

Enhancing Knowledge and Skills in Autism Spectrum Disorders: Initial and Continuous Professional Development for Early Childhood Educators in Five European Countries

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1. Introduction

Early childhood education and care (ECEC) is increasingly acknowledged for its significant impact on a child's cognitive, language, educational and social development in both the short and long term (Melhuish et al., 2015). The child's ECEC experience largely depends on the knowledge, skills, and practices of early childhood educators¹, thus highly qualified staff is vital in the ECEC settings as this supports the use of appropriate pedagogical approaches, creating stimulating learning environments and providing good care and support (European Commission/EACEA/Eurydice, 2019). However, simply having a certain level of initial education is not enough to ensure high-quality ECEC.

According to the European Commission/EACEA/Eurydice (2019), one way to high-quality ECEC is through an integrated ECEC system (from birth to the start of primary education). They characterized four core quality dimensions, which include: (i) settings (unitary or separate); (ii) authorities (single or dual); (iii) highly qualified staff throughout the entire ECEC phase (minimum ISCED level 6); and (iv) education guidelines applying for all settings. This categorization places European countries on a continuum ranging from integrated to split systems (five groups in total), depending on the level of system and policy integration in their ECEC system.

¹ In this study, the terms "ECEC/early childhood/preschool/kindergarten/pre-primary teachers/staff/practitioners/educators", are used interchangeably.

The institutional context is of great importance for young children, particularly since they spend a significant amount of time in ECEC settings, making the settings a vital source of stability and attachment. As already mentioned, centre-based provision can be organized in two types of settings: unitary or separate. In separate systems children (usually at the age of 3) transition from one type of setting to another, with a focus on child-care for younger children and an orientation towards educational goals for older children. Moving from one type of setting to another also often means a change in group format/size, different staff, new rules and different types of activities. A period of adaptation is therefore essential for children. Unitary systems, on the other hand, integrate care and education for the whole age range, up until the start of primary education, with no transitions between settings (Bertram & Pascal, 2016). Although unitary settings are more balanced, most European countries have predominantly separate ECEC settings (European Commission/EACEA/Eurydice, 2019). The degree of integration suggests that children have quite different early learning experiences, as they face different ECEC environments across the EU. On the premise of this, Eraut (1994) also states that the significance of professional knowledge acquisition is not only determined by the type of knowledge but also by the context in which it is acquired and the educational ecosystem in which teachers have their professional development experiences. Furthermore, authors (Urban et al., 2011) claim that only a combination of initial and ongoing professional development allows practitioners to effectively carry out their professional responsibilities.

ECEC staff's continuing professional development (CPD) is being given increasing importance in countries throughout the world (Oberhuemer, 2013), as it is associated with many desirable outcomes. CPD promotes structural quality, high-quality provision (Slot et al., 2015) and pedagogical quality (Jensen & Rasmussen, 2016) as teachers acquire new skills and improve their educational practices (European Commission/EACEA/Eurydice, 2019; Oberhuemer et al., 2010; Urban et al., 2011). By promoting an individual's confidence and self-efficacy, CPD enhances reliance and supports the motivation to gain further professional knowledge (Fonsén & Ukkonen-Mikkola, 2019). In addition, professional development can create optimism and may help empower practitioners to fulfil their capacity to contribute to society (Fonsén & Ukkonen-Mikkola, 2019) and was also shown to have positive effects on children (i.e., socio-emotional skills; Jensen & Rasmussen, 2016).

Although continuous professional development (CPD) is available in most European countries, there is still a lack of consensus on its definition (Buyse et al., 2009). In this study, we adopted the definition from the Eurydice Report (European Commission/EACEA/Eurydice, 2019) which describes CPD as formal in-service training that enables ECEC staff to expand, develop and update their knowledge, skills and attitudes throughout their career and in some cases, may also lead to additional qualifications. It can include subject-based and pedagogical training and can be provided in the form of courses, seminars, peer observation, and support from practitioner networks. Studies show that the effectiveness of CPD programmes in ECEC settings can vary significantly and is reliant on how well they are integrated into the ECEC centre's practice and their focus on critical reflection regarding practitioners' practices (Eurofound, 2015; Mitchell & Cubey, 2003). The most effective CPD interventions are those that are locally tailored, as well as incorporate practitioners' aspirations, skills, knowledge, and understanding. These interventions should be embedded in a coherent pedagogical framework or curriculum that is grounded in research. Moreover, they should actively involve practitioners in improving educational practice and provide mentorship or coaching and should aim to increase awareness of practitioners' own thinking, actions, and influence, as well as support inclusive educational practices for diverse children and families (Mitchell & Cubey, 2003; Molinuevo & Ahrendt, 2015).

According to European Commission/EACEA/Eurydice (2019), mandatory CPD for core practitioners working with younger children is only required in a quarter of the education systems in the EU, and for core practitioners working with older children, it is less than half. For assistants, mandatory CPD is very rare, as there are only three European education systems where all assistants must undertake CPD. For countries in the EU where there is a minimum requirement for CPD for core practitioners, the duration of CPD can range from 5 hours (Montenegro; 24 hours over 5 years) to 90 hours (Romania) per year. Meanwhile, for assistants, the minimum time can range from 3 hours (France; 2 days over 5 years) to 40 hours (Luxembourg) per year. In other education systems in the EU, CPD is seen as a professional duty (without a minimum amount of time being specified) or is considered optional. While this does not imply a lack of CPD opportunities for ECEC staff, there may be fewer chances or fewer incentives to participate.

CPD programmes are organised in a variety of ways, covering a multitude of topics and delivered by a variety of (public or private) institutions. Many CPD programmes still use the frontal teaching format (i.e., seminars) for delivering generalised knowledge and information, while others focus on social, intellectual and practical involvement (Gregoriadis et al., 2018). There is also an increase in innovative approaches to CPD, which can potentially enhance teachers' learning (e.g., coaching, mentoring, counselling and supervision, collegiality and co-learning; e-learning or blended learning approaches; research-based initiatives, conferences, networking, excursions, reflexivity; Baumeister & Grieser, 2011; Urban et al., 2011; Vonta & Jager, 2017; Zaslow et al., 2010). Due to great differences in education systems, initial professional qualifications and specific roles of practitioners within early childhood services, the CPD providers also vary between countries. Frequently, primary providers of CPD include national institutes affiliated with the Ministry of Education, universities and higher education institutions, non-profit and private organizations, research centres, regional centres of local authorities, as well as freelance consultants and trainers (OECD, 2001; Vonta & Jager, 2017; Bove & Cescato, 2017; Oberhuemer & Schreyer, 2017). Furthermore, CPD content most often listed in studies generally focuses on theoretical and practical knowledge related to children's development, appropriate pedagogical approaches, and creating stimulating learning environments. This includes guidelines on providing quality care and support, examples of good practices, and alternative practices. However, the specific content of CPD programs can vary based on the ECEC system of the country, perceived needs, providers of CPD, and internal resources. For example, topics such as computer literacy and inclusive educational practices for diverse children and families may be included depending on the country (Bove & Cescato, 2017; European Commission/EACEA/Eurydice, 2019; Vonta & Jager, 2017).

On this note, it is necessary to mention that ECEC proves to be most beneficial for disadvantaged children, such as those belonging to low socio-economic and migrant backgrounds, as well as those with special needs or disabilities, including autism spectrum disorders (Drabble, 2013), which we will focus on in this article. Autism Spectrum Disorder (ASD) is characterized by impairment in social interaction, communication or the use of verbal and non-verbal language, and a stereotyped, restricted or repetitive pattern of behaviour, interests and activities (Fuentes et al., 2012). It is a complex lifelong disability that usually appears in childhood. ASD can

be detected and diagnosed accurately even before the age of two (Zwaigenbaum et al., 2015) and should be followed by early intervention (Pijl et al., 2018). ECEC professionals play a crucial role in supporting children with special needs (by interacting with them, observing their development, and providing individual support). As these children may come from diverse backgrounds and have varying abilities, ECEC staff may require special training to work with them. Such training is usually obtained through specific courses included in their initial education or CPD programs. Initial education in most European countries incorporates specific training to equip ECEC staff to work with children with additional needs. However, while some countries require all ECEC staff to undergo this training (0-6 years; e.g., Slovenia), others mandate it only for those preparing to work with older children (3-6 years; e.g., Slovakia). Similarly, in 16 educational systems, CPD programmes specifically designed for staff dealing with disadvantaged children are recommended but more often for those working with older children. In some countries, specialists such as physiologists may assist preschool teachers (European Commission/EACEA/Eurydice/Eurostat, 2014).

The present study contributes to the existing research by examining the continuous professional development of preschool teachers in five EU countries with varying levels of system and policy integration, ranging from integrated (Slovenia) to split (Italy). Additionally, it expands on the understanding of the competencies attained during initial training and in CPD concerning special and inclusive education, specifically in the area of working with children diagnosed with autism spectrum disorders.

2. Methodology

2.1 Data sources

Our study compares five countries included in the NEMO project: Slovenia, Sweden, Spain, Cyprus, and Italy. This enabled us to provide detailed descriptions and additional elaborations through the partnership expertise, as well as ease potential language barriers. The countries have different ECEC settings (separate and unitary ECEC systems), ensuring a comprehensive comparison, as outlined in Table 5. The study focused on collecting data on mainstream public and private ECEC (only centre/school-based) provisions within the regulatory framework during the 2019/2020 school year, relying on official documents issued and recognized by central

or top-level authorities. The study also attempted to provide representative information on regional regulations in countries where regions or communities have competence in most ECEC areas (i.e., for Spain: Comunitat València and Castilla y León). In cases where certain ECEC areas were not covered by central or top-level regulations or recommendations, documented information on the most common practices was provided.

2.2 Instrument

We prepared the questionnaire (Vidmar et al., 2020) specifically designed to support the aims of the project. The NEMO questionnaire consisted of an introduction, explanatory notes for the partners, and questions in an open-answer format. The themes addressed in the questionnaire mainly focused on the curricula for the ECEC staff. We inquired about the main ECEC setting(s), staff categories, required education level and the curricula in the core staff initial training. Lastly, questions concerned the continuing professional development, specifically, we asked them about the: (i) status of CPD for the ECEC staff; (ii) types of CPD available; (iii) CPD provider/s; and (iv) specific training for children with special education needs (i.e., ASD).

2.3 Procedure

The NEMO questionnaire was distributed to one partner representative per country, with a four-month deadline. The questionnaire was sent in Word format via email to allow for unrestricted answers without the limitations imposed by character limits common in online surveys. Additional clarifications were provided via email as needed. Answers were analysed by two researchers from Slovenia and Italy.

3. Results

We present the results in two sections. First, we present the background information from the participating countries. Second, we provide data about CPD in the selected countries, with an additional focus on ASD-focused CPD. The great majority of the data provided presents the answers from experts completing the NEMO questionnaire, while certain additions and explanatory notes are drawn from the Eurydice report (European Commission/EACEA/Eurydice, 2019).

3.1 Background information

In this section, we present the level of system and policy integration in ECEC in the selected countries, the initial education requirements for the core staff (preschool teachers) included in ECEC, and more specifically, the knowledge about special and inclusive education that the core staff gained in their initial training.

3.1.1 Participating countries' levels of system and policy integration in ECEC

Our study includes countries from across the whole quality continuum (covering the five possible levels), with one country per category/level (see Table 5). Our analysis encompasses a range of settings, including a unitary setting (Slovenia), a unitary setting with a pre-primary class (Sweden), and two countries with a combination of separate and unitary settings (Spain, Italy – unitary setting not yet fully implemented). Cyprus has a separate setting but the groups are divided by the responsible authority rather than by age. In almost all the selected countries, ECEC systems have a staff category of assistants with qualifications ranging from ISCED 3 to ISCED 5. However, higher qualifications are required for core practitioners – most core practitioners must obtain a BA degree in preschool education (ISCED 6). In Italy, individuals working with older children must have an ISCED 7 education. Slovenia, Cyprus, and Italy require core staff to have completed ISCED level 6, while in Spain this is only required for staff working with older children, and in Sweden, there are no legal requirements (instead this is regulated at the setting level – one staff member in the setting is required to have ISCED 6 in preschool education). Three countries (Slovenia, Sweden, and Spain) have established educational guidelines for the entire preschool phase, while in the EU, it is more common for educational guidelines to be implemented in settings that serve children above three years old rather than those below three years old (as seen in Cyprus and Italy).

Table 5: Participating countries' level of system and policy integration

Country	Slovenia	Sweden	Spain	Cyprus	Italy
Degree of system and policy integration	Integrated	Somewhat integrated	Mid-way	Somewhat split	Somewhat split since 2019/2020 (previously Split)
Setting structure	Unitary	Unitary	Unitary + Separate	Separate	Separate (Unitary – not yet fully implemented) *
Authorities Level & jurisdiction	Single: Ministry, education	Single: Ministry, education	< 3 years: Administrations of the Autonomous Communities, education > 3 years: Ministry + Administrations of the Autonomous Communities, education	< 4;8 years: Ministry, social affairs > 3 years: Ministry, education	< 3 years: Regional administrations, education or social affairs > 3 years: Ministry, education
Staff qualifications requirements	ISCED 6	No minimum requirements (one teacher per setting with ISCED 6)	< 3 years: ISCED 5 > 3 years: ISCED 6	ISCED 6	< 3 years: ISCED 6 in laws from 2019/2020 (previously unregulated) > 3 years: ISCED 7
Education guidelines	1 – 6 years	1 – 6 years	0 – 6 years	> 3 years	> 3 years

Notes: ISCED- International Standard Classification of Education; * Italy introduced “integrated ECEC 0–6” with law no. 107 (Decreto Legislativo n. 107, 2015), however, ECEC services in Italy currently remain for the most part represented by a split system; the table was prepared based on the expert responses to the NEMO questionnaire and data from European Commission/EACEA/Eurydice (2019).

3.1.2. Initial training of core practitioners in the topics of special and inclusive education

The initial education requirements (mainly ISCED 6; ISCED 5 for the Advanced technicians in preschool education in Spain and ISCED 7 for Kindergarten teachers in Italy), the titles of the training programmes and subjects covering Special and inclusive education in the initial education for the core staff in the ECEC in the selected countries can be seen in Table 6.

Table 6: Subjects addressing Special and inclusive education in the curriculum for the initial education for the core staff in centre-based settings in the selected countries

Country	Core practitioner & Required qualification	Title of the programme	Subject covering Special and inclusive education
Slovenia	Vzgojiteljica (Preschool teacher), ISCED 6	Preschool education	Special pedagogy
Sweden	Förskollärare (Preschool teacher), ISCED 6	Preschool teacher training programme	Special Education E: The aesthetic expression of children's culture; Specialization in special education - Preschool Teacher Program
Spain	Técnico Superior en Educación Infantil (Advanced technician in preschool education), ISCED 5	Training cycle: High degree in Child Education	Intervention with families and care for minors at social risk
	Grado en Maestro de Educación Infantil (School teacher of pre-primary education), ISCED 6	B.A. in Education, speciality in Child Education	Curriculum and inclusive early childhood education; Developmental disorders; Early attention; Educational responses to specific needs; Innovation in the inclusive school; Language and communication disorders; Language and communication in the bilingual classroom; Prevention of learning difficulties
Cyprus	Nipiagogos (Kindergarten teacher), ISCED 6	Early Childhood Education/Pre-primary school teaching / Pre-Primary Education	Special and Inclusive Education E: Intercultural Education; Differentiation in Inclusive Education
Italy	Educatore Professionale (Nursery educator), ISCED 6	Educational Sciences	Laboratory in the field of teaching and special education E: Education of migration; Intercultural education; Special education; Intercultural education; Didactic disciplines for the integration of the disabled- Hygiene; Ecological approach on inclusive education and social inclusion
	Maestra (Kindergarten teacher), ISCED 7	Primary Education Sciences	Special educational workshop for inclusion; Special education for inclusion; Psychology of disability and integration; Laboratory of psychology of disability and integration; Intercultural education; Workshop of intercultural education; Design of educational paths; Teachings for the reception of disabled students; Hygiene; Developmental psychopathology

Notes: Core practitioners are presented in the national language, followed by an English translation; E-elective subject; The curricula from the following institutions were analysed: Slovenia – University of Maribor, Sweden – Stockholm University, Spain - Ministry of Education / White Book, Cyprus – European University Cyprus, Italy - University of Bologna; the table was prepared based on the expert responses to the NEMO questionnaire

The comparison of the main components of the initial programs for core practitioners in the chosen countries indicates that the curricula of pre-primary teacher training programs are quite similar, covering comparable topics, and generally including practical training (as discussed further in Vidmar & Veldin, 2022). Although some topics, such as Special and inclusive education (see Table 6), are covered in all study programs, there are significant differences in how they are approached. The differences can be observed in the number of subjects that are included in the topic (from 1 to 9), the number of them that are elective (0 to 6), and how many are compulsory (1 to 9). The majority of the programmes have only one compulsory subject addressing Special and inclusive education (5 of our 7). The exceptions are the programme for School teachers of pre-primary education in Spain (8 compulsory subjects) and the programme for Kindergarten teachers in Italy (9 compulsory subjects). Furthermore, there are many initial training programmes, that do not include any additional elective courses on the topic (a programme from Slovenia, both programmes from Spain, and the programme for Kindergarten teachers from Italy). Despite addressing special and inclusive education, none of the selected countries explicitly mention ASD in their initial education for core staff curricula.

3.2 Continuous professional development (CPD) in five EU countries

In this section, we provide a comparison of the main characteristics of the CPD in each country. We conclude the results with specifics about CPD related to Special educational needs (SEN) with a focus on autism spectrum disorders (ASD).

3.2.1 Main characteristics of continuing professional development (CPD) for ECEC staff in selected countries

The main characteristic of CPD (i.e., the status of CPD, the minimum number of hours per year, different types of training, management of CPD and main CPD providers) in the selected countries are presented in Table 7. As it is evident from the information provided, in Slovenia, and partially in Cyprus and Italy, CPD is a mandatory requirement. The Ministries in Cyprus and Italy had made CPD mandatory only for teachers in kindergartens for children aged 3-6 years. In Sweden, although CPD is not formally required, it is often expected as part of professional duties. In Spain, CPD is not compulsory, but it is necessary to earn an additional salary. Also, pre-

school teachers who hold a Bachelor's degree must participate in job-specific training during their first year of work. In Slovenia, the decision to choose a CPD program is generally left to the individual preschool teacher. In Sweden, it is the employer's responsibility to provide CPD, and employees are required to attend employer-approved courses. In Italy, teachers can choose courses freely as long as they are offered by accredited bodies.

The minimum number of hours of CPD per year required for preschool teachers varies significantly between countries. Slovenia requires 40 hours (5 days) per year, while Sweden does not have any legal requirements. Spain has specific CPD during the first year, followed by a minimum of 100 hours every six years (approx. 17 hours per year). In Cyprus, educators must undergo CPD with a minimum of 10 hours per year (in systems with older children). Italy has different requirements for different systems: 20 hours for educators and 40 hours for pedagogical coordinators in the 0-3 and 0-6 integrated systems, and 50 hours for each permanent preschool teacher in the 3-6 system.

Public institutions such as universities and institutes are the primary providers of CPD in all countries, with private training providers being less common. There are several different types of professional development opportunities available to preschool teachers in the participating countries; ranging from training programs, conferences, and workshops to online courses, collegial learning, educational experimentation, etc. (see more in Table 7). The content, duration, and methods of CPD vary.

Table 7: The main characteristic of CPD for ECEC staff in the selected countries

Country	Slovenia	Sweden	Spain	Cyprus	Italy
Status	Mandatory*	Professional duty	Optional (Necessary for promotion) **	Mandatory (3-6 years)	Mandatory (3-6 years)
Minimum number of hours per year	40 hours per year/120 hours in three years	The number of hours varies depending on the course the teacher decides to take	Specific CPD during the 1st year directly in the workplace + divided over 6 years with a minimum of 100 hours every six years.	10 hours per year	20 hours for Educators and 40 hours for Pedagogical Coordinators (0-3 system and the 0-6 integrated) 50 hours for each permanent preschool teacher

Country	Slovenia	Sweden	Spain	Cyprus	Italy
Types of training	Professional training programs, thematic conferences, extraordinary programs, projects	Online courses, webinars, collegial learning through study circles, conferences	Courses, seminars, working groups, training projects, conferences	Workshops, e-learning courses, intervention programs	In-person and distance learning, educational experimentation, personal and collegial study
Management	Selected and approved by the Ministry of Education, Science and Sport	the National Education Agency and the Swedish School Inspectorate	The Regional Government, the Spanish Ministry of Education, and the University	The Ministry of Education and Culture	3-6 system at a national level (The Ministry of Education); 0-3 and 0-6 integrated systems at the regional level
Providers	Public universities, schools, kindergartens, Educational Research Institute, National Institute of Education and Institute for the Deaf and Hard of Hearing, private companies, individuals	University and government agencies (National Education Agency, School Authority for Special Education), Associations and Cooperatives (Professional Union of Teachers)	Training Centres, Teachers and Resource Centres	European University of Cyprus, Nicosia, Frederick, the Cyprus Pedagogical Institute	SOFIA platform (valid for teachers working with 3-10-year-olds), Associations, private training providers

Notes: *Also applies for assistants; ** Applies for most of the Autonomous Communities; the table was prepared based on the expert responses to the NEMO questionnaire.

The majority of CPD is managed at the national level (i.e., Ministries for Education), while regional levels of governance take over parts of CPD. For example, Spain delivers CPD courses through Training Centres that are funded on a local and national level (i.e., the Regional Government, the Spanish Ministry of Education, and the University). In Italy, CPD for the 0-3 years and 0-6 integrated system is managed at the regional level, while the Ministry of Education sets guidelines for the 3-6 years system CPD at the national level. The Board of Teachers (Collegio dei Docenti) creates specific training proposals within the Three-Year Plan of the Educational Offer. Similarly, in Slovenia, the Ministry of Education, Science and Sport (MESS) determines the priority themes and fields of CPD each year and issues a public call for proposals and co-financing of CPD. Following the call, various private and public institutions propose and develop CPD programs that are then approved by the MESS. Moreover, in Sweden, CPD courses can be tailored to meet specific municipal needs and facilitated through the use of qualified educational staff and available resources.

3.2.2. Specific CPD training related to ASD

In various countries, educators in ECEC are supported by official documents and guidelines for working with SEN children, or more specifically, ASD. In Slovenia, educators in ECEC are guided by the Kindergarten Curriculum (1999) and additional guidelines in the Instructions regarding the Kindergarten Curriculum with adapted implementation and additional professional support for SEN children (2003) and associated Supplement for working with ASD children (2016). In Sweden, inclusive education teaching materials and courses for kindergarten are provided by the School Authority for Special Education. In Spain, the selected ASD interventions are supported by official documents such as the Child Education Teaching Specialties, Child Education staff in private schools (both national documents), and Child Education staff in the first cycle (regional document). In Italy, the national management for ASD is guided by the Guidelines for autism proposed in Law 134/2015 (Ddl Autismo; GU Serie Generale n.199, 2015, which focuses on inclusion, early diagnosis, and individualized treatment based on scientific evidence.

Examples of training programmes/courses and ASD-specific CPD providers in the selected countries are presented in Table 8. In Slovenia, various training programs are available for working with children with special educational needs, including some that specifically focus on ASD (see Table 8). In Sweden, there is no course specifically focused on teaching and caring for children with ASD in preschool, however, the SPSM (the National Agency for Special Needs Education and Schools) offers support and consultations for the development of knowledge and practice in special needs issues, while new stricter requirements for competencies related to neuropsychiatric difficulties/conditions in schools and preschools are expected to be in place from July 2021 (Regeringskansliet, 2020). In Spain, CPD training focused on ASD is carried out with interventions based on the Denver Model and other early intervention approaches. In Cyprus, CPD related to ASD comprises master's and postgraduate courses at universities, seminars, and workshops that may focus on ASD-specific approaches like ABA or more general topics related to special and inclusive education with ASD references. Finally, in Italy, they have a training course for teachers specializing in support, special approaches (e.g., TEACCH) and courses which are limited to specific regions. Same as the general CPD providers (see Table 7), ASD-specific providers also consist of both public institutions (e.g. Universities, Teacher training centres) as well as private entities (e.g.,

NGOs, representatives of particular approaches). Furthermore, the significance of EU-funded projects in providing training on ASD is also highlighted by NEMO experts.

Table 8: Training programs and ASD-specific CPD providers in the selected countries

Country	Examples of Training programs/courses	Examples of ASD-specific CPD providers
Slovenia	Catalogue of CPD in education for the school year 2019/2020: • Educational Strategies and Challenging Learning Environment for Children and Adolescents with ASD; • Child and Adolescent with ASD, Structured Learning as a Method of Success in Teaching Children with ASD; • Working with Pre-schoolers with ASD.	Universities, National Education Institute Slovenia; Kindergartens, NGOs (e.g., Zveza za avtizem Slovenije, Eng. Autism Association of Slovenia), Institute for the deaf and hearing-impaired in Ljubljana; EU and other funded project activities (e.g. ETTECEC)
Sweden	No course specifically focused on teaching and caring for children with ASD in preschool.	Special Education School Authority, Universities, National Agency for Special Needs Education and Schools, NGOs, interest organizations, training centres (Attention Utbildning AB), organizations belonging to the health system (Habilitering och hälsa, Eng. Habilitation & Health), The Autism and Asperger Association
Spain	• Interventions based on Early Intervention in ASD (Denver Model, the IMPACT project); • Structured Teaching in ASD; • Bullying Prevention in ASD; • Digital Supports for Students with ASD; • Alternative and Augmentative Communication Systems in ASD.	Teacher training centres from the Department of Education of the regional government, private organisations (private training centres, family societies and private foundations)
Cyprus	• Master and postgraduate university programs (elective courses); • Seminars and workshops (short, one-day or longer, up to 5 days) specific to ASD (e.g., special approaches such as ABA, TEACCH, PECS) and more generally on special and inclusive education that may include references to ASD.	Ministry of Education, Culture, Sports and Youth, the Cyprus Pedagogical Institute, Private companies (e.g., Autism Famagusta Support), representatives of particular approaches (e.g., Pyramid Educational Consultants representing PECS), NGOs (e.g., parent associations), EU and other funded project activities (ESIPP Project)

Country	Examples of Training programs/courses	Examples of ASD-specific CPD providers
Italy	A course for teachers specializing in support (e.g., Child Neuropsychiatry, Integrated Models of Psychoeducational Interventions for Intellectual Disabilities and Generalized Developmental Disorders, Pedagogy and Special Education of Intellectual Disabilities and Generalized Developmental Disorders); Special methods: TEACCH, ABA, LEAP, UCLA, Denver Model; Courses limited to a specific region (0-6 years old) (e.g., PEP-3, Profilo Psicoeducativo-Terza Edizione, Eng. Psychoeducational Profile-Third Edition).	Associations and Organizations (e.g., Anffas Associazione Nazionale, Training and Courses Dalla Luna Association - Professionals for Autism)

Notes: The table was prepared based on the expert responses to the NEMO questionnaire.

4. Discussion

Quality ECEC plays a vital role in a child's development and success. However, it takes more than just an excellent initial education of teachers to provide quality ECEC. Concise management, set educational guidelines, and type of settings also matter, as these differences result in different early learning experiences for children across the EU. Even more, teachers need to have opportunities for professional development throughout their careers, as they cannot rely solely on the knowledge gained in their initial studies due to new challenges, needs and findings constantly emerging in their field. In the current study, we examined the continuing professional development (CPD) of preschool teachers in five EU countries (Slovenia, Cyprus, Sweden, Spain, and Italy). We specifically focused on how preschool teachers gain appropriate knowledge to work with disadvantaged children, such as those on the autism spectrum, as these children benefit the most from quality early childhood education and care.

Our study covers five EU countries with varying degrees of the system and policy integration continuum (see Table 5) (Different settings: unitary/separate; Required qualifications for core practitioners: ranging from ISCED 5 to 7/no legal requirements in Sweden; Established educational guidelines: for the entire preschool phase/for children above three years old; Management responsibility: single/dual). Research has demonstrated that unitary ECEC systems that cover the entire preschool age group (0-6) are more effective than split systems; in terms of the service organization and quality assurance, as split systems are hindered by complex governance processes caused by fragmented administrative responsibilities (European

Commission/EACEA/Eurydice, 2019). We stress this because of the impact of different systems both on children and on educators themselves. In separate systems, children have to transition from one setting to another, mainly receive only care in the early years, with educational goals only involved in the latter years (a division of responsible authority), often have less qualified educators when entering ECEEC, who also do not have educational guidelines for this phase. The presence of an inadequately skilled workforce can lead to discrepancies in the quality of early learning experiences. Furthermore, since ASD can be diagnosed with accuracy before the age of two, it is important to investigate how educators (especially in the early phase) are trained to deal with it.

Although the core staff in selected countries require different initial training (see specifics in Table 6), the curricula for pre-primary teacher training programs are quite similar. There are however differences in how they approach the topic of Special and inclusive education (the number of subjects, how the subjects are classified, and the option of elective courses). The overarching themes covered in the subjects are Special Education and Pedagogy, Differentiation and Inclusive Education, Disabilities and Developmental Disorders, and Intercultural Education. In educational settings, children with ASD are usually addressed under the wider concept of special needs, which is also the case in our study. As reported by the European Commission/EACEA/Eurydice/Eurostat (2014) the initial education in most European countries incorporates specific training to equip ECEC staff to work with children with additional needs, which is also true in our case. Furthermore, they claim the necessity of this specific training seems to be more prevalent for staff working with older children, which is not the case in our study, with all core staff participating in at least one course on the topic during their studies. Yet, despite all initial programmes addressing special and inclusive education, none of the selected countries explicitly mention ASD in their initial education for core staff curricula.

A comparison of the main characteristics of the CPD (see Table 7) shows that some countries have national requirements both for the profession and for the initial professional preparation. In contrast, others have formal competence requirements for professional preparation, but not for the profession. In Cyprus, Slovenia, and partially in Italy (3-6 system), CPD is a mandatory requirement, while in Sweden, although not formally required (as is the case for the initial qualifications), it is often expected as part of professional duties. In Spain, CPD is not compulsory, but neces-

sary to earn an additional salary. Similarly, in the EU, fewer than half of the countries mandate CPD and even fewer require it for staff working with younger children (European Commission/EACEA/Eurydice, 2019). CPD has the potential to yield supplementary qualifications in certain countries (ibid.), such as Italy. The required minimum hours of CPD per year for preschool teachers vary widely across countries, from no legal requirement in Sweden to 10 in Cyprus and 50 hours in Italy, which roughly covers the average range in the EU (min: 5 hours, max: 90 hours; European Commission/EACEA/Eurydice, 2019). Likewise, it is very rare (only three countries) for assistants to be subjected to the same rules, as is the case in Slovenia, where assistants working in ECEC have the same hourly obligation as preschool teachers due to the Collective agreement for education in the Republic of Slovenia.

Similar to the duality seen in authorities responsible for ECEC (see Table 5), this is also the case for CPD with some being approved at the national level (i.e., Ministry of Education) and others by regional governments (see Table 7), which is also reported elsewhere (e.g., OECD, 2001; Vonta & Jager, 2017; Bove & Cescato, 2017; Oberhuemer & Schreyer, 2017). The decision to choose a CPD program is generally left to the individual preschool teacher, with various private and public institutions proposing, developing and implementing CPD programs. The types of training offered vary by country, but they include professional training programs, online courses, webinars, collegial learning through study circles, conferences, training projects in institutions and many others (same or similar as stated by European Commission/EACEA/Eurydice, 2019). Although the majority of the CPD still seems to be using frontal teaching format (e.g., seminars) some seem to follow more innovative approaches (Baumeister & Grieser, 2011; Urban et al., 2011; Vonta & Jager, 2017; Zaslow et al., 2010), such as e-learning, co-learning, research-based initiatives. CPD courses can be tailored to meet specific municipal needs and can range from short-term courses to comprehensive preschool teachers' training programs. The CPD in selected countries appears to be aligned with the research on effective CPD (e.g., Mitchell & Cubey, 2003; Molinuevo & Ahrendt, 2015); by tailoring CPD to local needs, offering educators the opportunity to select relevant courses, providing mentoring or coaching, etc. The content of CPD is diverse (and may include training on working with children with special educational needs, including those with autism spectrum disorders).

In various countries, there are official documents and guidelines to support educators in ECEC who work with children with SEN, including ASD. Both public and private entities are involved in providing training, with EU-funded projects also being recognized as significant. As can be seen in Table 8, countries take different approaches to addressing ASD. Various training programs are available for working with children with special educational needs (e.g., courses at Universities) and also some that specifically focus on ASD (e.g., ASD-specific approaches such as ABA). In Italy for example, some courses are limited to specific regions. Interestingly, Sweden is an exception, as they did not report any official CPD course addressing this topic for ECEC teachers; however, new stricter requirements for competencies related to neuropsychiatric difficulties/conditions in schools and preschools are expected to be in place from July 2021 (Regeringskansliet, 2020). Nevertheless, the majority of content related specifically to ASD seems to be delivered via CPD.

The study shows differences in how selected countries approach special and inclusive education. One of the main conclusions of our study is that despite the importance of quality early childhood education and care for children with additional needs, including ASD, none of the selected countries explicitly mention ASD in their initial education for core staff curricula. This suggests that there may be a gap in the training of ECEC teachers to effectively work with children on the autism spectrum, particularly in the early stages of development when early intervention is crucial. The study, therefore, highlights the importance of continuing professional development (CPD) for preschool teachers to gain appropriate knowledge and skills to work with disadvantaged children. As can be seen, ECEC in our study places a greater emphasis on CPD for core practitioners working with older children, compared to assistants and staff working with younger children. Additionally, the extent to which CPD is mandated and regulated varies widely across the five EU countries examined in the study. CPD is not compulsory in all countries, and the required minimum hours of CPD per year for preschool teachers vary widely across countries. The decision of choosing a CPD program is generally left to the individual preschool teacher, with various private and public institutions proposing, developing, and implementing CPD programs. Overall, the study emphasizes the need for consistent and high-quality training and continuing professional development opportunities for ECEC teachers to effectively support the development and learning of all children, including those with ASD.

Our study has some limitations: it only included five EU countries, and exploring »best practices« in more countries could provide a more comprehensive understanding of the topic. While policy changes are underway to improve staff qualifications and early years' provision, these changes have not yet been fully implemented in practice (as seen in Italy and Sweden). However, better-trained educators can improve the early detection of ASD and pave the way for new educational methods and tools that could enhance the abilities of children with ASD. Combining early observation with educational interventions from 0-6 years can also highlight the need for a unified system and policies for children in this age range.

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