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ORIGINAL ARTICLE

Medical Undergraduate Students' Attitudes and Views After Palliative Medicine Curriculum Reform: A Mixed-Methods Study

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Abstract

Background: A new national competence-based curriculum (NC) of palliative medicine (PM) undergraduate teaching in medical schools has recently been created in Finland. Its effects on students' learning have not been assessed.

Objective: To study the effects of the NC-based PM course on students' attitudes and to explore their views of the PM education.

Methods: The impact of NC on fifth-year medical students' learning was studied at two Finnish universities, which had implemented the NC. The attitude rankings of palliative care (PC) were assessed before and after education using a validated questionnaire. The students' open-ended answers were collected after education and examined qualitatively using the inductive content analysis method. Data were received with an electronic Webropol® survey.

Results: A total of 267 and 149 students reported their attitudes before and after attending the education based on the new NC, respectively. After the course, students felt significantly ($p < 0.05$) less distressed with the idea of encountering dying people, and their attitudes toward PC became more positive. In the qualitative analysis conducted, four categories emerged from the data: students' overall perspectives, developmental needs for the NC, and factors facilitating and preventing learning. Students perceived the PM course as important and supportive of their professional development and that it supported professional growth. Practical improvements to the education were proposed.

Conclusions: The NC-based PM course had a significant positive impact on the students' attitudes toward PC. The students felt that the education facilitated their preparing to physician's profession.

Keywords: attitudes; curriculum reform; undergraduate palliative medicine education

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Introduction

Undergraduate education plays a key role in ensuring that health care professionals have the basic competencies required for palliative care (PC). The World Health Organization has recommended that PC or palliative medicine (PM) should be included as a mandatory subject in medical schools.[1] Still, the lack of educated health care professionals is one of the major aspects preventing the development of PC services.[2–5]

Currently, in many countries, national laws, policies, and recommendations demand that PC should be included in the primary education of health care professionals.[6] However, a recent review found that in only 15 European countries (60%), all medical students are required to study PM as a mandatory subject during their undergraduate education.[6]

In Finland, a new national curriculum for undergraduate teaching of PM has been recently developed as result of multiprofessional work.[7] The Finnish curriculum is based on predefined learning goals, and it aligns well with the pan-European recommendations.[8] The education consists of a dedicated course, and PM as a subject is also integrated into other medical subjects during medical education. Before the implementation of the national curriculum, the amount of PM education varied in Finland, with only two faculties out of five with existing PM teaching program.[9] This previous teaching depended much on teachers' enthusiasm without any national agreement, although the existing curricula were composed according to the European Association for Palliative Care (EAPC) recommendations.[9,10] PM teaching was integrated mostly with oncology. For these reasons, there was an imminent need to implement PM programs to all universities. The new curriculum remains to be evaluated in practice. An abundant amount of evidence shows that the appropriate evaluation of an educational curriculum requires an assessment of graduates' skills, knowledge, attitudes, and reflections.[11–15] The students have a pivotal role both in primary and longitudinal development of an effective educational curriculum.[12,15]

A recent systematic review has provided evidence that various palliative educational interventions cause many positive effects on both nursing and medical undergraduate students.[16] Teaching students end-of-life care and direct exposure to end-of-life care practices during primary education has a positive effect on students' attitudes toward the care of dying patients.[17] After PC, teaching students have reported to experience positive attitudes such as empathy and a sense of holistic care.[18] PC teaching has improved the students' skills in communication and caring for patients and their families and has developed their teamwork skills.[19] Furthermore, patient-centered PC teaching has a positive effect on medical undergraduate students' professional development. Spanish students felt strongly that PC teaching had facilitated their growth.[20]

However, relatively little research about medical students' attitudes about PM education has been made in Finland. Our recent study applied in four of five universities did not find any correlations between the students' previous exposure to dying and suffering among their closest ones and their attitudes on end-of-life care.[9] Piili and colleagues observed a sustained effect of undergraduate PM education in a study documenting a positive correlation between a graduated physician's capacity to make PC decisions and previously obtained undergraduate PM education in Finland.[21]

Recent research on European curricula has focused more on teaching methods and specific contents in PM curricula, but there seems to be scarce evidence on existing curricula's effects on students' attitudes.[8,19,22,23] However, it has been shown that favorable attitudes toward PC can influence practices—for example, a favorable attitude can predict more frequent collaboration with palliative care teams.[24] The need for more research on this subject is evident when it is shown that students' attitudes toward death and PC can be changed through education.[9,17,18]

The Finnish national curriculum was based on careful research about the needs of PC competences among health care professionals,[7,25] but its influences on students' attitudes and learning experiences have not been studied. Therefore, we aimed to study the effects of the new national PM curriculum on students' attitudes and the students' views of the PM education they have received.

Methods

Study design

The study design was a prospective pre- and posteducational examination. A validated questionnaire[26] about attitudes toward PC, end-of-life care, and death was delivered electronically to all fifth-year medical students before and after the course in two universities. A quantitative analysis was conducted on the answers. Students' views of PM education were also collected electronically via open questions after the mandatory

PM course. The STROBE checklist for cross-sectional studies was used when reporting the results.

Description of the education

In both universities, a goal-directed national curriculum was applied.[27] The new competence-based Finnish curriculum for PM undergraduate medical education is built on a combination of a dedicated PM course and integration with other medical subjects in the medical schools. The integration of PM with other medical subjects was more extensively executed at the University of Turku (UTU) than at the University of Eastern Finland (UEF), while the volume of teaching was larger in UEF (Table 1). The contents of the curricula in these universities agree with the national curriculum.[27]

Participants and data collection

All fifth-year medical students taking part in the first mandatory PM course at UTU ($n = 153$) and at UEF ($n = 178$) were recruited to participate in the present study. The data were collected with an electronic survey (Webropol®), which was included in the students' electronic learning environment at UTU in the academic year 2021–2022 and at UEF in 2022–2023. During these academic years, mandatory PM teaching according to the new national curriculum was included in the programs of these universities for the first time.

Attitude questionnaire

A validated questionnaire[26] about attitudes toward PM, end-of-life care, and death was delivered electronically to all students before and after the course. In addition, the students were asked about their attitudes toward euthanasia and physician-assisted suicide according to a recent inquiry from the Finnish Medical Association.[21] The questionnaire consisted of 24 items, which the responders could either disagree or agree with in degrees using a Likert 1–7 scale.

Qualitative analysis of students' views

In the learning environment, the students were asked to respond to open-ended questions about their views on perceived PM education. A descriptive qualitative approach, applying inductive content analysis, was used to examine the students' responses.[28]

The intention of the qualitative analysis was to present a comprehensive summary of the phenomenon of interest,[29] which was to analyze the students' views on PM education. In the qualitative analysis, categories emerged from the data, and only the manifest contents were analyzed.[29,30]

The units of analysis consisted of words, sentences, or phrases that constructed a meaning. The analysis followed four phases: (1) transcribing the data verbatim from the questionnaires into a Microsoft Word template and familiarizing with the data; (2) reducing and coding the data that were relevant to the study aim; (3) grouping the reduced expressions based on similarities; and (4) forming subcategories and categories of the data.

Statistical analysis

The attitude rankings are expressed in mean values with 95% intervals of confidence. Statistical significance

Table 1. Practical Outline of a Dedicated PM Course According to National Recommendations and at the Universities of Turku and Eastern Finland

	UTU 2021–2022	UEF 2022–2023
Description of education	**According to the national curriculum**	**According to the national curriculum**
Learning methods	Hrs or description	Hrs or description
Contact teaching: seminars/lectures	3	7
Interactive small groups	7	7.5
Self-learning with e-material in the university web		
Learning diary	15	30
Dying patient encounter	2	4
Multidisciplinary teaching	Yes	Yes
Evaluation		
Self-reflection and learning outcomes	Learning diary	Learning diary
Feedback: ratings for tuition and teachers	Yes	Yes
Written examination	No	No
Total volume ECTS	1.0	2.0
Timing		
Annual presentation	Introduction 4th yr Course 5th year	Introduction 4th yr Course 5th year

ECTS, *exact hours were not available; hrs, amount of used method; NA, exact hours not available; UEF, University of Eastern Finland; UTU, University of Turku; yr, year of the 6-year undergraduate medical studies.

was set at alpha level of $p < 0.05$. All calculations were done using SPSS software.

Ethical considerations

Before starting this research, the Ethical Committee of the UEF was consulted about the need for ethical approval. According to Finnish law, a statement is not required when the study does not intervene with participants' integrity. A specific approval for this study was not needed. Informed consent was obtained from the students for using their responses in this study. Data were pseudonymized. Students were informed that participation in the study or refusal to participate would not impact their course evaluation.

Results

Students' attitudes

A total of 267 (81%) students answered before the dedicated course, and 149 (45%) after it. After the course, students at both universities felt less distress about encountering dying people, and their attitudes toward PC turned more positive (Table 2).

Students' views of PM education

In total, 132 students provided answers to the open questions. Four categories emerged from the data: students' perspectives on PM education overall, development needs for the course structure, factors that facilitate learning about PM, and factors hindering learning about PM. These and 40 subcategories are shown in Table 3 in detail.

In the first main category, "Students' perspectives of PM education," the students described their overall perspectives of the education. Some students expressed that the course facilitated their professional development. As one student described: "*RuuKuoV18 I have found it difficult to tell bad news when I was at work, but this course gave me a lot of 'tips' for these situations.*" In the second main category, the students identified "Development needs for the course." Some students expressed their view that the workload of the course was too high in relation to the credits. As one student described: "*RiTuV10 The amount work needed was too much for a 1 credit. There were patient cases to ponder before group lessons, videos, encounter the patient, lessons and really a comprehensive learning diary.*"

In the third main category, students described "Factors that facilitate learning about palliative medicine." For example, the opportunity to share experiences was described important. As one student described: "*RuuKuV5 Both good experiences of success and annoying failures were shared, and sharing is important. It*

Table 2. Students' Attitudes Toward End-of-Life Care

Attitude	Before	After
1. Encountering dying people feels distressing	4.0 (3.8–4.2)	3.0 (2.8–3.2)*
2. Facing suffering feels distressing	4.6 (4.4–4.7)	3.9 (3.7–4.2)*
3. The thought of encountering the sorrow of a dying patient feels distressing	4.5 (4.3–4.7)	3.4 (3.2–3.6)*
4. I try to avoid participating in the decisions regarding ending curative care	2.8 (2.6–3.0)	2.2 (2.1–2.4)
5. I would like to discuss facing death with a more experienced colleague	4.8 (4.6–5.2)	4.0 (3.7–4.2)*
6. Doctor/nurse should support the patient's loved ones during end-of-life palliative care and after death	6.4 (6.3–6.5)	6.5 (6.3–6.6)
7. Doctor/nurse should support the patient preparing to die	6.6 (6.5–6.7)	6.6 (6.5–6.8)
8. Depression of a patient in end-of-life's palliative care can be treated	6.2 (6.0–6.3)	6.3 (6.1–6.4)
9. Respecting the patient's convictions is an essential part of palliative care	6.5 (6.4–6.6)	6.6 (6.4–6.7)
10. Pondering spiritual issues is part of end-of-life's palliative care	5.4 (5.4–5.7)	5.9 (5.7–6.1)*
11. A patient has the right to refuse treatment	6.6 (6.5–6.7)	6.6 (6.5–6.8)
12. I believe that I have received the competence to treat a dying patient	3.5 (3.3–3.7)	5.3 (5.2–5.5)*
13. I believe that my training has given me/will give me the competence needed to alleviate the patients' suffering	5.2 (5.1–5.4)	5.6 (5.5–5.8)*
14. I am satisfied with the knowledge I have received about end-of-life's palliative care during my training up to now	3.6 (3.4–3.7)	5.4 (5.2–5.6)*
15. Mental distress can be as severe as physical suffering	6.6 (6.4–6.8)	6.8 (6.7–6.9)
16. Social unease can be as stressful as physical suffering	6.3 (6.0–6.5)	6.6 (6.4–6.8)
17. I find it important to discuss with the patient before making the DNR (Do No Resuscitate) decision	6.4 (6.2–6.5)	6.4 (6.2–6.5)
18. I find it important to discuss with the patient's loved ones before making the DNR (Do No Resuscitate) decision	5.7 (5.6–5.8)	5.5 (5.3–5.7)
19. Starting end-of-life care means the ending of all medical treatments	1.3 (1.2–1.4)	1.2 (1.1–1.2)
20. End-of-life's palliative care is only offered to cancer patients	1.2 (1.1–1.3)	1.1 (1.0–1.2)
21. I am familiar with the term end-of-life care's palliative care	5.8 (5.7–6.0)	6.4 (6.3–6.6)*
22. Euthanasia should be legalized in Finland	4.6 (4.4–4.8)	4.3 (4.0–4.5)
23. Doctors should be able to assist their patients' commit suicide	3.4 (3.1–3.6)	3.4 (3.1–3.7)
24. I know how to get consultation help in palliative care	2.7 (2.5–2.9)	5.3 (5.0–5.5)*

Mean values (and 95 % intervals of confidence) are given before ($N = 267$) and after ($N = 149$) palliative education. Statistically significant differences between before and after are indicated with $*p < 0.05$. 1 = Disagree, 4 = neither agree nor disagree, 7 = agree.

Table 3. Summary of the Qualitative Analysis of the Students' Answers to the Open Questions After the Course and Examples from Students' Writings

Categories	Subcategories
Students' perspectives on the palliative medicine education in overall	(1) The palliative care course is important
	(2) Education supported professional growth
	(3) Good teaching atmosphere
	(4) Teachers are experts
	(5) Communication education is important
	(6) Education about holistic care is important
Development needs for the course structure	(7) Workload is too high in relation to the allocated time
	(8) The learning platform should be made clearer
	(9) Learning diary was cumbersome
	(10) Challenges in the practical implementation of the patient interview
	(11) The challenges of teaching arranged in different towns
	(12) Need for palliative medicine competence earlier in the studies
	(13) Overlap in the content of group lessons should be avoided
	(14) Group lessons should be interactive
	(15) More patient cases in teaching
Factors that facilitate learning about palliative medicine	(16) Group lessons are educational
	(17) Sharing experiences promotes learning
	(18) Meeting the patient supported learning
	(19) Group lessons supported learning to encounter
	(20) Group lessons supported learning about symptom management
	(21) Conversational teaching supports learning
	(22) A trusting atmosphere in group lessons helps learning
	(23) Learning diary is a good way to learn
	(24) Learning diary supported reflective learning
	(25) Learning diary supported learning of symptom management
	(26) Getting feedback supported learning
	(27) Patient cases supported learning
	(28) Effective practical arrangements supported learning
	(29) Preassignments supported learning
	(30) Distance learning is useful
	(31) Seminars promote learning
	(32) It is easier to learn when you already have experience of the subject
	(33) Exam supports learning
Factors hindering learning about palliative medicine	(34) Too large group size impaired learning
	(35) Limited feedback hinders learning
	(36) Too little teaching on pain and medical care
	(37) Acting does not support learning
	(38) Disadvantages of seminars
	(39) Disadvantages of distance learning
	(40) Spreading teaching over a long period of time does not support learning

inspires and encourages us to keep going." In the fourth main category, students described "Factors hindering the learning of palliative medicine." Some students expressed that the large size of the interactive small groups hindered learning. As one student expressed: "*RiTuV15 The size of the small group was too big when we had an exercise of communication of simulated patient-case. In my experience simulations work better if everybody has the opportunity to take part."*

Discussion

In this prospective pre- and posteducation study, we have found that the students felt more confident and prepared to meet incurably ill or dying patients and their relatives after the education than before. The attitude rankings also showed an increase in the students' understanding of their competence in PM. The students expressed that PM course was important, and it supported their professional growth. The students identified factors that facilitated or hindered the learning of PM after the education.

Many studies have shown that PM teaching improves medical students' knowledge and skills.[9,31,32] Data on the impact of teaching on attitudes are still rather limited. In our study, the assessment of students' attitudes was carried out before and after the specialized course of PM. After the dedicated course, our students reported reduced distress when thinking about encountering the sorrow of a dying patient. The role of spiritual issues in PC was more valued after the PM course than before, which reflects the understanding of a holistic approach necessary for PC. Holistic approach was seen as one of

the core components of patient-centered care and the professional development of physicians, too. The education also increased students' confidence in giving PC, which is important for all graduating physicians in order to provide palliative and end-of-life care.[20,33]

The national curriculum-based course clearly increased students' knowledge of PM. The students reported an increase in information about consultation possibilities and networking when caring for seriously ill and dying patients. In the qualitative data, students expressed that the course helped them particularly in breaking bad news to the patient. Our findings support teaching of PM both in a dedicated course and through integration with other subjects during undergraduate education. Our findings are in line with previous studies.[15,16,34] Obviously, one of the advantages of a dedicated course is the possibility to offer high-quality teaching by PC specialists. Indeed, in Finland, currently all universities have approved the unified national curriculum for PM teaching mandatory, which is the main change in teaching this important field of medicine in the country. This approach will be strengthened via university teachers′ annual meeting about PM education.

At both universities examined, the curriculum of undergraduate PM education contained encountering a dying patient either by visiting a hospice, hospital ward, or end-of-life care at home. Such clinical experiences have shown to be effective in enhancing positive attitudes toward end-of-life care.[35] The opportunities for patient encounters, bedside teaching, guidance from clinically experienced PC teachers, small-group lessons, problem-based teaching, discussions, and educational material available online were especially appreciated by our responders. Previous studies have shown that such teaching methods not only improve both knowledge and skills but also impact attitudes on compassionate, ethical, and psychosocial aspects of PC.[36,37]

This study underlines the significance of reflection as a learning method in medical education, which is also shown in previous studies.[38–43] Sharing perceived learning experiences and emotions in groups facilitates individual deep learning.[32,44] We observed rather similar findings in our students' answers, which supports the adequacy of teaching.

The results of this study give valuable information on students' views for developing education of PM. More online material on PC was seen as one developmental need. Several students requested to have at least part of the PM teaching earlier, during the fourth year. They referred to their experiences working as locum tenens after their fourth year at medical school, when the knowledge provided in the course would be needed. Further developments were also identified: reducing the size of the small groups and practical arrangements of the syllabus. Many students expressed that the learning diary to be a good method of learning and self-reflection, and they preferred it to a written exam. Our findings align with recent studies also recommending reflective writing as an effective method for learning.[45–49]

Strengths and limitations

The strength of this study is the documentation of the effects of a new comprehensive national curriculum for undergraduate PM teaching on students' learning using a pre- and posteducation survey. We have focused on students' attitudes and reflections, which both have pivotal roles in learning.[40,42,50,51] Because of our design, we think that the observed changes in the attitudes are reliable and truly a result of the PM education. Another strength is the exploration of students' views, which previous research has shown as important in curriculum development.[45,52,53]

The qualitative analysis of the students' views complemented the quantitative data in the current study. We used qualitative inductive content analysis, which is a commonly used method in assessing views.[30,54] Unfortunately, other methods, such as motivated strategies for learning questionnaire,[14] are not available in Finnish.

The limitations of this study include a moderate response rate (33–56% of students) after the dedicated PM course. Another disadvantage is that we were not able to recognize the responders before and after the education. The moderate response rate may be counted for modest changes in attitudes. In addition, we have investigated the implementation of the Finnish curriculum in only two of the five Finnish universities. The reason for this was that two other universities had previously had a different mandatory curriculum, albeit rather similar to the new national one.[9,10] The fifth Finnish medical school has only recently included the national curriculum as a mandatory teaching in the tuition program. Furthermore, the results are based on students' self-reported answers, which may introduce bias, as no objective measures were used to verify the change of the attitudes.[55]

We recognize that we could not comprehensively assess the skills and knowledge achieved by the students,

which is a limitation of our study. Future research using validated, objective measurement tools and a more controlled study design is required to address this. Long-term follow-up of the viability of the Finnish curriculum is certainly needed. Gathering this would be feasible, because the Finnish PM teachers are in close contact with each other in annual meetings.

We also recognize that, as a limitation, we could not assess comprehensively the achieved skills and knowledge of the students. However, according to personal information, students in both universities responded very well to PM questions in a national progress report examination. Long-term follow-up of the viability of the Finnish curriculum is certainly needed. Gathering this would be feasible, because the Finnish PM teachers are in close contact with each other in annual meetings.

Conclusion

After the dedicated course of PM based on a national curriculum for undergraduate PM education, the students felt less stress about encountering dying patients and their sorrow. Patient-centered ways of giving education were especially valued by the students, giving them confidence and knowledge on PM. Learning diary and self-reflection were highly appreciated as students expressed that these methods supported their learning. Students considered that PM teaching facilitated their development as physicians.

Authors' Contributions

A.V., O.A. and R. P.: Conceived of the presented idea. L.N-M., O.A. and R.P.: Modified the questionnaire used. A.L., R.P. and O.A.: Collected the data. M.H.: Supervised the qualitative analyses performed by A.V. M.H.: Verified the analytical methods. L.N-M.: Provided her educational expertise. A.V.: Produced the manuscript. All authors discussed the results and contributed to the final manuscript.

Author Disclosure Statement

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