




# A Gap Between Children's Rights and Curricular Content in Health, Social Care, and Teacher Education Programs: An Exploratory Cross-Sectional Study

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**Introduction:** Exposure to child maltreatment is a social and public health challenge that will require interprofessional collaboration to overcome. Evidence indicates that professional students in health, social care, and teacher education programs receive inadequate training in recognizing and responding to child maltreatment. The aims are to 1) assess the extent to which these students found that their uniprofessional education and a large-scale interprofessional learning (IPL) course had taught them about children in general, children's rights, and vulnerable/at-risk children; and 2) explore differences in student responses according to age and educational background.

**Methods:** A cross-sectional study. Students (n=2811) completed questionnaires prior to or after IPL courses held in 2019 and 2020 (hybrid case-based, small-group, on-campus courses targeting children, young people, and their families as end users).

**Findings:** The majority (>90%) agreed that it was important to learn about child-related topics. Only 4.3% disagreed that it was important to learn about vulnerable/at-risk children. Health and social care students enhanced their insight into all the child-related topics ( $p < 0.001$ ) after the IPL course. Teacher education and child welfare students reported decreased insight into children in general ( $p < 0.001$  in 2019 and  $p = 0.008$  in 2020) but increased insight into vulnerable/at-risk children in 2020 ( $p = 0.001$ ). According to stratified analyses, there was a significantly increased insight into all child-related topics among physiotherapy and Mendsieck physiotherapy students ( $p < 0.001$ ), decreased insight into children in general among teacher education students ( $p < 0.02$ ), and increased insight into vulnerable/at-risk children among teacher education students ( $p \leq 0.001$ ) in both 2019 and 2020. Age was of minor importance. The response rates ranged from 16.0% to 36.0%.

**Conclusion:** After the IPL course, the health and social care students significantly enhanced their insight into child-related topics, whereas the students in teacher education and child welfare gained increased insight into vulnerable/at-risk children.

**Keywords:** children, student, education, ACE, child maltreatment, abuse, social worker

## Plain Language Summary

- Lack of education and relevant pre-service training in higher education has been suggested as an explanation for why professionals who are legally required to report child maltreatment often fail to do so.
- Child maltreatment is a social and public health challenge and a politically prioritized task. It has been linked to a variety of short- and long-term health impacts. Professional

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background may lend itself to earlier identification of the signs and symptoms of child abuse or violence.

- This study reveals a gap between child-related policies and curricular content in health, social care, and teacher education programs.
- The study supports an interprofessional approach because candidates from health, social care, and teacher education are expected to work with interprofessional competence when dealing with children, young people, and their families.
- This study confirms that health, social care, and teacher education programs have been slow to align curricula with new laws on child maltreatment and with the United Nations Convention on the Rights of the Child. That is long overdue.

## Introduction

Child maltreatment is a social and public health concern around the world that has well-established impacts on and costs to children, families, and society.<sup>1–13</sup> Several definitions of child maltreatment exist, but the World Health Organization's (WHO) defines child maltreatment as:

all types of physical and/or emotional ill-treatment, sexual abuse, neglect, negligence, and commercial or other exploitation, which results in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power.<sup>12</sup>

Children who are vulnerable or at-risk are a complex group<sup>14,15</sup> that includes children with disabilities,<sup>16</sup> children living in institutions,<sup>17</sup> children with parents unable to care for the child,<sup>18,19</sup> with parents who undergo divorce,<sup>9,20</sup> with parents in prison,<sup>21</sup> with parents who have substance abuse problems,<sup>18,22</sup> and poverty.<sup>9,23</sup> Children in vulnerable situations face the highest risk of violation of their rights.<sup>24</sup> This causes many of these children to adopt risky health and social behaviors, such as drinking, overeating, smoking, and sexual promiscuity, as a means of coping with the traumas they have experienced.<sup>10,12,13</sup> These risky behaviors have been shown to generally translate into poor health and early death.<sup>8,15,25</sup>

According to the WHO, about 300 million children worldwide aged 2–4 years regularly suffer physical punishment and other forms of violence, and one in five women and one in 13 men under the age of 20 have been victims of some form of forced sexual abuse.<sup>12</sup> In a meta-analysis, the global prevalence of various types of

child maltreatment was estimated at 22.6%, and prevalence varied significantly between countries.<sup>26</sup> A review from the Nordic countries found differences in the prevalence of child maltreatment between countries.<sup>27</sup> This review suggested that the prevalence of witnessing domestic violence was in the range of 7–12.5%, of severe physical abuse in the range of 3–9%, and of child sexual abuse in the range of 0.2–1.2%.<sup>27</sup> In 2020, 4% of Norwegian children aged 0–22 years had measures from the Child Welfare Services.<sup>28</sup> A Norwegian report stated that 20% of adolescents have experienced physical violence and that 20% have experienced psychological violence from their parents.<sup>13</sup> Most of the participants that had been subjected to one type of violence or abuse had also experienced other forms of violence or abuse, and girls had more often been exposed to several types of violence than had boys.<sup>13</sup>

Health and social personnel and teachers are legally mandated to report suspicion of any form of child maltreatment to the Child Welfare Services.<sup>29–32</sup> However, public supervision of child welfare, health, and social services in Norway has documented that professionals often do not behave in a manner that is consistent with the spirit of the Norwegian law.<sup>33,34</sup>

Lack of child-related education and pre-service training has been suggested as an explanation for why professionals who are legally mandated to report child maltreatment often fail to do so.<sup>35,36</sup> Signs of mistreatment are often diffuse, and the topic of children and maltreatment is variously defined, especially in those countries in which child labor is a traditional practice.<sup>12</sup> Understanding and interventions differ, as do national politics.<sup>7</sup> The lack of training in teacher education programs, which was highlighted many years ago, may result in teachers who are not entirely aware of the indicators of child maltreatment or how to report suspected maltreatment.<sup>1,37–48</sup> Similarly, a review from Canada indicates that health and social care students receive inadequate training in recognizing and responding to child maltreatment.<sup>49</sup> Child-related content in general nursing curricula varies considerably across Europe, which may be due to the lack of a European standard or to a lack of focus on children in general nursing curricula.<sup>50</sup>

Many children have several risk factors at the same time and need coordinated help in multiple arenas and within multiple specialized services.<sup>51</sup> A recent Norwegian law states that all professionals working with

children are required to increase interprofessional collaboration (IPC) between the services.<sup>51</sup> The intention is to bridge the distance between the different welfare services, to reduce inadequate coordination and IPC, and to prevent pulverization of liability. Interprofessional learning (IPL) has been suggested to achieve improved IPC.<sup>52</sup> IPL facilitates students from different professions learning with, from, and about each other in order to improve IPC.<sup>52</sup> Currently, students from education, health, and social study programs are mainly educated in trajectories that are built on different disciplinary professional identities, cultures, traditions, and syllabi, all of which may act as barriers to professional collaboration and teamwork.<sup>53</sup> Knowledge boundaries between different professions in the welfare services include differences in legislation and duties of confidentiality, as well as different definitions, cultures, curricula, procedures, and knowledge bases.<sup>51</sup> An ongoing cross-sectional IPL study at Oslo Metropolitan University (OsloMet)<sup>54</sup> made it possible to investigate the preparedness of students in health, social care, and teacher education to deliver services to children with normal and not normal childhood experiences. When IPL is expanded beyond health care to include teachers and child welfare students, the latter will contribute a higher knowledge base on children, young people, and their families. Bronfenbrenner's ecological systems theory<sup>55</sup> is used to better understand the context of the child's situation, how the interaction between the different system levels affects the child, and the outcome of the intervention.<sup>54</sup> As previously described,<sup>54</sup> we applied social constructivist theory and a case-based, small-group learning approach in the IPL course,<sup>56</sup> which is considered a useful strategy for facilitating IPL.<sup>56–58</sup> Although there is an identified need for educators to better prepare students for IPC, little has been reported on disciplinary differences in IPL preparedness with respect to unequal knowledge bases concerning children and maltreatment of children; thus, little has been reported on their preparedness for IPC targeting children, young people, and their families.<sup>51</sup>

The aims of this study are to: 1) assess the extent to which students of pre-service teacher education, health, and social care education found that their uniprofessional education and a large-scale IPL course had taught them about children in general, children's rights, and vulnerable/at-risk children (hereafter referred to as child-related topics); and 2) explore differences in student responses according to age and educational background.

## Materials and Methods

### Setting

The data for this quantitative cross-sectional study consisted of responses from undergraduate students subject to compulsory participation in a large-scale blended IPL course (course name: INTER1100) at OsloMet in Norway, which has previously been described in detail.<sup>54,59–61</sup> The IPL course is a part of an educational intervention entitled INTERACT (Interprofessional Interaction with Children and Young People) at OsloMet that aims to meet society's demands for better coordination of services in relation to children and young people, better interaction between professionals, and better cooperation between children/young people and professionals.<sup>61</sup> The project extended IPL beyond health and social care to include teacher education and child welfare students because these professions must collaborate in real-life situations involving children, young people, and their families. Data were collected before (pre) and after (post) course delivery in both 2019 and 2020 (ie before the lockdown in March 2020 due to the COVID-19 pandemic in Norway).

### Participants

Undergraduate students (n=1401 in 2019 and n=1410 in 2020) were enrolled in the following education programs: Early Childhood Education, Primary and Lower Secondary Teacher Education, Teacher Education in Art and Design (not attaining in 2019), Physiotherapy, Mensendieck Physiotherapy, Nursing, Social Work, Child Welfare, and Occupational Therapy. All of the nursing students and 49% of the physiotherapy students were second-year students, while the others were first-year students in 2019. In 2020, only the nursing students were second-year students.<sup>61</sup> The nursing students were located on the Kjeller campus, the others on the Pilestredet campus. The enrolled students were divided into pre-defined IPL groups, each consisting of eight students from the health, social care, and teacher education programs. The IPL groups therefore consisted of students with different knowledge about children. The IPL course was compulsory; thus, no inclusion criteria were applied.

Supervisors (n=13) were recruited from among the staff, master students, and professionals working in the field and were either educated as teachers (n=9) or as health personnel (one from Nursing, two from

Physiotherapy, and one from Mensendieck Physiotherapy).<sup>60</sup>

## Blended Small-Group Learning Course

The provision of the 2020 IPL course was based on the 2019 IPL course.<sup>54</sup> The required coursework included participation in a two-day seminar and submission of an IPL group assignment. The seminar days were structured as a combination of face-to-face IPL group discussions on campus and the use of digital learning materials provided by the learning management system (LMS) Canvas. The latter included case-based learning material (produced by user organizations, employers, and public authorities) and mini lectures (produced by staff and colleagues from the working field) that were divided into different sections. Following a flipped classroom approach, digital learning material was made available through LMS Canvas prior to the IPL course.<sup>62</sup> The students were introduced to free online learning material about parenthood, children's development, and interaction between adults and children that was provided by the government,<sup>63</sup> and they also had access to specially prepared flipped classroom video lectures about developmental psychology. They were also introduced to a freely available digital platform for collaboration and competence sharing between municipalities, hospitals, and educational institutions (Kompetansebroen.no) and to a concrete example from Fauske municipality on how to observe children in kindergarten and school. Articles 2–5, 7, 17, 23, 30 and 31 of the Convention on the Rights of the Child<sup>3</sup> were presented in video clips provided by the Ombudsperson for Children. To understand how the inherent qualities of children and their environments interact and influence growth and development, participants were taught Bronfenbrenner's ecological systems theory.<sup>55</sup>

During the first seminar day, the students learned about children's rights with the following learning objective: "is familiar with the Ombudsperson for Children's role and responsibilities"; "is capable of explaining the Convention on the Rights of the Child"; and "is familiar with the right to participation and co-determination established by the Ombudsperson for Children." The students were instructed to watch a video clip about the role of the Ombudsperson for Children and read through the rights poster (rights at different ages) published by the government.<sup>64</sup> They discussed the following questions: "What have you learned about the legal basis that governs children's participation, such as the right to education?"; "Why are there different

legal bases for health, social work, kindergarten, and school?"; and "Do you know any situations in which children's rights may be violated?" The session was concluded with a one-minute paper. The students were encouraged to repeat the learning objectives, list keywords individually, share one of their keywords with the rest of the group, and explain why they chose it.

During the second seminar day, students learned about interprofessional work among children, young people, and their families. The digital learning material highlighted that although most children have good lives in Norway, IPC between child welfare, health, and social services unfortunately does not work as it should. In 2019, the seminar emphasized serious failures in the handling of cases that led to children being exposed to violence, sexual abuse, and neglect. The learning objectives were: "Introductory knowledge of IPC regarding children"; "Introductory knowledge of the consequences of a lack of collaboration between the professions"; and "Introductory knowledge of ethical dilemmas, the duty to provide information, and the duty of confidentiality as obstacles to IPC." The students were given examples of measures that have been initiated in the municipalities to improve IPC, such as a video clip<sup>65</sup> about a collaboration initiated through a joint assignment from multiple ministries that focuses on vulnerable children aged 0–24 years and their families.<sup>65</sup> The video clip portrays a child with many challenges, which means that multiple services, sectors, and people are in contact with the child and the child's family. The aim<sup>65</sup> is the provision of a service that is both better coordinated and more integrated. The students also discussed a specially prepared video clip from Lørenskog municipality that gave an example of a real-life IPC targeting children, young people, and their families that focuses on students who have quit school. One of the questions the IPL groups were asked to discuss was: "If IPC is the solution, then what's the problem?". During the course, they learned about children as next of kin,<sup>66</sup> diversity (social and cultural) and multilingualism (only in 2019), tolerance, observation, new research findings from the Ungdata surveys,<sup>67</sup> and the Ombudsperson for Children.

## Online Evaluation Survey

No suitable national or international questionnaire had been developed and/or validated in Norway. Hence, questions for the present study had to be specially prepared as part of larger questionnaires targeting students and supervisors.<sup>54</sup> Questionnaire-based quantitative research



using an anonymous self-administrated online survey (Nettskjema)<sup>68</sup> and previous research<sup>54,59,69</sup> was used to develop the questionnaires. Nettskjema is a tool for designing and conducting online surveys with customized features for research. It is easy to use, and respondents can submit answers from a browser on a computer, mobile phone, or tablet.<sup>68</sup> After the questionnaires were tested and commented on by university colleagues (academic and administrative) and by one student, they were revised accordingly. For the present study, the students were asked the following closed questions after delivery of the IPL course in both 2019 and 2020 (post-2019, n=507 and post-2020, n=363):

To what extent do you feel that the IPL course has given you better academic insight into children in general, vulnerable/at-risk children, and children's rights?

Two separate closed questions were asked before the IPL course in 2020 (pre-2020, n=454):

To what extent have you learned about the following (ie children in general, vulnerable/at-risk children, and children's rights) as part of your degree?

and

In the upcoming IPL course, to what degree do you think it is important to learn about children in general, vulnerable/at-risk children, and children's rights?

A closed question for the supervisors was also included after the IPL course in 2020 (n=13):

To what extent do you feel that the IPL course has given the students better academic insight into children in general, vulnerable/at-risk children, and children rights?

The participants could respond on a scale from 0 ("completely disagree") to 5 ("completely agree"). Separate questions were asked about children as next of kin.<sup>66</sup> In Norwegian legal terms, a "child" means any person under 18 years of age,<sup>3</sup> and the term "young people" is often used for people up to 25 years of age.<sup>31</sup> In this paper, we refer to children and young people as "children." The student questionnaires (pre/post) were provided as an internet link embedded in the students' LMS, whereas the supervisor (post) questionnaire was distributed via email. One reminder was sent to increase the response rate.

## Data Analysis

Frequencies and percentages were used to present the data. As the distribution of responses was skewed, the responses were dichotomized to either "agree" (score 3–5) or "disagree" (score 0–2). A z-test for proportions was applied to compare the dichotomized pre- and post-responses. To assess the change between the dichotomized pre- and post-course responses from 2019 and 2020, a logistic regression model with a time dummy (2019 or 2020), a period dummy (pre or post), and an interaction between them was estimated. Analyses were further stratified by study programs dichotomized to either "teacher education and child welfare" (consisting of Early Childhood Education and Care, Primary and Lower Secondary Teacher Education, Child Welfare, and Teacher Education in Art and Design, since they only target children as end users) or "health and social care" (consisting of Physiotherapy, Mensendieck Physiotherapy, Nursing, Social Work, and Occupational Therapy, as they target all age groups as end users) by program as a nine-category variable, and by age, dichotomized to less than 25 or more than 25 years. Sensitivity analyses assuming that the scale was continuous (0–5) were performed by applying an independent samples *t*-test instead of a z-test for proportions. All tests were two-sided, and the results with *p*-values below 0.05 were considered statistically significant. Due to the exploratory nature of the study, no adjustment was made for multiple hypothesis testing. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) v27.

## Ethics

This study followed the Ethical Guidelines for Research published by Oslo Metropolitan University (OsloMet),<sup>70</sup> which are based on the Act relating to Universities and University Colleges, on the Act relating to Ethics and Integrity in Research and pursuant regulations, and on the ethical norms prepared by the Norwegian National Committees for Research Ethics. According to the Norwegian Centre for Research Data (NSD),<sup>71</sup> the study was considered completely anonymous, as no sociodemographic information beyond the participants' age and gender was included; hence, the study was not subject to reporting requirements and should not be reported to the Norwegian Regional Ethics Committee (NSD reference number 741649). In accordance with ethical guidelines,<sup>70</sup> the data were collected through an anonymous online

survey using Nettskjema.<sup>68</sup> All the participants were above 18 years of age and were provided written information about the study beforehand in LMS Canvas. The voluntariness and anonymity of the participants were emphasized, and the participants were informed about the purpose of the study and how the data would be used. Answering the questionnaire was considered informed consent to participate. The study complies with the Declaration of Helsinki.

## Results

### Demographic Characteristics

Students in all programs included in this study answered questionnaires. Response rates were 16.0% (pre-course 2019), 36.0% (post-course 2019), 32.2% (pre-course 2020), and 25.8% (post-course 2020) (Table 1). Among the students, 56.6% (pre-course 2019), 48.3% (post-course 2019), 43.8% (pre-course 2020), and 46.0% (post-course 2020) were taking health and social care education programs.

**Table 1** Characteristics of Students in a Large-Scale Blended Interprofessional Learning (IPL) Course Delivered in 2019 (Post-Course 2019) and in 2020 (Pre-Course and Post-Course 2020). Numbers are Stated as Frequencies and Percentages

Variable	Pre-Course 2019 <sup>a</sup> (n = 221)	Post-Course 2019 <sup>a</sup> (n=507)	Pre-Course 2020 (n=454)	Post-Course 2020 (n=363) <sup>a</sup>
<b>Age</b>				
21 years or younger	101 (45.7)	255 (50.3)	241 (53.1)	205 (56.8)
22–24 years	65 (29.4)	134 (26.4)	104 (22.9)	74 (20.5)
25–27 years	22 (10.0)	63 (12.4)	42 (9.3)	34 (9.4)
≥28 years or older	33 (14.9)	55 (10.8)	67 (14.8)	48 (13.3)
<b>Study programs</b>				
Nursing	25 (11.3)	50 (9.9)	47 (10.4)	35 (9.6)
Physiotherapy	39 (17.6)	104 (20.5)	51 (11.2)	29 (8.0)
Mensendieck Physiotherapy Physiotherapy	14 (6.3)	16 (3.2)	26 (5.7)	18 (5.0)
Teacher Education <sup>b</sup>	45 (20.4)	133 (26.2)	108 (23.8)	92 (25.3)
Teacher Education in Art and Design	NA	NA	28 (6.2)	23 (6.3)
Early Childhood Education and Care	33 (14.9)	95 (18.7)	87 (19.2)	69 (19.0)
Occupational Therapy	15 (6.8)	26 (5.1)	30 (6.6)	16 (4.4)
Child Welfare	18 (8.1)	34 (6.7)	32 (7.0)	35 (9.6)
Social Work	31 (14.0)	47 (9.3)	45 (9.9)	46 (12.7)
<b>Age category</b>				
25 years or younger	101 (45.7)	389 (76.7)	345 (76.0)	279 (77.3)
25 years or older	65 (24.9)	118 (23.3)	109 (24.0)	82 (22.7)
<b>Study programme category</b>				
Health and social care <sup>c</sup>	22 (56.6)	245 (48.3)	199 (43.8)	167 (46.0)
Teaching and child welfare <sup>d</sup>	33 (43.4)	262 (51.7)	255 (56.2)	196 (54.0)

**Notes:** <sup>a</sup>2019 and 2020 post-course demographic data has been previously published (59, 60, 69) <sup>b</sup>Primary and Lower Secondary Teacher Education. <sup>c</sup>Physiotherapy, Mensendieck Physiotherapy Physiotherapy, Nursing, Social Work and Occupational Therapy. <sup>d</sup>Early Childhood Education and Care, Primary and Lower Secondary Teacher Education, Child Welfare, and Teacher Education in Art and Design.

**Abbreviations:** NA, no answer; Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

## Learned in Their Uniprofessional Education Programs

Prior to the 2020 IPL course, 72.0%, 54.3%, and 65.2% of students reported having learned (score 3–5) about children in general, vulnerable/at-risk children, and children's rights, respectively (Table 2). The majority (>90%) agreed that it was important to learn about these topics as part of the IPL course. Only 4.3% disagreed (score 0–2) that it was important to learn about vulnerable/at-risk children.

## Learned in the IPL Course

After the IPL course, 82.7%, 76.4%, and 84.3% agreed (score 3–5) that they had been given better academic insight into children in general, vulnerable/at-risk children, and children's rights, respectively (Table 2).

After the courses in both 2019 and 2020, students reported a significant increase in their insight into children in general ( $p=0.021$  and  $p<0.001$ , respectively), vulnerable/at-risk children (both  $p<0.001$ ), and children's rights (both  $p<0.001$ ) with no differences between them (Table 3).

## Variation in Student Responses According to Educational Background

In both 2019 and 2020, the health and social care students significantly enhanced their insight into children in general, vulnerable/at-risk children, and children's rights (all  $p<0.001$ ) (Table 4). Among students in social care and teacher education programs, there was a significant decrease in insight into children in general ( $p<0.001$  in 2019 and  $p=0.008$  in 2020) and an increase in insight into vulnerable/at-risk children in 2020 ( $p=0.001$ ) but no significant increase in 2019 (Table 4).

Analysis stratified by the education program as a nine-category (Table 5) showed a significant increase in insight into children in general among students in Physiotherapy ( $p<0.001$  in both 2019 and 2020), Mensendieck Physiotherapy ( $p<0.001$  in both 2019 and 2020), Occupational Therapy ( $p=0.017$  in 2019 but not in 2020), and Social Work ( $p=0.009$  in 2019 but not in 2020). Among students of Teacher Education ( $p=0.014$  in 2019 and  $p=0.016$  in 2020), Early Childhood Education ( $p=0.001$  in 2019 but not in 2020), and Teacher Education in Art and Design ( $p=0.008$  in 2020; not

**Table 2** Distribution of Responses to Statements in a Large-Scale Blended Interprofessional Learning (IPL) Course Delivered in 2020 (On a Scale from 0 to 5, State How Much You Agree or Disagree with the Following Statements, Where 0 Means “Completely Disagree” and 5 Means “Completely Agree”). Numbers are Stated as Frequencies and Percentages<sup>a</sup>

Questions:	Scores					
	0	1	2	3	4	5
<b>Pre-course 2020: As part of your degree, to what extent have you learned about (N=454):</b>						
Children in general	26 (5.7)	37 (8.1)	64 (14.1)	91 (20.0)	117 (25.8)	119 (26.2)
Vulnerable/ at risk children	47 (10.4)	69 (15.2)	92 (20.3)	121 (26.7)	67 (14.8)	58 (12.8)
Children's rights	40 (8.8)	45 (9.9)	73 (16.1)	109 (24.0)	105 (23.1)	82 (18.1)
<b>Pre-course 2020: In the upcoming ILP course, to what degree do you think it is important to learn about (N=454):</b>						
Children in general	7 (1.5)	9 (2.0)	18 (4.2)	52 (11.5)	124 (27.3)	244 (53.7)
Vulnerable/at risk children	6 (1.3)	3 (0.7)	11 (2.4)	38 (8.4)	107 (23.6)	289 (63.7)
Children's rights	7 (1.5)	7 (1.5)	24 (5.3)	53 (11.7)	112 (24.7)	251 (55.3)
<b>Post-course 2020: As part of the IPL course, to what extent do you feel that you have given you a better academic insight into (N=363):</b>						
Children in general	6 (1.7)	21 (5.8)	36 (9.9)	90 (24.8)	124 (34.2)	86 (23.7)
Vulnerable/ at risk children	8 (2.2)	27 (7.4)	51 (14.0)	91 (25.1)	116 (32.0)	70 (19.3)
Children's rights	4 (1.1)	11 (3.0)	42 (11.6)	77 (21.2)	130 (35.8)	99 (27.3)

**Notes:** <sup>a</sup>Pre-data and post-data from 2019 were previously published (59, 69).

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

**Table 3** Differences Between 2019 and 2020 in Change from Pre-Course to Post-Course in Proportion of Agreeing Students (Score 3–5)

	2019	2020	2019 vs 2020
<b>Children in general</b>			
Pre, N	220	454	
3–5, n (%)	136 (61.8)	327 (72.0)	
Post, N	505	363	
3–5, n (%)	356 (70.5)	300 (82.6)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	8.7 (1.1; 16.2) 0.021 <sup>a</sup>	12.6 (4.9; 16.3) <0.001 <sup>a</sup>	0.352 <sup>b</sup>
<b>Vulnerable/at risk children</b>			
Pre, N	220	454	
3–5, n (%)	102 (46.4)	246 (54.2)	
Post, N	503	363	
3–5, n (%)	339 (67.4)	277 (76.3)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	21.0 (13.3; 28.8) <0.001 <sup>a</sup>	22.1 (15.8; 28.5) <0.001 <sup>a</sup>	0.566 <sup>b</sup>
<b>Children's rights</b>			
Pre, N	221	454	
3–5, n (%)	122 (55.2)	296 (65.2)	
Post, N	501	363	
3–5, n (%)	395 (78.8)	306 (84.3)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	23.6 (16.2; 31.1) <0.001 <sup>a</sup>	19.1 (13.3; 24.9) <0.001 <sup>a</sup>	0.827 <sup>b</sup>

**Notes:** <sup>a</sup>p-value for z-test for proportions; <sup>b</sup>p-value for logistic regression model.

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

included in 2019), insight into children in general was significantly reduced from pre-course to post-course.

Insight into vulnerable/at-risk children in particular (Table 6) increased significantly from pre-course to post-course among students in Physiotherapy (both  $p < 0.001$ ), Mensendieck Physiotherapy (both  $p < 0.001$ ), Teacher Education ( $p = 0.001$  in 2019 and  $p < 0.001$  in 2020), and Early Childhood Education ( $p = 0.004$  in 2020 but not in 2019). Among students in Child Welfare, this insight decreased significantly in 2020 ( $p = 0.02$ ) and did not change in 2019.

Moreover, insight into children's rights increased significantly among students in Physiotherapy (both  $p < 0.001$ ), Mensendieck Physiotherapy (both  $p < 0.001$ ), Teacher Education ( $p < 0.001$  in 2019 but not in 2020), Occupational Therapy ( $p < 0.001$  in 2019 and  $p = 0.002$  in 2020), and Teacher Education in Art and Design ( $p = 0.007$  in 2020). However, this insight decreased among students in Early Childhood Education in 2019 ( $p = 0.035$ ) (Table 7).

The difference in the increase in insight into children in general and vulnerable/at-risk children from pre- to post-course between 2019 and 2020 was significant among Physiotherapy students ( $p = 0.030$  and  $p = 0.049$ , respectively) and Early Childhood Education students ( $p = 0.037$  and  $p = 0.002$ , respectively) but not for the other groups (Tables 5–6). The reduction in insight into children's rights from pre- to post-course was significantly larger in 2019 than in 2020 among Early Childhood Education students ( $p = 0.037$ ) but not in the other groups (Table 7).

## Variation in Student Responses According to Age

In both age categories (below and above 25 years), students gained new academic insight into vulnerable/at-risk children and children's rights (all  $p < 0.01$  in 2019 and 2020). Regarding insight into children in general, there



**Table 4** Differences Between 2019 and 2020 in Change from Pre-Course to Post-Course in Proportion of Agreeing Students (Score 3–5) Regarding “Children in General”, “Vulnerable/At-Risk Children” and “Children’s Rights”, Stratified by Dichotomized Study Program

	2019	2020	2019 vs 2020
<b>Children in general</b>			
<b>Health and social care <sup>a</sup></b>			
Pre, N	125	199	
3–5, n (%)	49 (39.2)	90 (45.2)	
Post, N	243	167	
3–5, n (%)	174 (71.6)	133 (79.6)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	32.4 (22.1; 42.7)	34.4 (25.2; 43.6)	
p-value	<0.001 <sup>b</sup>	<0.001 <sup>b</sup>	0.565 <sup>c</sup>
<b>Teacher education and child welfare</b>			
Pre, N	95	255	
3–5, n (%)	87 (91.6)	237 (92.9)	
Post, N	262	196	
3–5, n (%)	182 (69.5)	167 (85.2)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	–22.1 (–30.0; –14.2)	–7.7 (–13.6; –1.9)	
p-value	<0.001 <sup>b</sup>	0.008 <sup>b</sup>	0.144 <sup>c</sup>
<b>Vulnerable/at risk children</b>			
<b>Health and social care <sup>a</sup></b>			
Pre, N	124	199	
3–5, n (%)	39 (31.5)	75 (37.7)	
Post, N	243	167	
3–5, n (%)	160 (65.8)	119 (71.3)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	34.3 (24.3; 44.5)	33.6 (24.0; 43.2)	
p-value	<0.001 <sup>b</sup>	<0.001 <sup>b</sup>	0.940 <sup>c</sup>
<b>Teacher education and child welfare</b>			
Pre, N	96	255	
3–5, n (%)	63 (65.6)	171 (67.1)	
Post, N	260	196	
3–5, n (%)	179 (68.8)	158 (80.6)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	3.2 (–14.3; 7.8)	13.5 (5.6; 21.5)	
p-value	0.562 <sup>b</sup>	0.001 <sup>b</sup>	0.093 <sup>c</sup>
<b>Children’s rights</b>			
<b>Health and social care<sup>3</sup></b>			
Pre, N	125	199	
3–5, n (%)	50 (40.0)	89 (44.7)	
Post, N	243	167	
3–5, n (%)	189 (77.8)	136 (81.4)	

(Continued)

**Table 4** (Continued).

	2019	2020	2019 vs 2020
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	37.8 (27.7; 47.8) <0.001 <sup>b</sup>	36.7 (27.6; 45.8) <0.001 <sup>b</sup>	0.925 <sup>c</sup>
<b>Teacher education and child welfare</b>			
Pre, N 3–5, n (%)	96 72 (75.0)	255 207 (81.2)	
Post, N 3–5, n (%)	258 206 (79.8)	196 170 (86.7)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	4.8 (–5.1; 14.8) 0.322 <sup>b</sup>	5.5 (–1.2; 12.3) 0.114 <sup>b</sup>	0.721 <sup>c</sup>

**Notes:** <sup>a</sup>p-value for z-test for proportions; <sup>b</sup>p-value for logistic regression model; <sup>c</sup>only Social Workers.

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

were significant increases among students <25 years in 2020 ( $p=0.003$ ) and among older students in 2019 ( $p=0.041$ ) (data not shown).

## Sensitivity Analysis

The results of sensitivity analyses assessing scores as continuous variables did not deviate from the analysis on dichotomized answer alternatives.

## Supervisors

The supervisors mainly agreed that the students had gained deeper academic insight into children in general, vulnerable/at-risk children, and children's rights: none of the supervisors chose scores 0–2, and all responses were evenly distributed between scores 3–5.

## Discussion

The results of this study showed that the students wanted to learn more about child-related topics regardless of educational background and age and that most students possessed increased insight into these topics after the IPL course. Few students had learned about vulnerable/at-risk children as part of their training. After the IPL course, the students in health and social care generally felt that they had learned more than did the students in teacher education and child welfare; notably, the teacher education and child welfare students gained increased insight into vulnerable/at-risk children.

The present study corresponds with previous disciplinary research indicating that teachers, healthcare providers, and social care providers<sup>1,43–47,49,50</sup> receive little or no

training in recognizing and responding to child-related topics relevant to IPC targeting children, young people, and their families as end users. In particular, our data correlate with data from the study conducted by the Norwegian Centre for Violence and Traumatic Stress Studies in which students in teacher education and child welfare study programs were asked about the focus their program placed, if any, on the following topics: 1) The United Nations Convention on the Rights of the Child, 2) physical child abuse, 3) child sexual abuse, and 4) conversational methods with children.<sup>48</sup> The study found a lack of educational preparation regarding how to deal with child maltreatment and no clear increase in focus on these issues in uniprofessional education programs in the period 2007–2015.<sup>48</sup> This present study expands previous research by suggesting a serious gap between, on one hand, the intention in legislation and the United Nations Convention on the Rights of the Child<sup>31,51,72,73</sup> and, on the other hand, implementation in educational programs, not only in teacher education and child welfare programs but also in health and social care programs.

Although the United Nations Convention on the Rights of the Child<sup>3</sup> and the new law<sup>51</sup> should guide teaching in professional study programs, implementation may, to some extent, vary. Teaching practices pertaining to various forms of child maltreatment are most likely influenced by factors such as cultural taboos and the personal characteristics of individual teachers.<sup>45,46</sup> As such, there appears to be too much room for individual interpretation in the field of, for example, sexual abuse.<sup>46</sup>

**Table 5** Differences Between 2019 and 2020 in Change from Pre-Course to Post-Course in Proportion of Agreeing Students (Score 3–5) Regarding “Children in General”, Stratified by Study Program

	2019	2020	2019 vs 2020
<b>Nursing</b>			
Pre, N	25	47	
3–5, n (%)	15 (60.0)	34 (72.3)	
Post, N	49	35	
3–5, n (%)	30 (61.2)	21 (60.0)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	1.2 (–22.3; 26.1) 0.920 <sup>a</sup>	–12.3 (–33.6; 9.5) 0.238 <sup>a</sup>	0.380 <sup>b</sup>
<b>Physiotherapy</b>			
Pre, N	39	51	
3–5, n (%)	9 (23.1)	11 (21.6)	
Post, N	104	29	
3–5, n (%)	74 (71.2)	28 (96.6)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	48.1 (28.8; 62.1) <0.001 <sup>a</sup>	75.0 (5.35; 85.3) <0.001 <sup>a</sup>	<b>0.030<sup>b</sup></b>
<b>Mensendieck Physiotherapy</b>			
Pre, N	14	26	
3–5, n (%)	2 (14.3)	5 (19.2)	
Post, N	16	18	
3–5, n (%)	14 (87.5)	17 (94.4)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	73.2 (33.1; 88.9) <0.001 <sup>a</sup>	75.2 (43.6; 88.3) <0.001 <sup>a</sup>	0.735 <sup>b</sup>
<b>Teacher Education</b>			
Pre, N	45	108	
3–5, n (%)	40 (88.9)	101 (93.5)	
Post, N	133	92	
3–5, n (%)	94 (70.7)	76 (82.6)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	–18.2 (–29.3; –2.6) 0.014 <sup>a</sup>	–10.9 (–21.2; –1.2) 0.016 <sup>a</sup>	0.899 <sup>b</sup>
<b>Early Childhood Education and Care</b>			
Pre, N	32	87	
3–5, n (%)	31 (96.9)	81 (93.1)	
Post, N	95	69	
3–5, n (%)	63 (66.3)	63 (91.3)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	–30.6 (–41.5; –13.1) 0.001 <sup>a</sup>	–1.8 (–12.5; 7.8) 0.674 <sup>a</sup>	<b>0.037<sup>b</sup></b>

(Continued)

**Table 5** (Continued).

	2019	2020	2019 vs 2020
<b>Occupational Therapy</b>			
Pre, N	15	30	
3–5, n (%)	4 (26.7)	15 (50.0)	
Post, N	26	16	
3–5, n (%)	17 (65.4)	12 (75.0)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	38.7 (3.3; 63.1)	25.0 (–8.1; 49.8)	
p-value	0.017 <sup>a</sup>	0.101 <sup>a</sup>	0.579 <sup>b</sup>
<b>Child Welfare</b>			
Pre, N	18	32	
3–5, n (%)	16 (88.9)	30 (93.8)	
Post, N	34	35	
3–5, n (%)	25 (73.5)	28 (80.0)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	–15.4 (–35.7; 12.8)	–13.8 (–32.0; 5.6)	
p-value	0.197 <sup>a</sup>	0.099 <sup>a</sup>	0.825 <sup>b</sup>
<b>Social Work</b>			
Pre, N	31	45	
3–5, n (%)	18 (58.1)	25 (55.6)	
Post, N	46	46	
3–5, n (%)	39 (84.8)	32 (69.6)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	26.7 (4.6; 47.3)	14.0 (–7.2; 33.7)	
p-value	0.009 <sup>a</sup>	0.168 <sup>a</sup>	0.262 <sup>b</sup>
<b>Teacher Education in Art and Design</b>			
Pre, N		28	
3–5, n (%)	NA	25 (89.3)	
Post, N		23	
3–5, n (%)		23 (100)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	NA	–7.7 (–13.6; –1.9)	NA
p-value		0.008 <sup>a</sup>	

**Notes:** <sup>a</sup> p-value for z-test for proportions. <sup>b</sup> p-value for logistic regression model. Bold figures indicate a p-value below 0.05 (considered statistically significant).

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

A more robust knowledge base on children and children’s rights among the teacher education and child welfare students was to be expected. Thus, their lower learning outcomes from the IPL course on the topics dealing with normal and healthy childhood were also to be expected. Children who need help must receive it as early as possible to prevent their challenges from becoming greater and more complex.<sup>73</sup> Teachers therefore play a vital role in identifying, reporting, and preventing

various forms of child maltreatment.<sup>37,43</sup> Although a positive relationship with a supportive adult, such as a teacher, can promote resilience in children who are victims of abuse,<sup>74</sup> the present data suggest that teachers still lack relevant training.<sup>1,37–48</sup> It was recently decided that, in Norwegian teacher education programs, priority should be given to three interdisciplinary themes: democracy and citizenship, sustainable development, and public health and well-being.<sup>75</sup> Addressing child maltreatment

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**Table 6** Differences Between 2019 and 2020 in Change from Pre-Course to Post-Course in Proportion of Agreeing Students (Score 3–5) Regarding “Vulnerable/At-Risk Children”, Stratified by Study Program

	2019	2020	2019 vs 2020
<b>Nursing</b>			
Pre, N	25	47	
3–5, n (%)	12 (48.0)	27 (57.4)	
Post, N	49	35	
3–5, n (%)	29 (59.2)	19 (54.3)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	11.2 (–14.0; 35.0) 0.356 <sup>a</sup>	–3.2 (–25.5; 19.3) 0.772 <sup>a</sup>	0.386 <sup>b</sup>
<b>Physiotherapy</b>			
Pre, N	38	51	
3–5, n (%)	5 (13.2)	8 (15.7)	
Post, N	103	29	
3–5, n (%)	70 (68.0)	28 (96.6)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	54.8 (36.2; 66.7) <0.001 <sup>a</sup>	80.1 (59.8; 89.7) <0.001 <sup>a</sup>	0.049 <sup>b</sup>
<b>Mensendieck Physiotherapy</b>			
Pre, N	14	26	
3–5, n (%)	2 (14.3)	2 (7.7)	
Post, N	16	18	
3–5, n (%)	13 (81.3)	16 (88.9)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	67.0 (26.6; 85.1) <0.001 <sup>a</sup>	81.2 (49.9; 92.3) <0.001 <sup>a</sup>	0.367 <sup>b</sup>
<b>Teacher Education</b>			
Pre, N	45	108	
3–5, n (%)	21 (46.7)	62 (57.4)	
Post, N	133	92	
3–5, n (%)	98 (73.7)	75 (81.5)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	27.0 (9.5; 43.4) 0.001 <sup>a</sup>	24.1 (10.6; 36.3) <0.001 <sup>a</sup>	0.963 <sup>b</sup>
<b>Early Childhood Education and Care</b>			
Pre, N	33	87	
3–5, n (%)	25 (75.8)	60 (69.0)	
Post, N	93	69	
3–5, n (%)	56 (60.2)	61 (88.4)	
Difference in change pre to post Proportion 3–5 (% (95% CI)) p-value	–15.5 (–32.0; 5.3) 0.110 <sup>a</sup>	19.4 (5.4; 32.0) 0.004 <sup>a</sup>	0.002 <sup>b</sup>

(Continued)



**Table 6** (Continued).

	2019	2020	2019 vs 2020
<b>Occupational Therapy</b>			
Pre, N	15	30	
3–5, n (%)	3 (20.0)	14 (46.7)	
Post, N	26	16	
3–5, n (%)	13 (50.0)	7 (43.8)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	30.0 (–4.7; 54.5)	–2.9 (–32.6; 28.4)	
p-value	0.057 <sup>a</sup>	0.849 <sup>a</sup>	0.124 <sup>b</sup>
<b>Child Welfare</b>			
Pre, N	18	32	
3–5, n (%)	17 (94.4)	28 (87.5)	
Post, N	34	35	
3–5, n (%)	25 (73.5)	22 (62.9)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	–20.9 (–39.8; 6.2)	–24.6 (–44.4; –1.6)	
p-value	0.069 <sup>a</sup>	0.020 <sup>a</sup>	0.758 <sup>b</sup>
<b>Social Work</b>			
Pre, N	31	45	
3–5, n (%)	16 (51.6)	24 (53.3)	
Post, N	47	46	
3–5, n (%)	34 (72.3)	28 (60.9)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	20.7 (–2.7; 42.3)	7.5 (–13.8; 28.1)	
p-value	0.061 <sup>a</sup>	0.465 <sup>a</sup>	0.362 <sup>b</sup>
<b>Teacher Education in Art and Design</b>			
Pre, N		28	
3–5, n (%)	NA	21 (75.0)	
Post, N		23	
3–5, n (%)		21 (91.3)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	NA	16.3 (–8.5; 37.8)	NA
p-value		0.129 <sup>a</sup>	

**Notes:** <sup>a</sup>p-value for z-test for proportions. <sup>b</sup>p-value for logistic regression model. Bold figures indicate a p-value below 0.05 (considered statistically significant).

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

and abnormal childhood experiences could form part of these interdisciplinary themes.<sup>46</sup>

Student-led discussions around video-based cases<sup>65,76,77</sup> guided the IPL group work (case-based learning). The IPL groups were, however, free to discuss and add any IPC-relevant issues in their IPL group discussions, in addition to the predefined tasks, based on, for example, their previous work experience or uniprofessional training and/or theoretical knowledge. The essence of IPL is for

students to learn with, from, and about other professions.<sup>52</sup>

It is therefore possible that some of the IPL groups discussed the NICE (National Institute for Health & Care Excellence) guidelines,<sup>78</sup> which aim to raise awareness and assist professionals who are not child protection specialists in talking with children and identifying the features of physical, sexual, and emotional abuse, neglect, and fabricated or induced illness. It is also possible that some of the IPL groups discussed use of ACE (Adverse

**Table 7** Differences Between 2019 and 2020 in Change from Pre-Course to Post-Course in Proportion of Agreeing Students (Score 3–5) Regarding “Children’s Right”, Stratified by Study Program

	2019	2020	2019 vs 2020
<b>Nursing</b>			
Pre, N	25	47	
3–5, n (%)	14 (56.0)	22 (46.8)	
Post, N	48	35	
3–5, n (%)	37 (77.1)	22 (62.9)	
Difference in change pre to post Proportion 3–5 (% (95% CI))	21.1 (–3.0; 44.3)	16.1 (–7.3; 37.0)	
p-value	0.063 <sup>a</sup>	0.150 <sup>a</sup>	0.649 <sup>b</sup>
<b>Physiotherapy</b>			
Pre, N	39	51	
3–5, n (%)	6 (15.4)	20 (39.2)	
Post, N	104	29	
3–5, n (%)	82 (78.8)	28 (96.6)	
Difference in change pre to post Proportion 3–5 (% (95% CI))	63.5 (45.1; 74.9)	57.3 (35.5; 70.8)	
p-value	<0.001 <sup>a</sup>	<0.001 <sup>a</sup>	0.522 <sup>b</sup>
<b>Mensendieck Physiotherapy</b>			
Pre, N	14	26	
3–5, n (%)	2 (14.3)	2 (7.7)	
Post, N	16	18	
3–5, n (%)	15 (93.8)	17 (94.4)	
Difference in change pre to post Proportion 3–5 (% (95% CI))	79.5 (40.1; 92.6)	86.8 (56.3; 95.0)	
p-value	<0.001 <sup>a</sup>	<0.001 <sup>a</sup>	0.650 <sup>b</sup>
<b>Teacher Education</b>			
Pre, N	45	108	
3–5, n (%)	25 (55.6)	82 (75.9)	
Post, N	131	92	
3–5, n (%)	113 (86.3)	79 (85.9)	
Difference in change pre to post Proportion 3–5 (% (95% CI))	30.7 (14.4; 47.0)	9.9 (–1.9; 21.1)	
p-value	<0.001 <sup>a</sup>	0.077 <sup>b</sup>	0.078 <sup>b</sup>
<b>Early Childhood Education and Care</b>			
Pre, N	33	87	
3–5, n (%)	30 (90.9)	77 (88.5)	
Post, N	93	69	
3–5, n (%)	68 (73.1)	64 (92.8)	
Difference in change pre to post Proportion 3–5 (% (95% CI))	–17.8 (–29.3; –1.3)	4.3 (–6.8; 14.4)	
p-value	0.035 <sup>a</sup>	0.373 <sup>a</sup>	0.037 <sup>b</sup>

(Continued)

Table 7 (Continued).

	2019	2020	2019 vs 2020
<b>Occupational Therapy</b>			
Pre, N	15	30	
3–5, n (%)	2 (13.3)	12 (40.0)	
Post, N	26	16	
3–5, n (%)	19 (73.1)	14 (87.5)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	59.7 (24.4; 78.0)	47.5 (14.3; 67.2)	
p-value	<0.001 <sup>a</sup>	0.002 <sup>a</sup>	0.670 <sup>b</sup>
<b>Child Welfare</b>			
Pre, N	18	32	
3–5, n (%)	17 (94.4)	30 (93.8)	
Post, N	34	35	
3–5, n (%)	25 (73.5)	27 (77.1)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	–20.9 (–39.8; 6.2)	–16.6 (–35.0; 3.3)	
p-value	0.069 <sup>a</sup>	0.056 <sup>a</sup>	0.817 <sup>b</sup>
<b>Social Work</b>			
Pre, N	31	47	
3–5, n (%)	26 (83.9)	35 (74.5)	
Post, N	47	45	
3–5, n (%)	35 (74.5)	33 (73.3)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	–9.4 (–27.5; 12.0)	–1.1 (–20.2; 17.9)	
p-value	0.327 <sup>a</sup>	0.904 <sup>a</sup>	0.510 <sup>b</sup>
<b>Teacher Education in Art and Design</b>			
Pre, N		28	
3–5, n (%)	NA	18 (64.3)	
Post, N		23	
3–5, n (%)		22 (95.7)	
Difference in change pre to post			
Proportion 3–5 (% (95% CI))	NA	31.4 (5.8; 52.0)	NA
p-value		0.007 <sup>a</sup>	

**Notes:** <sup>a</sup>p-value for z-test for proportions. <sup>b</sup>p-value for logistic regression model. Bold figures indicate a p-value below 0.05 (considered statistically significant).

**Abbreviations:** Pre, questionnaire data before course delivery; Post, questionnaire data after course delivery.

Childhood Experiences) scores,<sup>8,25</sup> which describe the relationship between ACEs, disease, and potential early death.<sup>25,74</sup> Moreover, some of the students might have been aware of the existence of digital avatars aimed at training professionals to talk to children about neglect, sexual abuse, and violence, the purpose of which is to improve the skills of professionals or adults tasked with protecting vulnerable/at-risk children.<sup>79,80</sup> When using these avatars, learners may roleplay as various adults and

practice interacting with children who may have been subjected to abuse, violence, or other forms of neglect. The aim is to train the learners to build trust with children through conversation. They also learn what they should do in practice if they ever find themselves in a situation in which a child shares something that requires them to put the child in contact with other public bodies. Such tools may be used in both uniprofessional and IPL courses.

It is a complex task to develop learning designs on child-related topics, including child maltreatment, that give high learning outcomes for students from many different education programs. Nevertheless, we assume that these students' interprofessional networks were most probably expanded due to the compulsory two-day group assignment with peers from other education programs and to interaction with supervisors. Feedback, which is important for learning outcomes,<sup>81</sup> was provided by the supervisors, who also answered any questions from the IPL groups. The supervisors' responses corresponded with the students' responses with respect to the importance of aligning curricula with both legislation on child maltreatment<sup>29–32</sup> and with the parts of the United Nations Convention on the Rights of the Child that go beyond normal and healthy childhood experiences.<sup>3,12</sup> Although the sample size of supervisor responses is too small to draw any reliable conclusions, the correspondence is interesting, as most supervisors were not educated as health personnel.<sup>54</sup>

The IPL course is intended for first-year students. We cannot exclude the possibility that the uniprofessional education programs provided lectures dealing with child-related topics, including various forms of maltreatment, later on in the programs. However, we find this unlikely based on the documented failure in services and on previous research.<sup>45,46,48,50</sup> Moreover, the similarity between the responses from the second-year and first-year students indicates a lack of further uniprofessional training for second-year students.

This project does not involve patients or clients and is solely a face-to-face IPL pre-service training course that was provided on campus. Data from 32 institutions in Norway has shown that nursing and medical educations, in 2011, educated their students theoretically about IPC.<sup>82</sup> Although three of the four medical programs included in this study had integrated IPC into their clinical training, there was a gap in the nursing programs, where the introduction of IPC in clinical training was limited.<sup>82</sup> In the 2020/2021 academic year, all health and social care education programs in Norway were obliged to implement IPL in undergraduate studies, and several common learning outcomes were formulated.<sup>83</sup> In the future, all professional students at OsloMet will complete the IPL course once each year of their three-year bachelor education (total 4.5 ECTS).<sup>61</sup> However, the common learning outcomes pertaining to children, young people, and their families<sup>83</sup> make no explicit mention of various forms of child maltreatment. If local educators have the opportunity to choose whether or

not to include child maltreatment in curricula, important topics may be omitted.<sup>45,46</sup> Given that child maltreatment causes suffering to children and families and can have long-term health consequences,<sup>10,12,26,78,84</sup> education on maltreatment cannot be omitted from professional programs and must be mentioned explicitly in the curricula.

The need for professional training in child-related topics was highlighted during the COVID-19 pandemic restrictions and will continue to be relevant afterwards.<sup>49,85–87</sup> Some children experienced a higher burden due to the pandemic than other children, and with a high risk of violation of their rights.<sup>86</sup> It has been suggested that case detection and reporting has decreased as a consequence of pandemic measures,<sup>85</sup> leading to an underestimation of the prevalence of various forms of child maltreatment. The present data were collected pre- and post-course delivery in 2019 and 2020 (ie only a few weeks before the lockdown due to the COVID-19 pandemic in Norway). Although it may become more difficult to collect data after the lockdown, that challenge is beyond the scope of the present pre-pandemic study.

Children need safe, stable, nurturing environments that foster their healthy growth and development.<sup>14</sup> The curricula and the textbooks must be updated, and relevant pre-service training must be offered to students. Professionals have requested experience, counseling, knowledge, training, and guidelines to more efficiently address these issues.<sup>88</sup> The Norwegian government has published an action plan entitled *A Good Childhood Lasts a Lifetime* that includes a stronger focus on violence and child sexual abuse in professional education programs.<sup>89</sup> Without increased awareness and adequate training for future teachers and for health and social care workers, child maltreatment will continue to go undetected.<sup>35,49</sup>

## Limitations and Strengths

Admittedly, self-selection bias cannot be excluded; however, the diversity in our sample enhances the robustness of the findings. Though the relatively low response rate, which was in line with a declining response rate for surveys in general, might threaten the validity and generalizability of the results, a high response rate does not guarantee sample quality.<sup>90,91</sup> Using data from two consecutive course deliveries in 2019 and 2020 and from a large heterogeneous sample of students with different educational backgrounds should partially compensate for possible selection bias. The students' responses were stable between 2019 and 2020, implying stability along

the time axis. This is a major strength of the present study. Moreover, the anonymous data collection, the large heterogeneous sample size of students, and the varying educational backgrounds of the participants also strengthen the study. The fact that the teacher education students initially reported a more expansive knowledge base about children's rights and children in general lends credibility to our results. Although the number of responding supervisors was only 13 (response rate 39.1%), the supervisors response was similar to that of students. The similarity in the responses from the second-year and first-year students also indicates a lack of uniprofessional training for the second-year students in child-related topics, including various forms of child maltreatment. Although this study's cross-sectional design does not allow for the assessment of causality, these findings should be further explored in future studies. Future studies might also investigate the content in professional curricula in higher education, for example, a manifest content analysis.<sup>92</sup> Complementary content analysis results would further strengthen the conclusion of this study. To further prepare the different student groups ahead of IPL targeting children-related topics, future research could also be qualitative and might pursue an in-depth understanding of how educators may counteract the knowledge boundaries between different professions (such as differences in legislation and duties of confidentiality as well as between different definitions, cultures, curricula, procedures, and knowledge bases).<sup>51</sup> OsloMet is one of Norway's largest universities and is home to some of Norway's oldest, largest, and best-known programs of professional study. As professional curricula content is regulated by the Norwegian government, this study can be applied to other types of health care, social, and teachers educations in Norway. Moreover, since maltreatment of children is not an isolated Norwegian phenomenon, findings could be of interest to professional educators also outside Norway.

## Conclusion

Most of the students who participated in this study wanted to gain more insight into child-related topics, and few of them had previously learned about vulnerable/at-risk children in their uniprofessional education programs. After the IPL course, the health and social care students generally reported that they learned more than the teacher education and child welfare students but, notably, the teacher education and child welfare students gained increased insight into vulnerable/at-risk children. Age was of minor importance. This study reveals a gap

between the intention of the law and curricular content in health, social care, and teacher education programs. This study is applicable to other types of professional education in Norway. Further, this study's focus on all children in education could also facilitate modernization of health care, social, and teacher education curricula outside of Norway.

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## Disclosure

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