

1 Nursing students' views of the content of palliative care in undergraduate education and  
2 their self-assessed palliative care competence - A nationwide cross-sectional study.

3 **Short title:** Students' views of palliative care education

4

5 Minna Hökkä, RN, PhD-candidate, Faculty of Medicine, Research Unit of Nursing  
6 Science and Health Management, University of Oulu; Kajaani University of Applied  
7 Sciences, Kajaani, Finland, minna.hokka@kamk.fi

8 Tarja Pölkki, RN, PhD, Professor, Faculty of Medicine, Research Unit of Nursing  
9 Science and Health Management, University of Oulu and Medical Research Center Oulu,  
10 Oulu University Hospital and University of Oulu, Oulu, Finland. tarja.polkki@oulu.fi

11 Juho T. Lehto, MD, Professor, Faculty of Medicine and Health Technology, Tampere  
12 University, and Palliative Care Centre, Department of Oncology, Tampere University  
13 Hospital, Tampere, Finland, juho.lehto@tuni.fi

14

15 **Corresponding author:**

16 Minna Hökkä  
17 Ketunpolku 4  
18 87101 Kajaani  
19 +358452040420  
20 minna.hokka@kamk.fi

21

22 **Acknowledgements:** The authors wish to thank all the nursing students who participated  
23 in this study and contact-persons who participated in the data collection.

24

25 **Funding:** This work was supported by the EduPal- project, which is a national flagship  
26 project funded by the Ministry of Education and Culture, Finland (Decision 29.3.2018  
27 OKM/258/523/2017). The funder had no role in the design of the study or in the writing  
28 of the article. The content of this article reflects the views of the EduPal group members.  
29 The funder is not liable for any use that may be made of the information contained  
30 herein.

31

32 **Author Contribution statement:** M.H., T.P and J.T.L. designed the study methodology.  
33 M.H., and J.T.L. collected the data. M.H analyzed the data and J.T.L. contributed in the  
34 analyze. M.H., T.P and J.T.L. drafted and revised the manuscript. All the authors read  
35 and approved the final version of the manuscript.

36

37 **Declaration of interest:** The authors declare that they have no conflict of interest.

38

39 **Keywords:** Competences, Education, Nursing, Palliative care, Professional competence,

40 Cross-sectional study

41

42

43 **ABSTRACT**

44 **Background:** The importance of integrating palliative care (PC) education into undergraduate  
45 nursing studies has been recognized. Still, there is considerable variation in the PC education of  
46 nurses.

47 **Objective:** To study the nursing students' views of the PC contents during the nursing education;  
48 students' self-assessed levels of PC competence; and whether prior education or work  
49 experience influence these views.

50 **Methods:** A cross-sectional study. Data were collected using a questionnaire which was tested  
51 for its content and construct validity and internal consistency. The sample consisted of final-year  
52 undergraduate nursing students (n=1331) from Finland.

53 **Results:** The response rate was 94 %. Of the students, 94.4% considered PC education to be  
54 quite or very useful, but only 51.9 % reported the achieved PC teaching as quite or very good.  
55 Teaching on mental symptoms, existential issues and multicultural aspects were considered  
56 incomplete. Over half of the students wanted more education on pharmacological- and non-  
57 pharmacological pain management. Students with previous education assessed their PC  
58 competence as quite or very good more often than other students (70.1 % vs. 54 %,  $p < 0.001$ ),  
59 and more often felt that these competencies are relevant to their profession (72.2% vs. 57.6%,  $p <$   
60 0.001).

61 **Conclusion:** PC was considered as a useful subject, still only about half of the students reported  
62 the received PC education and their competence on PC as sufficient. Previous education or  
63 experience may enhance PC competence highlighting the need for divergent teaching. The  
64 results identify development needs for the contents of PC education in undergraduate nursing  
65 studies.

66 **Keywords:** Competences, Education, Nursing, Palliative care, Professional competence, Cross-  
67 sectional study

68

## 69 Introduction

70 The World Health Organization and European Council have emphasized the importance of  
71 integrating palliative care into the basic education of all health care professionals.<sup>1,2</sup>  
72 Nevertheless, recently published surveys have revealed that there is still significant inter- and  
73 intra-country variation in the palliative care education for nurses.<sup>3,4</sup> As such, there is still a need  
74 to determine the extent that palliative care is covered in undergraduate nursing education.<sup>5,6</sup>

75 Palliative care should be integrated in the care of patients with chronic or life-threatening  
76 illnesses based on the need not on the diagnosis, prognosis or settings of care. Therefore, most  
77 professionals encounter these patients<sup>7</sup>. Nurses have a pivotal role in providing palliative care to  
78 patients and their families, when they are often the primary care provider closest to the patient  
79 across various health care settings.<sup>8-10</sup> The need for palliative care is expected to rise  
80 considerably in the future,<sup>7</sup> this trend will increase the need for nurses with adequate palliative  
81 care competencies. As stated in a previous study, palliative care competencies serve as the  
82 antecedent to the nurses to obtain the ability to provide high-quality palliative care.<sup>11</sup> Palliative  
83 care nursing competencies consist of the knowledge, skills, values and attitudes needed to  
84 provide high-quality palliative nursing care to the patients and their families.<sup>12</sup>

85 Caring for patients with advanced and life-threatening illness affects students emotionally  
86 and they may not have the skills necessary to cope with these emotions<sup>13</sup> Nursing students' may  
87 experience fear of death and doubts of their ability to support the patients and families in end-of-  
88 life care.<sup>14-17</sup> This may even lead students to withdraw from caring for the patient<sup>5,18</sup> which can  
89 cause dismal palliative care experiences for the patient and the family.

90 The need to prepare students to provide palliative care is imminent<sup>19</sup>, but the education of  
91 palliative care varies between the universities of applied sciences (UAS) in Finland.<sup>20</sup> Only four  
92 out of the 21 UASs provide palliative care education as a mandatory or integrated course,<sup>3</sup>  
93 although a national recommendation emphasizes that palliative care should be integrated in  
94 health care professionals' education.<sup>21</sup>

95           Students must be included as key stakeholders whenever curricula are developed.<sup>22</sup>  
96   Earlier quantitative research on palliative care education has focused on the effects of education  
97   interventions<sup>23</sup> or clinical practice<sup>17,24</sup> on students' palliative care competence or attitudes to end-  
98   of-life care, as well as estimating palliative care competence levels among students. <sup>25,26</sup> Previous  
99   working experience in healthcare influences graduating nurses' self-assessed competences, still  
100   there are scarce number of studies from the context of palliative care.<sup>27</sup> To the best of our  
101   knowledge, students' views of the content and usefulness of the palliative care education  
102   provided throughout their undergraduate nursing education and their self-assessed palliative care  
103   competence has only received limited research attention. This research aimed to examine  
104   undergraduate nursing students' views of the contents of palliative care during their whole nursing  
105   education. An additional aim was to assess nursing students' self-assessed levels of competence  
106   in palliative care and compare whether prior education or work experience impacted the self-  
107   assessed levels of competence or their views of the education.

108

## 109   **METHODS**

### 110   Study-design

111   The study applied a cross-sectional study design. A nationwide questionnaire was distributed  
112   among bachelors' degree undergraduate nursing students in the final year of their studies. The  
113   STROBE checklist for cross-sectional studies was used when reporting the results.<sup>28</sup>

114

### 115   Participants and data collection

116   The study population consisted of undergraduate nursing students in the final year of their studies  
117   from all universities of applied sciences (UASs) in Finland. The data collection ran from  
118   September 2018 to March 2019. The inclusion criteria were: the student was in the final year of  
119   his/her undergraduate nursing studies; and the student was studying in a Finnish or Swedish  
120   degree program. The questionnaire was presented in Finnish to the Finnish degree program  
121   students and in Swedish to the Swedish degree program students. Convenience sampling was

122 used to reach all the groups of final-year nursing students studying at Finnish UASs (n=21) at the  
123 time of data collection.<sup>29</sup>

124 In Finland, UASs provide nursing education as a Bachelor's degree program.<sup>30</sup> It lasts  
125 approximately three-and-a-half years and includes 210 European Credit Transfer and  
126 Accumulation System (ECTS) credits. UASs have autonomy in developing the nursing  
127 curriculum, but follows the directive set by the European Union<sup>30,31</sup>, along with a national  
128 consensus-based report of nursing competencies<sup>32</sup>.

129 During data collection, a named contact person from each UAS was responsible for  
130 distributing paper questionnaires to final-year nursing students during a teaching session in 19 of  
131 the UASs. At two UASs, the contact person sent the questionnaire to the final-year student group  
132 as a Webropol-online questionnaire.

133

#### 134 Questionnaire

135 The questionnaire (supplementary file 1) included seven background questions: UAS; age;  
136 degree program; academic year of studies; gender; and previous social- and healthcare  
137 education or work experience. After answering these questions, students were asked to provide  
138 their views on the coverage of palliative care contents in their education (14 items) using a four-  
139 point Likert scale (4 very good/ 3 quite good/ 2 quite incompletely/ 1 very incompletely) and how  
140 they rated their own palliative care competencies (14 items) (4 very good/ 3 quite good/ 2 quite  
141 insufficient/ 1 very insufficient).

142 The questionnaire also asked for student views on: 1) the content of palliative care  
143 education as a whole (four-point Likert scale ranging from "very good" to "very poor"); 2) the  
144 usefulness of the palliative care education (four-point Likert scale ranging from "very useful" to  
145 "completely useless"); 3) the need for palliative care competence in their future work (four-point  
146 Likert scale ranging from "I need it very much" to "I do not need it at all"); and 4) their self-  
147 assessed palliative care competence as whole (four-point Likert scale ranging from "very good" to  
148 "very insufficient"). In addition, the questionnaire included a question about what palliative care  
149 content the students would have preferred to learn about more during their studies (14 items),

150 and whether they had met or cared for a patient in palliative or end of life care during their  
151 studies. All of these questions included “I do not know” as a response option.

152 The questionnaire was developed based on previous literature.<sup>33-36</sup> The items were  
153 generated by a multidisciplinary expert group consisting of nurses with competence in palliative  
154 care (n=2) and physicians with competence in palliative medicine (n=5). The clarity of the items  
155 was critically reviewed by three nursing scientists and four nursing lecturers. After this review,  
156 three additional items were included to the questionnaire. The content validity of the  
157 questionnaire was tested by conducting an expert evaluation including eight experts in palliative  
158 nursing, education and nursing sciences who evaluated the relevance of the items. The Content  
159 Validity Index (CVI) for the items (CVI-I) was 1 for most items, and 0.875 for two items. The CVI  
160 average (S-CVI/Ave) for the entire questionnaire was 0.99, which demonstrates acceptable  
161 relevance.<sup>37</sup> In addition, six nursing education experts provided written feedback on the  
162 questionnaire. Based on the evaluations of these 14 experts, three background questions were  
163 added to the questionnaire and minor amendments were made to certain items to improve clarity.

164 Exploratory factor analysis was employed when evaluating the construct validity of the  
165 questionnaire concerning the questions of students views of the palliative care contents (14  
166 items) and self-assessed competencies (14 items). As a result, two factor solutions were  
167 generated of each research question. The internal consistency was evaluated by item analysis  
168 and Cronbach’s alpha. The alpha values ranged from 0.80 to 0.89 (supplementary file 2).

169 A pretest was conducted on a group of final-year nursing students (n=15). The students  
170 were asked to answer each item and assess the comprehensibility, clarity and length of the  
171 questionnaire.<sup>37</sup> They were able to comment on each item through an open comment field. The  
172 results of the pretest demonstrated that the questionnaire had adequate content, structure and  
173 length. No further modifications were warranted. The data collected from the pretest were not  
174 included in the final results.

175  
176  
177

178 Statistical analysis

179 Descriptive statistics, such as percentages, medians and ranges, were used to describe the  
180 sample. The chi-squared test was used to compare differences in categorical variables between  
181 students with and without earlier education or working experience in social- or healthcare. The  
182 threshold for statistical significance was set as  $p < 0.05$ . The factor structure from each research  
183 question; 1. students views on the coverage of palliative care contents in their education (14  
184 items) and 2. students self-assessed palliative care competencies (14 items) was studied by  
185 using the exploratory factor analysis. Both questions were analyzed with orthogonal rotation  
186 (Varimax). Kaiser-Meyer-Olkin's measure of sampling adequacy and Bartlett's test for sphericity  
187 were used to ensure the possibility of performing factor analysis. Cronbach's alpha served as a  
188 measure of the reliability of the factors. Data analyses were performed in SPSS Statistics, version  
189 26.0 (IBM Corp, Armonk, NY, USA).

190

191 Ethical considerations

192 Before starting the research, the Ethical Committee of North Ostrobothnia's Hospital District was  
193 consulted about the need for ethical approval. Approval from this body was not needed based on  
194 the Finnish research regulations <sup>38</sup> as the study did not intervene with the students' integrity.  
195 Written research permission was obtained from all of the participating UASs. The questionnaire  
196 responses were anonymous and no personal information was collected. The participants were  
197 made aware that participation in the study was voluntary. Moreover, students were asked to  
198 confirm that they had read the information letter and agreed to participate in the study at the  
199 beginning of the questionnaire.

200

## 201 **Results**

202 The questionnaire was delivered to 1412 students, of which 1331 (94 %) provided a valid  
203 response. The contact persons estimated that there were a total of 1868 final-year nursing  
204 students in the student groups at the time of data collection. Thus, the respondents represented



205 72 % of all the final-year nursing students enrolled in Finnish UASs at the time of the data  
206 collection. The respondent characteristics are presented in Table 1. A majority of the students  
207 were female, while the respondents had a median age of 25 years. Of the respondents (77.6%)  
208 reported having cared for a patient in palliative or end of life care during their nursing education.  
209 Of the students (n = 555) reporting previous social- and healthcare education, 93 % had studied a  
210 vocational practical nurse degree in social and health care.

211

212 Table 1 here please.

213

214 Views of palliative care teaching and its contents during nursing education

215 The palliative care education in nursing studies was considered as quite or very good by 51.9% of  
216 the students, while 94.4% of the respondents assessed that the palliative and end-of-life care  
217 education is quite or very useful. Students' views on how their nursing education had covered  
218 different contents of palliative care are shown in Table 2. The students assessed that the  
219 achieved palliative care education had most comprehensively covered the basics of palliative  
220 care, while multicultural issues in palliative care had been covered poorly.

221

222 Table 2 here please.

223

224 The contents of palliative care which the nursing students felt could have been taught more  
225 during their studies are listed in Figure 1. The responding students identified a particular need for  
226 more education on pharmacological and non-pharmacological pain management, along with the  
227 mental symptoms in palliative care (Figure 1).

228

229 Figure 1 here please.

230

231

232

233 Self-assessed competence in palliative care

234 As a whole, 60.7 % of the undergraduate nursing students assessed their own competency in PC  
235 as quite or very good. The respondents' self-assessed competence in different aspects of  
236 palliative care are presented in Table 3. Of the students, 80.4 % assessed their competence in  
237 the basics of palliative care as very or quite good, while 76.2 % of them reported quite or very  
238 insufficient competence in multicultural issues related to palliative care.

239

240 Table 3 here please.

241

242 Students with or without previous education and work experience

243 The overall views on palliative care competence and education among students with and without  
244 previous education in social- or health care are shown in Figure 2. Furthermore, previous work  
245 experience did not significantly affect the proportion of students who ranked the overall content of  
246 their palliative care education as quite or very good (50.8 % and 53.9 % of students with and  
247 without previous work experience). Students with previous work experience were more likely to  
248 assess their palliative care competence as quite or very good than students without experience  
249 (67.0 % vs. 50.7 %,  $p < 0,001$ ). Moreover, this group of students, when compared with students  
250 without prior work experience, was more likely to answer that they would need these  
251 competencies quite or very much in their future work (69.8% vs. 53.7%,  $p < 0,001$ ). No significant  
252 difference was found between students with or without work experience on their view of the  
253 usefulness of palliative care education.

254

255 Figure 2 here please.

256

257

258

259

## 260 Discussion

261 In this study only about half of the students evaluated that palliative care had been covered well  
262 during their studies, while almost all of the students felt that palliative care education is useful.  
263 Students expressed a desire for more education about pharmacological and non-pharmacological  
264 pain management. Over half of the students reported that the education had incompletely  
265 covered the issues of non-pharmacological pain management, psychosocial support, mental  
266 symptoms, along with existential and multicultural issues. The result of this study gives an insight  
267 into the current state of palliative care education and gives information of the aspects, which  
268 should be better integrated into the nursing curriculum to prepare students to provide palliative  
269 care.

270 When nursing students in our study were questioned about the content of their palliative  
271 care education, the basics of palliative care were covered the most, while multicultural and  
272 existential issues were covered the least. In addition, over half of the students reported a low  
273 level of competence in the existential issues of palliative care. Existential issues, or spirituality, is  
274 an essential aspect in palliative care as health care professionals should be able to identify which  
275 physical, psychosocial and spiritual approaches will help a patient cope with their situation.<sup>39</sup>  
276 Patients suffering from advanced or life-threatening diseases often have a need for spiritual  
277 support.<sup>40,41</sup> In addition, spiritual distress is associated with poor quality of life among palliative  
278 care patients.<sup>42</sup> Basic spiritual support should be seen as an integral part of palliative care  
279 provided by all professions,<sup>43</sup> yet the results of the present study and previous research have  
280 demonstrated that the existential and spiritual aspects of palliative care need to be addressed  
281 more comprehensively in undergraduate nursing education.<sup>44,45</sup>

282 Most of the students in our study also reported relatively low levels of competence in  
283 multicultural aspects of palliative care. Globalization of societies has increased the diversity of  
284 cultures and, the cultural needs are more imminent at the end of life.<sup>46</sup> For this reasons, it has  
285 been widely emphasized that nurses need solid cultural competence to meet the distinct needs of  
286 patients in palliative care.<sup>47-50</sup> The responding students also expressed a desire for more

287 education on pharmacological and non-pharmacological pain management. This was supported  
288 by low self-assessed levels of competence in non-pharmacological pain management. As pain is  
289 a common symptom among end-of-life patients<sup>51</sup> and a significant burden for patients,<sup>52</sup> all  
290 nursing students should receive sufficient education on this topic to ensure that they are able to  
291 provide high-quality palliative care.

292           Students with previous social- and healthcare education and/or work experience  
293 assessed their overall palliative care competencies more positively than other students in the  
294 present study. Practical experience<sup>53,54</sup> and previous education<sup>54</sup> of palliative care have been  
295 identified to positively influence students' attitudes towards caring for dying patients. Students in  
296 this study with previous education and work experience were more likely to answer that they need  
297 palliative care competencies in their future work. This may reflect their better insight into the  
298 competencies needed in working life.

299           Almost half of the students without previous education or work experience reported quite  
300 or very insufficient palliative care competencies. Feelings of unpreparedness may increase fear of  
301 facing death and difficulties in caring for end-of-life patients.<sup>54-57</sup> Therefore, nursing education  
302 should be developed to ensure that students without previous education or work experience will  
303 achieve sufficient basic palliative care competencies. In addition, students with earlier education  
304 and/or work experience would probably benefit from education on more advanced palliative care  
305 issues. Noteworthy, prior education or work experience did not significantly impact a student's  
306 view of the usefulness of palliative care education, when almost all of the students considered it  
307 to be useful. Still, all students reported desire of more education and weaknesses in the received  
308 education about different aspects of palliative care. This strengthens the argument that there are  
309 still needs to integrate palliative care contents into undergraduate nursing studies to strengthen  
310 palliative care competence to all nursing students.

311

312

313

314

315 Strengths and limitations of the study

316 A strength of the present study was the use of a single, nationwide survey when investigating  
317 students' views and expectations of palliative care education. The response rate was high and  
318 the study sample was representative of undergraduate nursing students, both of which improve  
319 the generalizability of the reported findings. Also, the questionnaire was carefully designed and  
320 validated by experts and psychometrically tested, as well as pre-tested on a group of students.  
321 Nevertheless, the study includes several limitations. Students' self-assessed competencies were  
322 based on subjective judgments rather than objective measures. In two of the 21 UASs, the  
323 questionnaire was provided online rather than as a paper survey. Thus, data collection differed  
324 between these two schools, but this should not have had a marked effect on the results as the  
325 questions in both surveys were identical.

326

## 327 **Conclusions**

328 Undergraduate nursing students consider palliative care to be a highly useful subject, yet only  
329 approximately half of them reported that the education has sufficiently covered palliative care  
330 contents and that their competence in palliative care is good. Multicultural and existential aspects,  
331 along with pharmacological and non-pharmacological pain management, were identified as areas  
332 of palliative care that should be covered more in education. Previous education or work  
333 experience may enhance a student's competence, but all students still reported palliative care  
334 educational needs. Our results highlight current pitfalls in the education of palliative care in  
335 undergraduate nursing education and can be used to develop nursing curriculum.

336

## 337 **Acknowledgments**

338 The authors wish to thank all the nursing students who participated in this study and thanks the  
339 statistician (*blinded*) for the help provided with the statistical analyses.

340

## 341 **Declaration of Conflicting Interests**

342 The authors declare that they have no conflicts of interests.

343

## 344 **Funding**

345 The data collection was funded by EduPal- project, which was funded by the Ministry of  
346 Education and Culture (Decision 29.3.2018 OKM/258/523/2017) in Finland. The first author was  
347 granted by Durchman foundation and Sairaanhoidajien koulutussäätiö as a personal research  
348 grant. The funders had no role in the design of this study, in the collection, analysis and  
349 interpretation of data, or in writing the manuscript. The content of this article reflects only the  
350 authors views, and the funders are not liable for of the information contained in the study.

351

## 352 **References**

- 353 1. World Health Assembly. *Strengthening of Palliative Care as a Component of Comprehensive*  
354 *Care Throughout the Life Course*. Geneva, Switzerland: World Health Assembly, 2014.  
355 <https://apps.who.int/iris/handle/10665/162863>. Accessed August 15, 2021.
- 356 2. Parliamentary Assembly. *The Provision of Palliative Care in Europe*. Brussels, Belgium:  
357 European Commission, 2018. [https://brusano.brussels/wp-](https://brusano.brussels/wp-content/uploads/sites/40/2018/10/20180917-PalliativeCare-EN.pdf)  
358 [content/uploads/sites/40/2018/10/20180917-PalliativeCare-EN.pdf](https://brusano.brussels/wp-content/uploads/sites/40/2018/10/20180917-PalliativeCare-EN.pdf). Accessed August 15, 2021.
- 359 3. Arias-Casais N, Garralda E, Rhee J, et al. *EAPC Atlas of Palliative Care in Europe 2019*.  
360 Vilvoorde, Netherlands: EAPC Press, 2019.

- 361 4. Martins Pereira S, Hernández-Marrero P, Pasma HR, Capelas ML, Philip Larkin P, Francke  
362 AL. Nursing education on palliative care across Europe: Results and recommendations from the  
363 EAPC Taskforce on preparation for practice in palliative care nursing across the EU based on an  
364 online-survey and country reports. *Palliat Med.* 2021;35(1):130–141.  
365 doi:10.1177/0269216320956817
- 366 5. Mutto ME, Errazquin A, Rabhansl MM, Marcelo JV. Nursing education: The experience,  
367 attitudes, and impact of caring for dying patients by undergraduate Argentinian nursing students.  
368 *J Palliat Med.* 2010;13(12):1445-1450. doi:<https://doi.org/10.1089/jpm.2010.0301>
- 369 6. Cavaye J, Watts J. An integrated literature review of death education in pre-registration nursing  
370 curricula: Key themes. *Int J Palliat Care.* 2014;564619:1-19.  
371 doi:<http://dx.doi.org/10.1155/2014/564619>
- 372 7. Connor S. Edit. *Global Atlas of Palliative Care.* 2nd Edition. Geneva, Switzerland: World Health  
373 Organization, 2020. <http://www.thewhpc.org/resources/global-atlas-on-end-of-life-care>.  
374 Accessed August 15, 2021.
- 375 8. Fitch MI, Fliedner MC, O'Connor M. Nursing perspectives on palliative care 2015. *Ann Palliat*  
376 *Med.* 2015;4(3):150–155. doi:10.3978/j.issn.2224-5820.2015.07.04
- 377 9. International Society of Nurses in Cancer Care. *Models of Palliative Care Position Statement.*  
378 Vancouver, Canada: International Society of Nurses in Cancer Care, 2017.  
379 [https://cdn.ymaws.com/www.isncc.org/resource/resmgr/position\\_statements/isncc\\_models\\_of\\_p](https://cdn.ymaws.com/www.isncc.org/resource/resmgr/position_statements/isncc_models_of_palliative_c.pdf)  
380 [alliative\\_c.pdf](https://cdn.ymaws.com/www.isncc.org/resource/resmgr/position_statements/isncc_models_of_palliative_c.pdf) Accessed August 15, 2021.
- 381 10. World Health Organization. *State of World's Nursing. Investing in Education, Jobs and*  
382 *Leadership.* Geneva, Switzerland: World Health Organization, 2020.
- 383 11. Kirkpatrick AJ, Cantrell MA, Smeltzer SC. A concept analysis of palliative care nursing:  
384 advancing nursing theory. *ANS Adv Nurs Sci.* 2017;40(4):356–369.  
385 doi:10.1097/ANS.000000000000187
- 386 12. Desbiens JF, Gagnon J, Fillion L. Development of a shared theory in palliative care to  
387 enhance nursing competence. *J Adv Nurs.* 2012;68(9):2113–2124. doi:10.1111/j.1365-  
388 2648.2011.05917.x

- 389 13. Parry M. Student nurses' experience of their first death in clinical practice. *Int. J. Palliat. Nurs.*  
390 2011;17(9):446-451. doi:10.12968/ijpn.2011.17.9.448
- 391 14. Strang S, Bergh I, Ek K, et al. Swedish nursing students' reasoning about emotionally  
392 demanding issues in caring for dying patients. *Int. J. Palliat. Nurs.* 2014;20(4):194-200. doi:  
393 10.12968/ijpn.2014.20.4.194
- 394 15. Gillan PC, van der Riet PJ, Jeong S. End of life care education, past and present: a review of  
395 the literature. *Nurse Educ Today.* 2014;34(3):331–342.  
396 doi:https://doi.org/10.1016/j.nedt.2013.06.009
- 397 16. Bailey C, Hewison A. The impact of a 'Critical Moments' workshop on undergraduate nursing  
398 students' attitudes to caring for patients at the end of life: an evaluation. *J Clin Nurs.* 2014;23(23-  
399 24):3555–3563. doi:https://doi.org/10.1111/jocn.12642
- 400 17. Henoch I, Melin-Johansson C, Bergh I, et al. Undergraduate nursing students' attitudes and  
401 preparedness toward caring for dying persons – a longitudinal study. *Nurse Educ Pract.*  
402 2017;26:12–20. doi:https://doi.org/10.1016/j.nepr.2017.06.007
- 403 18. Mallory J.L. 2003. The impact of a palliative care educational component on attitudes toward  
404 care of the dying in undergraduate nursing students. *J. Prof. Nurs.* 2003;19(5):305-312.  
405 doi:S8755722303000942
- 406 19. Ballesteros M, Centeno C, Arantzamendi M. A qualitative exploratory study of nursing  
407 students' assessment of the contribution of palliative care learning. *Nurse Educ Today.*  
408 2014;34(6):1-6. doi:http://dx.doi.org/10.1016/j.nedt.2013.12.010
- 409 20. Tiina Saarto T, expert working group. Providing palliative treatment and end-of-life care.  
410 Ministry of Social Affairs and Health. Reports and Memorandums of the Ministry of Social Affairs  
411 and Health 2017:44.  
412 [https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/160392/Palliativisen%20hoidon%20ja%  
413 20saattohoidon%20j%c3%a4rjest%c3%a4minen.pdf?sequence=1&isAllowed=y](https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/160392/Palliativisen%20hoidon%20ja%20saattohoidon%20j%c3%a4rjest%c3%a4minen.pdf?sequence=1&isAllowed=y) Accessed 8  
414 January, 2022.
- 415 21. Saarto T, Finne-Soveri H, expert working group. Recommendation on the Provision and  
416 Improvement of Palliative Care Services in Finland: Final Report of the Expert. Reports and



417 Memorandums of the Ministry of Social Affairs and Health 2019;68. <http://urn.fi/URN:ISBN:978->  
418 952-00-4126-7. Accessed August 15, 2021.

419 22. Jagera F, Vandyka A, Jacoba JD, et al. The Ottawa model for nursing curriculum renewal: An  
420 integrative review. *Nurse Educ Today*. 2020;87:104344. doi:10.1016/j.nedt.2020.104344

421 23. (Blinded). The effect of teaching methods in palliative care education for undergraduate  
422 nursing and medical students - a systematic review. *Int J Palliat Nurs*. Accepted 15.2.2021.

423 24. Fristedt S, Grynne A, Melin-Johansson C, et al. Registered nurses and undergraduate  
424 nursing students' attitudes to performing end-of-life care. *Nurse Educ Today*. 2021;98:104772.  
425 doi:10.1016/j.nedt.2021.104772

426 25. Dimoula M, Kotronoulas G, Katsaragakis S, Christou M, Sgourou S, Patiraki E.  
427 Undergraduate nursing students' knowledge about palliative care and attitudes towards end-of-  
428 life care: a three-cohort, cross-sectional survey. *Nurse Educ Today*. 2019;74:7–14.  
429 doi:<https://doi.org/10.1016/j.nedt.2018.11.025>

430 26. Chover-Sierra E, Martínez-Sabater A. Analysis of Spanish nursing students' knowledge in  
431 palliative care. An online survey in five colleges. *Nurse Educ Prac*. 2020;49:102903.  
432 doi:<https://doi.org/10.1016/j.nepr.2020.102903>

433 27. Kajander-Unkuri S, Meretoja R, Katajisto J, Leino-Kilpi H, Suikkala A. Students' Self-  
434 assessed Competence Levels during Nursing Education Continuum - A Cross-sectional Survey.  
435 *Int J Nurs Educ Scholarsh*. 2020; 20190050. doi:10.1515/ijnes-2019-0050.

436 28. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, STROBE  
437 Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)  
438 statement: guidelines for reporting observational studies. *J Clin Epidemiol*. 2008;61(4):344-9.  
439 doi:10.1016/j.jclinepi.2007.11.008

440 29. Polit DF, Beck CT. *Nursing Research. Generating and Assessing Evidence for Nursing*  
441 *Practice*. 9th ed. Philadelphia, PA: Lippincott, Williams & Wilkins, 2012.

442 30. Valtioneuvoston asetus ammattikorkeakouluista. 18.12.2014/1129. (Finnish Act of  
443 Universities of Applied Sciences.), 2014. <https://www.finlex.fi/fi/laki/ajantasa/2014/20141129>.  
444 Accessed August 15, 2021.

445 31. European Council. Directive 2013/55/EU, 2013. [https://eur-](https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0132:0170:en:PDF)  
446 [lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0132:0170:en:PDF](https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0132:0170:en:PDF). Accessed  
447 August 15, 2021.

448 32. Silen-Lipponen M & Korhonen T. 2020. Osaamisen ja arvioinnin yhtenäistäminen  
449 sairaanhoitajakoulutuksessa – yleSHarviointi-hanke. Savonia-ammattikorkeakoulun julkaisusarja  
450 5/2020. Kuopio, Finland: Savonia University of Applied Sciences, 2020.  
451 [https://www.theseus.fi/bitstream/handle/10024/347289/2020-](https://www.theseus.fi/bitstream/handle/10024/347289/2020-5yleshArviointi.pdf?sequence=1&isAllowed=y)  
452 [5yleshArviointi.pdf?sequence=1&isAllowed=y](https://www.theseus.fi/bitstream/handle/10024/347289/2020-5yleshArviointi.pdf?sequence=1&isAllowed=y). Accessed August 15, 2021.

453 33. De Vlieger M, Gorchs N, Larkin P, Porchet F. *A Guide for the Development of Palliative Nurse*  
454 *Education in Europe*. Vilvoorde, Belgium: European Association for Palliative Care, 2004.

455 34. Gamondi C, Larkin P, Payne S. Core competencies in palliative care: an EAPC white paper  
456 on palliative care education: part 1. *Eur J Palliat Care*. 2013;20(2):86–91.

457 35. Gamondi C, Larkin P, Payne S. Core competencies in palliative care: an EAPC white paper  
458 on palliative care education: part 2. *Eur J Palliat Care*. 2013;20(3):140–145.

459 36. Ryan K, Connolly M, Charnley K, et al. *Palliative Care Competence Framework*. Dublin,  
460 Ireland: Health Service Executive. 2014. <http://aiihpcorg/education/competence/>. Accessed  
461 September 5, 2021.

462 37. Polit D, Beck C, Owen S. Is the CVI an acceptable indicator of content validity? Appraisal and  
463 recommendations. *Res Nurs Health*. 2007;30(4):459–467. doi:10.1002/nur.20199

464 38. Finlex. Laki lääketieteellisestä tutkimuksesta (The Finnish Law of Medical Research).  
465 9.4.1999/488. 1999. <https://www.finlex.fi/fi/laki/ajantasa/1999/19990488>. Accessed August 15,  
466 2021.

467 39. World Health Organization. WHO Definition of Palliative Care. Geneva, Switzerland: World  
468 Health Organization. 2020. <https://www.who.int/news-room/fact-sheets/detail/palliative-care>.  
469 Accessed September 15, 2021.

470 40. Egan R, MacLeod R, Jaye C, et al. Spiritual beliefs, practices, and needs at the end of life:  
471 results from a New Zealand national hospice study. *Palliat Support Care*. 2016;15(2):223–230.  
472 doi:<https://doi.org/10.1017/S147895151600064X>

473 41. Van de Geer J, Groot M, Andela R, et al. Training hospital staff on spiritual care in palliative  
474 care influences patient-reported outcomes: results of a quasi-experimental study. *Palliat Med.*  
475 2017;31(8):743–53. doi:10.1177/0269216316676648

476 42. Balboni T, Vanderwerker LC, Block SD, et al. Religiousness and spiritual support among  
477 advanced cancer patients and associations with end-of-life treatment preferences and quality of  
478 life. *J Clin Oncol.* 2007;25(5):555–560. doi:10.1200/JCO.2006.07.9046

479 43. Selman L, Brighton L, Sinclair S, et al. Patients’ and caregivers’ needs, experiences,  
480 preferences and research priorities in spiritual care: A focus group study across nine countries.  
481 *Palliat Med.* 2018;32(1):216–230. doi:10.1177/0269216317734954

482 44. Juvet TM, Bornet M-A, Desbiens J-F, Tapp D, Roos P. “Do Not Protect Us, Train Us.”—Swiss  
483 healthcare students’ attitudes toward caring for terminally ill patients. *OMEGA—Journal of Death*  
484 *and Dying.* 2021:1–22. doi:10.1177/00302228211007003

485 45. Eltaybani S, Igarashi A, Yamamoto-Mitani N. Palliative and end-of-life care education in  
486 prelicensure nursing curricula: A nationwide survey in an Arab country. *Nurse Educ Today.*  
487 2021;96:104644. doi:https://doi.org/10.1016/j.nedt.2020.104644

488 46. Schrank B, Rumpold T, Amering M, Masel EK, Watzke H, Schur S. Pushing boundaries—  
489 culture-sensitive care in oncology and palliative care: a qualitative study. *Psycho-Oncology.*  
490 2017;26(6):763–769. doi:10.1002/pon.4217

491 47. Ferrell B, Malloy P, Mazanec P, Virani R. CARES: New Competencies and  
492 Recommendations for Educating Undergraduate Nursing Students to Improve Palliative Care. *J*  
493 *Prof Nurs.* 2016;32(5):327–333. doi:10.1016/j.profnurs.2016.07.002

494 48. American Association of Colleges of Nursing. Preparing Graduate Nursing Students to  
495 Ensure Quality Palliative Care for the Seriously Ill & Their Families. Washington, D.C: American  
496 Association of Colleges of Nursing.  
497 <https://www.aacnursing.org/Portals/42/ELNEC/PDF/Graduate-CARES.pdf>. Accessed August 30,  
498 2021.

499 49. Hökkä M, Martins Pereira S, Pölkki T, Kyngäs H, Hernandez-Marrero P. Nursing  
500 competencies across different levels of palliative care provision: A systematic integrative review  
501 with thematic synthesis. *Palliat Med.* 2020;34(7):851–870. doi:10.1177/0269216320918798  
502 50. Hökkä M, Melender H-L, Lehto J, Kaakinen P. Palliative nursing competences aligned to  
503 different levels of palliative care provision: a qualitative analysis of the professional's perspective.  
504 *J Palliat Med.* 2021. doi:https://www.liebertpub.com/doi/10.1089/jpm.2020.0632  
505 51. Solano JP, Gomes B, Higginson IJ. A comparison of symptom prevalence in far advanced  
506 cancer, AIDS, heart disease, chronic obstructive pulmonary disease and renal disease. *J Pain*  
507 *Symptom Manage.* 2006;31(1):58-69. doi:10.1016/j.jpainsymman.2005.06.007  
508 52. Goudas LC, Bloch R, Gialeli-Goudas M, Lau J, Carr DB. The epidemiology of cancer pain.  
509 *Cancer Inves.* 2005;23(2):182–190.  
510 53. Grubb C, Arthur A. Student nurses' experience of and attitudes towards care of the dying: A  
511 cross-sectional study. *Palliat Med.* 2016;30(1):83-88. doi:10.1177/0269216315616762  
512 54. Hagelin CL, Melin-Johansson C, Henoch I, et al. Factors influencing attitude toward care of  
513 dying patients in first-year nursing students. *Int J Palliat Nurs.* 2016;22(1): 28–36.  
514 doi:https://doi.org/10.12968/ijpn.2016.22.1.28  
515 55. Ek K, Westin L, PrahL C, et al. Death and caring for dying patients: exploring first-year nursing  
516 students' descriptive experiences. *Int J Palliat Nurs.* 2014;20(10):509–515.  
517 doi:https://doi.org/10.12968/ijpn.2014.20.10.509  
518 56. Carman, M. Bundling the death and dying learning experience for prelicensure nursing  
519 students. *Nurse Educ.* 2014;39(3):135–137. doi:https://doi.org/10.1097/NNE.000000000000036  
520 57. Henderson A, Rowe J, Watson K, Hitchen-Holmes D. Graduating nurses' self-efficacy in  
521 palliative care practice: an exploratory study. *Nurse Educ Today.* 2016;39:141–146.  
522 doi:https://doi.org/10.1016/j.nedt.2016.01.005  
523  
524

525 Table 1. Characteristics of the responding students

526

---

		527
Age in years, median (range)	25	(20 - 58)
Gender, n (%)		
Female	1128	(84.7)
Male	191	(14.4)
Did not define	12	(0.6)
Previous health- or social care education, n (%)		
None	773	(58.1)
Practical nurse	515	(38.7)
Other education	40	(3.0)
Previous work experience in health- or social care, n (%)		
Yes	820	(61.6)
No	507	(38.1)
Total number of responses	1331	

---

528

529

530 Table 2. Nursing students' (n=1331) views of the coverage of the palliative care contents in their  
 531 studies. The percentages below represent the proportion of students who chose each answer.  
 532

	Very good	Quite good	Quite incompletely	Very incompletely	I don't know
<b>Contents in psychosocial and existential aspects of PC</b>					
Psychosocial support	6.3%	35.9%	42.1%	13.9%	1.7%
Mental symptoms in PC	5.3%	32.3%	45.3%	15.9%	1.2%
Supporting a PC patient's closest ones	13.9%	44.0%	29.8%	11.4%	1.0%
Communication in PC	11.2%	46.6%	31.2%	9.9%	1.2%
Existential issues	4.5%	25.2%	41.8%	24.1%	4.4%
Ethical questions in PC	14.1%	47.7%	28.9%	8.0%	1.1%
Multidisciplinary teamwork in PC	10.4%	38.5%	35.8%	12.9%	2.3%
Multiculturality in PC	2.8%	19.3%	41.6%	31.7%	4.6%
<b>Contents in symptom management and concepts of PC</b>					
Pharmacological pain management in PC	11.1%	44.3%	34.4%	9.5%	0.8%
Non-pharmacological pain management in PC	7.1%	37.0%	40.8%	13.8%	1.3%
Other physical symptoms than pain	8.9%	52.3%	31.0%	6.8%	0.9%
Basics of PC	13.8 %	58.6 %	22.2 %	4.9 %	0.5 %
Setting goals or limits of care	7.8%	44.1%	38.8%	7.4%	1.8%
End-of-life care and the dying patient	14%	50.6%	28.4%	6.7%	0.2%

533 PC, Palliative care. Unanswered questions (0-5 responders/question) are excluded from the data.

534

535 Table 3. Nursing students' (n = 1331) self-assessed competence in different aspects of palliative  
 536 care. The percentages represent the proportion of students who chose each answer (%).

	Very good	Quite good	Quite insufficient	Very insufficient	I can't say
<b>Competence in psychosocial and existential aspects of PC</b>					
Psychosocial support	5.3%	40%	45.3%	7.7%	1.7%
Mental symptoms in PC	4.8%	40.6%	46.2%	7.4%	0.9%
Supporting a PC patient's closest ones	11.0%	49.9%	33.2%	4.7%	1.3%
Communication in PC	13.9%	59.2%	22.1%	3.4%	1.4%
Existential issues	5.7%	32.1%	47.3%	12.4%	2.5%
Ethical questions in PC	11.6%	58.9%	24.7%	3%	1.8%
Multidisciplinary teamwork in PC	8.5%	49.8%	34.1%	5.8%	1.8%
Multiculturality in PC	1.4%	18.5%	53.7%	22.5%	3.8%
<b>Competence in symptom management and concepts of PC</b>					
Pharmacological pain management in PC	8.4	54.5	33.5%	3.1%	0.8%
Non-pharmacological pain management in PC	5.1%	42.1	45.7%	6.5%	0.6%
Other physical symptoms than pain	9.3%	55.8%	31.1%	3.3%	0.5%
Basics in PC	10.4 %	70 %	18 %	1.2 %	0.4 %
Setting goals or limits of care	6.6%	50.6%	37.6%	4.6%	0.6%
End-of-life care and dying patient	9.5%	60.8%	26.8%	2.1%	0.7%

537

538

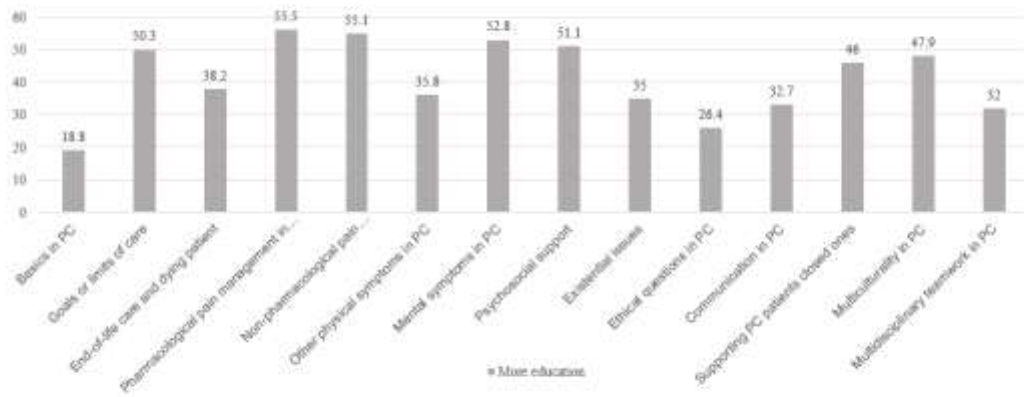


Figure 1. The proportion of nursing students who would have hoped for more education on various contents of palliative care during their nursing education

540

541

542



543

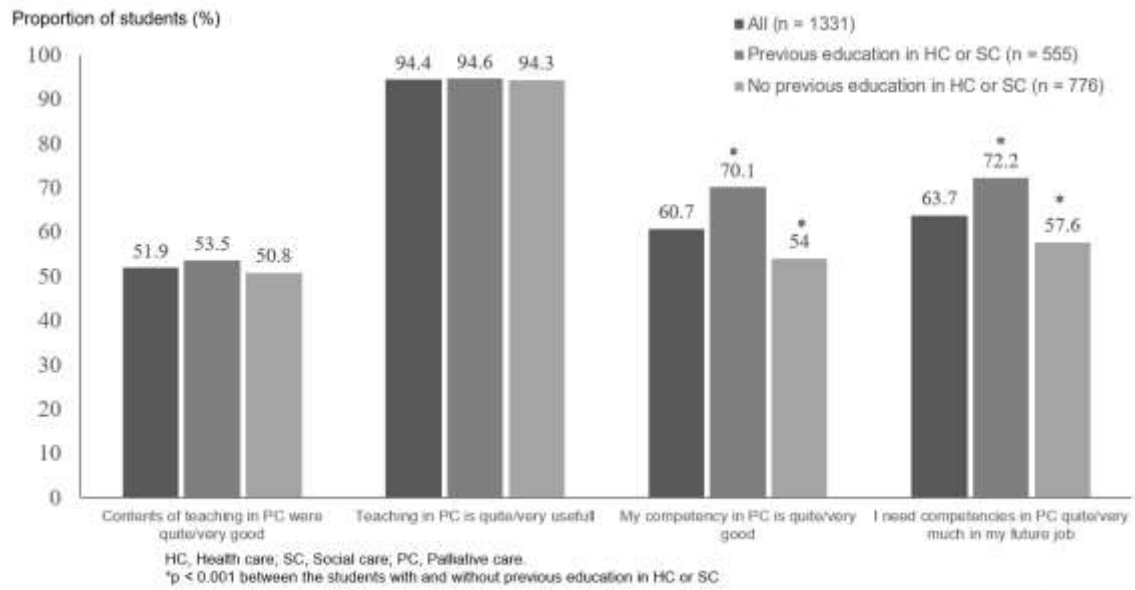


Figure 2. The views of nursing students with and without previous education in health care (HC) or social care (SC) on the content and usefulness of palliative care (PC) teaching, own PC competence, and need for PC competence in their future job.

544

545