4.381 (± 0.825)	50.0%	4.167 (± 0.753)	33.3%
The training experience helps to improve the team's performance	4.524 (± 0.862)	66.7%	5.000 (± 0.000)	100.0%
The time allotted to each exercise was sufficient and appropriate	4.333 (± 0.874)	50.0%	4.167 (± 0.408)	16.7%
Debriefing after the exercises was useful to the learning process	4.619 (± 0.854)	76.2%	4.667 (± 0.516)	66.7%
Overall, this training was effective and useful to the team	4.619 (± 0.825)	73.8%	4.833 (± 0.408)	83.3%
I found the instructions provided for the exercises to be clear	3.881 (± 0.968)	31.0%		
The training was appropriate to the team's level of experience and knowledge	4.500 (± 0.944)	69.0%		
The exercises were relevant for my professional role in the EMT	4.476 (± 0.917)	64.3%		
This training was beneficial for the EMT	4.691 (± 0.811)	81.0%		
The training materials are easy to understand			4.000 (± 0.632)	16.7%
The training was relevant for all team members			4.167 (± 0.753)	33.3%
The exercises were well designed to meet the learning objectives			4.333 (± 0.516)	33.3%
The exercises are feasible and easy to implement			4.000 (± 0.894)	33.3%
The training package is flexible and can be adapted to varied EMT characteristics			4.333 (± 0.516)	33.3%
The supplementary materials/references suggested in the package were appropriate and useful to the training			4.500 (± 0.548)	50.0%

and suggested that they should be reviewed and adjusted accordingly.

Discussion

Previous studies have shown that sometimes, EMTs deploy to communities struck by disasters, and are unprepared to provide the required services.[5,6] Successful provision of medical services by EMTs is dependent on appropriate training of the staff prior to their deployment.[12,13]

Most especially, there is a need to empower the EMTs to work as close-knitted teams before and during operation in unfamiliar environments, adapt professional competencies to limited-resource conditions, and support each other through multi-disciplinary skills and experience.[13,14]

The importance of facilitating functions of the EMTs when operating under such challenging conditions prompted the development of designated training packages in the TEAMS project. The evaluation of the TEAMS pilot training in Germany and Turkey indicates overall positive attitudes of participants toward the TEAMS Training Package. The data indicates that participants improved their perception of self-efficacy and team work following the training, suggesting that the training has a positive effect over those perceptual constructs among participants. These findings are aligned with previous studies which presented that simulation training programs contribute to enhancement of self-efficacy, communication skills, team work and leadership competencies of healthcare teams.[15,16] As it was shown that self-efficacy is related to the ability to successfully perform tasks during disasters,[17,18] utilization of the training package is expected to contribute to the preparedness of EMTs for deployment.

In contrast to previous studies, gender was not found to correlate with either team work or self-efficacy before or after the training programs. For example, Rosander and Johnson (2017),[19] found that "gender is a moderator for professional confidence" and that men were more confident compared to women when acting as ambulance incident commanders. Ross et. al. (2018),[20] also found that following training programs, women perceived a lower capacity to apply a tourniquet compared to men, even when their actual competency did not differ.

In summary, the TEAMS training package appears to be a high quality product, which was considered by its users to be a useful and appropriate tool for addressing their perceived needs. The similarity of the findings following the implementation of the training packages in the 2 different systems—the German and the Turkish EMTs, despite the diversity of their cultural characteristics, type and size of EMT, mix of personnel, and experience in previous deployments to disasters, suggests that the training programs may benefit many different EMTs. The newly developed package is available online, free-of-charge, to any relevant stakeholder interested in implementing it in the context of their local EMTs. By creating a validated, cost-effective training tool for EMTs, TEAMS project further contributes to the global effort to promote a more high quality EMTs system, all in the benefit of affected populations and in an effort to save lives in emergencies.

Limitations

This study has 1 major limitation, i.e., the small sample size attributed to the number of participants in the training programs. This limitation resulted in fairly large standard deviation, rendering the conclusion making difficult. To overcome this obstacle, non-parametric tests were used; however, conclusions should be noted with caution. Given that this paper describes the outcomes of a pilot study, we would propose to explore further validity of the results with other EMTs choosing to train with the TEAMS Training Package.

https://doi.org/10.1017/dmp.2020.359 Published online by Cambridge University Press

Conclusion

The TEAMS Training Package for Emergency Medical Teams is has been demonstrated to be effective in promoting EMT team work capacity, and it is considered by its users to be a useful and appropriate tool for addressing their perceived needs.

Supplementary material. To view supplementary material for this article, please visit https://doi.org/10.1017/dmp.2020.359

Acknowledgments. This publication reflects the authors' views only; the European Commission is not responsible for any use that may be made of the information it contains. The authors acknowledge the paramount contribution of the TEAMS consortium members from HCRI, The University of Manchester, Karolinska Institute, Istanbul University, Humedica, and Novareckon Ltd. The authors also acknowledge the contribution of the WHO EMT Secretariat.

Conflict of interest. The authors report no conflict of interest.

Funding statement. This study was performed in the context of the European Commission funded project 'TEAMS.' The authors acknowledge the financial support from Directorate-General for European Civil Protection and Humanitarian Aid Operations (Agreement Number ECHO/SUB/2016/740145/PREP/16).

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