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Funding, Eva; Viftrup, Dorte Toudal; Knudsen, Mark Bech; Haunstrup, Laura Mors; Tolver, Anders; Clemmensen, Stine Novrup

ORIGINAL RESEARCH

Impact of Training in Serious Illness Communication and Work Life Balance on Physicians' Self-Efficacy, Clinical Practice and Perception of Roles

Eva Funding [ID][1,2], Dorte Toudal Viftrup [ID][3], Mark Bech Knudsen [ID][4], Laura Mors Haunstrup[5], Anders Tolver[4], Stine Novrup Clemmensen[1]

[1]Department of Hematology, Rigshospitalet, Copenhagen, Denmark; [2]Institute of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark; [3]Department of Public Health, University of Southern Denmark, Odense, Denmark; [4]Data Science Lab, Department of Mathematical Sciences, University of Copenhagen, Copenhagen, Denmark; [5]Department of Hematology, Aalborg University Hospital, Aalborg, Denmark

Correspondence: Eva Funding, Department of Hematology, Rigshospitalet, Copenhagen, Denmark, Email eva.funding@regionh.dk

Purpose: Serious illness communication is a core task in hemato-oncology that require advanced communication skills and can be emotionally demanding. A 2-day course was implemented as a mandatory part of the 5-year hematology specialist training program in Denmark in 2021. The aim of this study was to assess the quantitative and qualitative effect of course participation on self-efficacy in serious illness communication and measure the prevalence of burnout among physicians in hematology specialist training.

Methods: For quantitative assessment course participants answered three questionnaires: Self-efficacy Advance care planning (ACP), Self-efficacy Existential communication (EC) and the Copenhagen Burnout Inventory at baseline, 4 and 12 weeks after the course. The control group answered the questionnaires once. Qualitative assessment was performed as structured group interviews with course participants 4 weeks after the course, transcribed, coded, and transformed into themes.

Results: All self-efficacy EC scores and 12 out of 17 self-efficacy ACP scores improved after the course, though mostly non-significant. Course participants reported altered clinical practice and perception of role as a physician. The physicians' confidence that they could find the time to discuss ACP were low and remained low. The prevalence of burnout was high. Burnout levels were non-significantly lower after the course.

Conclusion: A mandatory course of formal training can increase physician self-efficacy in serious illness communication and alter clinical practice and perception of roles. The high level of burnout among physicians in hemato-oncology calls for institutional interventions in addition to training.

Keywords: hemato-oncology, communication skills training, burnout, mixed methods study

Introduction

Communication with patients exposed to serious illness and facing life and death decisions is a core task in hemato-oncology as well as in primary care, internal medicine and surgery.[1] In Denmark, communication skills training is an integrated part of the pregraduate curriculum in medical school, practicing basic communication skills, active listening, and delivering bad news. After graduation these skills must be transferred to daily clinical practice, where direct observation with feed-back from a mentor is limited to rare occasions. It is widely recognized that healthcare professionals involved in end-of-life care should be trained to improve their communication skills.[2-6] In the 5-year hematology specialist training in Denmark, the formal training focus is on medical and academic expertise. Meanwhile, the complexity of patient communication increase in parallel with the growing expertise and responsibility during specialist training. Serious illness communication and end of life care raise existential questions, not thoroughly addressed in the

basic training as an undergraduate student. Physicians who feel insufficiently trained in communication skills are at a higher risk of burnout than those who feel sufficiently trained.[7–10]

Therefore, a 2-day course of formal training was implemented as a mandatory part of the hematology specialist training program in Denmark in 2021. The method and content of the course can be adapted to specialists in any field engaged in end-of-life care. The course consisted of two times four hours of communication exercises, targeting serious illness communication with focus on discussing patients' and caregivers' goals of care, worries, values, and hope. Professional actors performed as patients in "improvised theatre", and participants took turns acting while their peers watched, with time-outs for group discussion and reflection. This was combined with sessions aiming to create reflection on participants own existential values, work-life balance, symptoms and management of burnout and work overload, and training in debriefing with peers after traumatic events.

Mata et al reviewed the effect of communication skills training on health professional´s self-efficacy in a meta-analysis from 2021, identifying 8 experimental studies with varying methods of teaching and assessment.[6] The authors recommend valid and diversified evaluation in future programs to complement existing data. The use of actors and psychologists in this course increase cost and add to the importance of evaluation.

The aim of this study was to assess the quantitative and qualitative effect of a mandatory course on self-efficacy in conducting goals of care with patients, to optimize future courses and promote implementation of mandatory communication training of hospital physicians. Furthermore, to measure the prevalence of burnout among physicians in hematology specialist training in Denmark.

Materials and Methods

Participants

All physicians in haematology specialist training in Denmark in 2021 were invited to participate in the study. 17 out of 77 physicians in specialist training were allocated to the first 2-day course "Communication in haematology" in October 2021 and 15 participated in the study. Non-course participants served as controls, and 28 out of the remaining 60 specialist trainees participated. Participation in the study was voluntary. According to Danish legislation, review board approval is not required for surveys and interviews.

Data Collection

Electronic questionnaires were distributed and collected via REDCap™, hosted by the Capital Region, Copenhagen, Denmark, according to standard data protection requirements for scientific studies. Interviews were conducted virtually, digitally recorded, and transcribed verbatim. The study was approved by the Capital Region data protection knowledge centre.

Assessment of Self-Efficacy

Two validated questionnaires were used, "Self-efficacy advance care planning (ACP)" consisting of 17 items and a control question, and "Self-efficacy existential communication (EC)" where 6 out of 8 items were included in this study.[11,12] Each item consists of two questions; "How confident are you that you can…?" and "How important is it for you to be able to…in your daily professional work?" on a scale from 1 to 5. Two self-efficacy EC items on religious concerns were left out, as religion was not a focus for the course. The self-efficacy EC scores are presented for each item separately, whereas self-efficacy ACP is presented as a single score based on the average of all 17 items, in addition to scores for each item.

Assessment of Burnout

Burnout was assessed with the Copenhagen burnout inventory (CBI), consisting of three scales: personal burnout, work-related burnout, and patient-related burnout, containing 6–7 items with a score up to 100.[13] The score on a scale is the average of the scores for each item. An average score of 50 or more in a scale is a moderate to high degree of burnout.[13,14]

Course participants answered the self-efficacy and burnout questionnaires one week before the course (n=15), 4 weeks after (n=12) and 12 weeks after (n=14). Controls answered the questionnaires once (n=27). Prevalence was calculated based on answers from controls and participants before the course.

Statistical Analysis

For course participants who answered the survey both before and after the course, change in self-efficacy was evaluated using a Wilcoxon signed-rank test to avoid misspecification due to non-normality of data. Controls were compared with course participants 4 weeks after the course using the Wilcoxon rank-sum test. Statistical analysis was performed using R version 4.2.1.

Qualitative Assessment

On the last day of the course the participants were invited to take part in focus group interviews. 12 out of 17 participants signed up to participate in one of two online interviews on different dates to their convenience. The interviews took place four weeks after completion of the course. On the days of the interviews, only nine participants (5 female, 4 male) were able to attend. The focus group interviews took approximately 60 minutes and were organized with a moderator guide focusing on whether the course had influenced or changed anything in the daily practice and communication of the participants, and which aspects of the course had contributed to change and in what way. The importance of the participants' own descriptions during the interviews were emphasized, and the moderator guide introduced less sensitive questions first and subsequently more sensitive questions in order to facilitate disclosure of the participants' personal experience and perspectives. The second author moderated both focus group interviews. The interviews were audio-recorded and transcribed verbatim in agreement with Reflexive Thematic Analysis by Braun and Clark.[15]

Results

Course participants were slightly older than controls (mean age 39 versus 37 years), had been physicians longer (mean timespan 10 versus 8 years) and had been in specialist training longer (mean year of training 4.0 versus 3.2 years). The gender distribution was 10 female (67%) and 5 male (33%) course participants, compared to 16 female (59%) and 11 male (41%) controls.

Self-Efficacy

For course participants, mean scores for self-efficacy and perceived importance of each item on the EC scale before and after the course are shown in Figure 1. The mean efficacy score in EC increased for all 6 questions, whereas the mean score of perceived importance score increased in 4 out of 6 questions. The change in scores in self-efficacy EC reached statistical significance for item 1 and 3 (Table 1), concerning patients' existential concerns and needs and the physician's ability to endure situations without an answer or a solution. Compared to controls, course participants scored significantly higher in item 5; the ability to work with own barriers to discuss existential issues. Of note, the scores for importance of EC were already high before the course, mean score 4.2–4.8, leaving little room for improvement.

Mean scores for the 17 items of the self-efficacy ACP scale before and after the course are shown in Table 2. The mean self-efficacy score for course participants improved in 14 out of 17 items but decreased or remained unchanged in 4 items (question 2, 4, 6 and 8). The mean change for each item in the ACP scale only reached statistical significance in item 14; the confidence to openly discuss insecurities with the patient, and compared to the control group, course participants had a significantly higher score in item 9, the confidence to ensure that patients treatment preferences would be honored. The single item ACP score increased non-significantly from 3.5 to 3.7 after the course, compared to 3.5 for the control group. The increase is confirmed by the control question (item 18) increasing from a mean score of 3.5 to 3.6, compared to 3.1 for controls.

Self-efficacy scores were not significantly correlated with gender, age or seniority, expressed as years being a physician and years in specialist training.
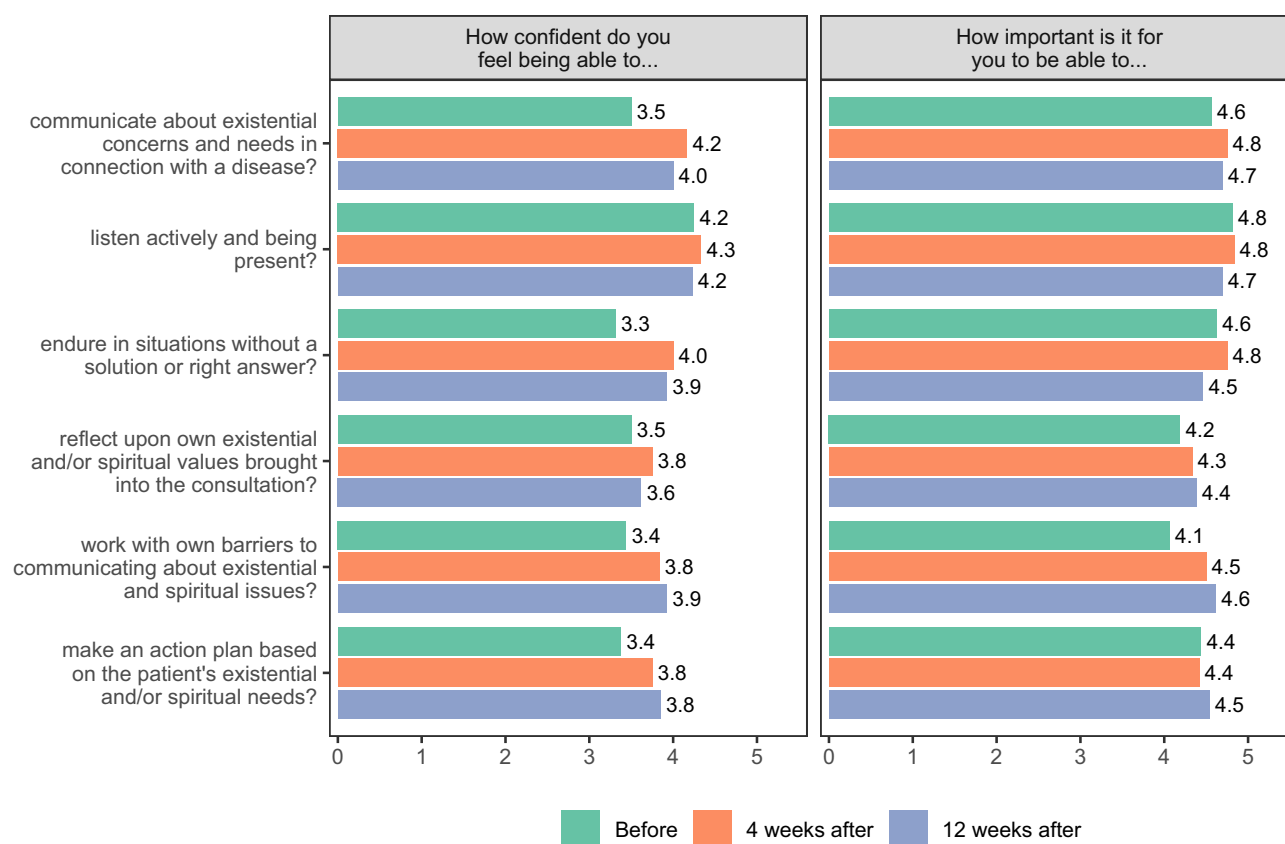
Figure 1 Self-efficacy existential communication Mean self-efficacy scores for course participants before and 4 and 12 weeks after the course.

Burnout

For course participants completing the burnout questionnaire more than once, there were no significant difference in mean score before and after the course, nor in comparison with the control group. Mean burnout scores are shown in Table 3. The

Table 1 Self-Efficacy Existential Communication

How Confident do You Feel Being Able to	Before Mean (SD)	After Mean (SD)	Change	P-value[a]	Controls Mean (SD)	P-value[b]
1. communicate about existential concerns and needs in connection with a disease?	3.5 (0.8)	4.2 (0.4)	0.7	**0.03**	3.4 (0.7)	**0.0009**
2. listen actively and being present?	4.3 (0.7)	4.3 (0.5)	0.0	1.00	4.2 (0.6)	0.6
3. endure in situations without a solution or right answer?	3.4 (1.2)	4.0 (0.6)	0.6	**0.05**	3.5 (0.9)	0.16
4. reflect upon own existential and/or spiritual values brought into the consultation?	3.5 (0.8)	3.8 (0.8)	0.2	0.34	3.1 (0.9)	0.098
5. work with own barriers to communicating about existential and spiritual issues?	3.4 (0.8)	3.8 (0.4)	0.4	0.15	3.1 (0.8)	**0.0071**
6. make an action plan based on the patient's existential and/or spiritual needs?	3.4 (0.8)	3.8 (0.6)	0.3	0.13	3.3 (0.7)	0.12

Notes: Scores for course participants before and 4 weeks after the course, and for controls. Mean score, mean change, and P-values before-after (a) and after-control (b). Significant changes in bold.
Abbreviation: SD, standard deviation.

Table 2 Self-Efficacy Advance Care Planning

How Confident are You that You Can	Before Mean (SD)	After Mean (SD)	Change	P-value[a]	Controls Mean (SD)	P-value[b]
Single item score score (average of 1 to 17)	3.5 (0.6)	3.7 (0.5)	0.17	0.48	3.5 (0.4)	0.34
1. Find the time to discuss the patient's prognosis, preferences and care plan with the patient.	2.9 (1.2)	3.1 (1.0)	0.18	0.57	3.4 (0.9)	0.47
2. Determine how much the patient wants to know about the prognosis.	3.7 (0.8)	3.5 (0.5)	−0.18	0.48	3.5 (0.8)	0.87
3. Determine the level of involvement the patient wants in decision-making.	3.5 (0.8)	3.9 (0.5)	0.36	0.13	3.7 (0.7)	0.39
4. Determine who else (eg, family members) the patient would like to be involved in decision-making	3.9 (0.7)	3.6 (0.8)	−0.27	0.34	3.6 (0.6)	0.7
5. Provide the desired level of information and guidance needed to help the patient in decision-making.	3.5 (0.9)	3.8 (0.6)	0.36	0.24	3.8 (0.7)	0.98
6. Describe the pros and cons of different life-sustaining treatments.	3.7 (0.9)	3.4 (0.8)	−0.36	0.41	3.6 (0.8)	0.42
7. Determine the patient's specific wishes for types of medical treatment.	3.6 (0.8)	3.6 (0.8)	0.00	1.00	3.4 (0.8)	0.39
8. Discuss and negotiate individualized treatment goals and plans with patient.	3.7 (0.8)	3.6 (0.8)	−0.09	0.86	3.6 (1.0)	0.91
9. Ensure that patient's treatment preferences will be honored at your facility.	3.8 (1.0)	3.8 (0.9)	0.00	1.00	3.1 (0.9)	**0.04**
10. Ensure that patient's treatment preferences will be honored at a hospital if patient is hospitalized.	3.6 (0.7)	3.7 (0.9)	0.09	0.85	3.2 (1.0)	0.14
11. Discuss how to complete a living will with the patient.	2.0 (1.1)	2.5 (1.1)	0.55	0.35	2.2 (0.9)	0.41
12. Determine when there should be a shift in care goals.	2.9 (1.0)	3.6 (0.5)	0.73	0.07	3.3 (0.6)	0.09
13. Reassess the patient's wishes when a shift in care goals is needed.	3.3 (1.0)	3.6 (0.5)	0.36	0.24	3.3 (0.6)	0.09
14. Openly discuss uncertainty with patient when it exists.	3.5 (0.8)	4.2 (0.4)	0.64	0.06	3.6 (0.8)	**0.03**
15. Educate patient and clarify any misperceptions about the disease or prognosis.	3.6 (0.8)	3.9 (0.7)	0.27	0.52	3.6 (0.7)	0.36
16. Respond empathetically to patient's and family's concerns.	4.1 (0.5)	4.2 (0.6)	0.09	0.85	4.5 (0.6)	0.2
17. Communicate "bad news" to patients and their families.	3.9 (0.7)	4.1 (0.3)	0.18	0.42	4.2 (0.8)	0.34
18. Engage patients in advance care planning conversations.	3.5 (0.8)	3.6 (0.8)	0.18	0.66	3.1 (0.7)	0.08

Notes: Scores for course participants before and 4 weeks after the course, and for controls. Mean scores, mean change, and p-values before-after (a) and after-control (b). Significant changes in bold.
Abbreviation: SD, standard deviation.

prevalence of moderate to severe burnout with a score of 50 or higher were respectively 10% (n=4) for patient-related burnout, 29% (n=12) for work-related burnout, and 37% for personal burnout (n=15). Only 12% (n=5) reported no symptoms of personal burnout (score under 25). Burnout was not significantly associated with gender, age, nor seniority.

Table 3 Burnout

	Personal Burnout Mean Score (SD)	Work-Related Burnout Mean Score (SD)	Patient-Related Burnout Mean Score (SD)	Moderate/Severe Burnout (%)
Course participants before (n = 15)	45 (22)	40 (25)	22 (19)	40%
Course participants 4 weeks after (n = 11)	49 (26)	42 (27)	26 (22)	36%
Course participants 12 weeks after (n = 13)	44 (20)	35 (22)	25 (23)	38%
Controls (n = 26)	45 (15)	36 (18)	25 (17)	31%

Notes: Mean burnout scores for course participants before, 4 and 12 weeks after the course, and for controls. Proportion reporting moderate to severe burnout (score 50 or higher) in one or more scales.
Abbreviations: n, number; SD, standard deviation.

Qualitative Evaluation

The analysis was carried out in six steps. In step one, the second author became familiar with the dataset and made initial notes. In step two, data were organized into systematic meaning units. The initial notes of each description and meaning unit were transformed into short phrases, and these were discussed between the first and second author and formed into initial codes. In step three, the initial codes were analyzed and transformed into three overall themes across all descriptions in line with the idiographic approach. In step four, these three themes were reviewed, modified, and developed by three authors. In step five, the essence of the themes as well as subthemes were identified. The final writing of the analysis and results was carried out in step six. The three overall themes are: 1) specific changes in practice, 2) self-awareness, and 3) sense of security in the course. Quotes from the participants are shown in Table 4.

Specific Changes in Practice

The first theme involved how the participants had implemented aspects from the course directly in their own practice. The theme comprised three subthemes. They explained how specific aspects of the course made sense in their clinical practice. They could immediately see how the teaching was relevant for specific situations in clinical practice, and they had implemented several aspects of the course one to one in clinical practice, for example specific sentences learned during the improvised theatre. They explained how they had learned from their peers. This referred to specific sentences or reflections from practices of their peers, that they had implemented in their own practice.

Self-Awareness

The second theme involved how the course had facilitated a change in the participants self-awareness. It comprised three subthemes. They explained how after the course their views upon their role and responsibility in relation to patients had changed. Participants explained that they had become more accepting of the things they could not "fix", such as patients' and relatives' sadness and grief. They had begun seeing their role as more supporting and comforting than curing the incurable of the patient's illness. They also explained how they experienced having more courage and less reluctance for communicating difficult topics with patients. They summed it up in the third subtheme as how the course by changing their perceived role as a physician subsequently had changed their practice.

Sense of Security in the Course

The third theme comprised two subthemes involving the importance of the participants feeling secure during the course. They believed benefit from the course was caused by a sense of security in the course. This security was both in relation to the other participants in the course as well as particularly feeling safe during the improvised theatre. The participants emphasized how important it was for them to feel secure, or else they did not think they would have profited from the course.

Table 4 Qualitative Assessment

Themes and Subthemes	Quotes
1. Specific changes in practice	
1a. Making sense	It's something that we unfortunately use quite often in our everyday life, so it was really nice to come home and start using it right away. I thought that was good.
1b. Implemented one to one	It was partly some very specific phrases that I think you can use in a difficult conversation, because sometimes it's hard which words to use and which not to use. I just did it as I remembered it from the course and it even in that form, it actually worked.
1c. Learning from peers	Some of the fellow course participants had some good phrases that you could just pick up. I definitely think that I got some good formulations from some of the other course participants.
2.Self-awareness	
2a. Role and responsibility	So, then I could see that no matter how you do it, it's something they are upset about. I did not think that I was as much of a failure as I usually think when I talk to them. It's just the nature of it. And then there are a lot of things that are problems that we can help fix, but – and as xxx says, there is no. of course there is also a bad way to say that people have myeloma. But even with the good, correct, empathetic doctor, people will of course still be upset because it's a bad news to receive. As a doctor, you do not have to leave thinking, "Oh, it's too bad that she cried when I told her, because it's completely natural that she cried.
2b. More courage and less reluctance	Well, I think that thing with talking to patients about, about the last time even though they are not terminally dying right there. I have - I have probably been - had a tendency NOT to get into that because I thought it was too difficult to get into it on top of everything else, we are struggling with… [.] That's how I started thinking more about it - that it's not something I have to fix… I just need to say… just unpack it a bit, so that - that.
2c. Changing the physician - changing practice	And I think that has been like a "Ah-experience" to work with. And it was probably a. uh, a small process that started there with the actors, and that you uh. had a good experience with it, actually. That. I think I have been a little afraid of saying the wrong thing, and where I probably took away from it was that it matters, so if you do not really say anything, sometimes it just slowly loosens up, and then. You can sort of open up, and not say anything, so you actually get some pretty exciting conversations out of it.
3.Sense of security in the course.	
3a. Other participants	Because you felt comfortable with them, because you had been on courses with them so many times.
3b. improvised theatre	I thought it was. I experienced it as a safe learning situation, so I only have good things to say about that. I thought it was a really nice and safe working environment.

Discussion

We implemented a 2-day course with a curriculum consistent with the "education for life" model as recently proposed by the health Policy for education of health professionals.[16] The course curriculum comprised training in patient centered communication, combined with reflections on how healthcare professionals can learn to live their own life, preserve mental wellbeing, and prevent burnout.

This study, combining validated quantitative questionnaires with qualitative interviews, demonstrate the value of mixed methods. Method triangulation by using different methods to collect data concerning the same phenomenon increase the validity of the results.[17] The qualitative methodology add depth and understanding of the subject.[18] Despite the low number of participants, the improvement in self-efficacy scores after the course, though mostly non-significant, show a trend towards improved self-efficacy in serious illness communication, and the convergence with the interviews consolidate this observation. The items with significant increase in self-efficacy were concordant between the EC and ACP self-efficacy scales, addressing the ability to endure situations without a solution and discuss insecurity. This were in line with the altered perception of role as a physician described in the interviews, accepting the things they could not "fix" and seeing their role as more supporting and comforting, with more

courage and less reluctance to discuss difficult topics. The confidence that they could find the time to discuss ACP were low and remained low. The themes emerging in the interviews provide valuable guidance for future courses, and document that a two-day course has the capability of changing both participants' perception of their role as a physician and their clinical practice.

Exercises were conducted in groups of maximum eight, and this, together with previous acquaintance with their peers, ensured the sense of security that was fundamental for participants.

The course was mandatory and 75% of participants answered all questionnaires, reducing selection bias. This was not the case for the interviews and controls, were only a subgroup participated.

The self-efficacy scores were not significantly associated with seniority, as all participants were undergoing specialist training in hemato-oncology, and therefore within a 5-year range of experience. The mean scores increased after the course in all 6 self-efficacy questions in the EC scale, whereas 13 out of 17 items and the single item score on the ACP scale showed increase in mean score. This could be chance findings, and calls for reproduction in future courses, increasing the number of participants. The control group only answered the questionnaires once, and it was therefore not possible to assess if variation between timepoints occurred to a similar degree in this group. The ACP scale is a very comprehensive assessment of efficacy in advance care planning but was not designed to evaluate this intervention, and not all subjects in the scale were included in the course curriculum. The items with the lowest scores were "finding the time to discuss ACP" and "discuss how to fill out a living will", the former addressing an organizational issue, and the latter not addressed in the course. An improvement in all 17 items could therefore not be expected. A further weakness in self-assessment of efficacy in communication is the lacking patient perspective but was not within scope of this study.

We found a prevalence of moderate to severe personal and work-related burnout of respectively 37% and 29%. This is high, compared to a recent survey of Danish vascular surgeons, reporting moderate to severe personal burnout in 28% and work-related burnout in 16%.[19] The prevalence of moderate to severe patient related burnout was lower but still high compared to vascular surgeons (10% vs 4%). Of note, no participants reported severe patient related burnout (score of 75 or higher) in the present study. A score over 50 has been shown to predict future sickness absence, sleep problems, use of painkillers, and intention to quit.[14] The high scores for work related and personal burnout underscore the relevance of addressing burnout in hematology specialist training. A meta-analysis of interventions to reduce burnout has shown that institutional interventions are more effective than individual-focused interventions.[7]

Conclusion

The study shows that a short mandatory course of formal training can increase physician self-efficacy in serious illness communication and alter clinical practice and perception of roles. The prevalence of burnout was high. Future research should aim to confirm the effectiveness in a larger study not restricted to hemato-oncology. The self-efficacy ACP and EC scales can be used for evaluation, though we suggest tailoring or selecting self-efficacy questions to fit the content of the intervention or course. Qualitative assessment with structured interviews adds value to questionnaires.

The physicians' confidence in their ability to find time to conduct ACP conversations remained low, and constitutes an organizational barrier, as described by Andersson and Sandgren in their recent study of organizational readiness to change.[20] The high level of burnout among physicians in hemato-oncology calls for institutional interventions in addition to training. A work organization allocating time to conduct goals of care conversations could be one the means.

Funding

Disclosure

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