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Keeping Early Social-Emotional Learning Developmental: The Development, Implementation, and Preliminary Evaluation of a Preventive Intervention Program for Early Childhood Education and Care

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Abstract
Early childhood forms the fundamental basis for developing various social-emotional skills and represents a unique opportunity to lay the foundation for healthy development. Insensitive learning environments in early childhood may lead to social-emotional difficulties, increasing the risk of developing severe behavioral problems. However, professional development (PD) opportunities that support early childhood education professionals' (ECEPs) knowledge and skills to promote young children's social and emotional development are scarce. In Finland, notably, the increasing need to enhance competence through further training has been widely recognized. Therefore, this study introduced the POMPedaSens program in early childhood education and care (ECEC) in Finland. The program aims to promote children's social-emotional learning (SEL) by supporting ECEPs' engagement and emotional availability. As a universal intervention program, POMPedaSens includes all children in ECEC regardless of risk factors. The present study included 200 children (M_{AGE} = 72.27 months, SD = 5.48; 53% girls) and 62 ECEPs (M_{AGE} = 43.82 years, SD = 11.71; 95% female). ECEPs received the intervention training to implement the curriculum in their everyday daycare routine. The present study describes the program design, implementation, and results from a preliminary evaluation of the social validity of the POMPedaSens program, measured by the ECEPs' satisfaction with the program. The results of the social validity evaluation suggested high teachers' satisfaction and improved children's SEL. These findings prove that the program may effectively build ECEPs' capacity to promote children's SEL.

Keywords
Universal preventive intervention program, early childhood, professional development, social-emotional learning

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The development and implementation of early, preventive intervention programs are crucial for supporting children's social-emotional development, preventing the onset of behavior problems, and reducing the risk of long-term mental health disorders. However, there are still not many comparable European universal early childhood preventive intervention programs that unpack the active ingredients of successful social-emotional learning (SEL) approaches (for reviews, see Jensen & Rasmussen, 2019; Koivula & Huttunen, 2018; Moazami-Goodarzi et al., 2021; Scheithauer et al., 2022; Von Klitzing et al., 2011). Compared to targeted preventive interventions, the advantage of universal preventive interventions is that they target all children, independently of their risk status, and thus avoid stigma (Dodge, 2020). In contrast, targeted preventive interventions select children for intervention based on screening of demographic or behavioral characteristics, such as those at high risk of developing behavioral disorders (Dodge, 2020). Further, professional development (PD) opportunities that support teachers' knowledge and skills to promote young children's social and emotional development are scarce in Europe (Jensen et al., 2017; Jensen et al., 2013; Koivula et al., 2020; Moazami-Goodarzi et al., 2021; Scheithauer et al., 2022; for a review, also see Jensen & Rasmussen, 2019), excluding interventions in the United States. An increasingly pressing need also exists for early PD interventions in Nordic countries (Jensen & Rasmussen, 2019; Määttä et al., 2017). In Finland, notably, the increasing need to enhance early childhood education professionals' (ECEPs) competence through further training has been widely recognized (Fonsén & Ukkonen-Mikkola, 2019). Consequently, the main aim of the present study is to introduce a recently developed universal preventive intervention program, i.e., POMPedasens, in ECEC settings in Finland. Further, considering social validity, i.e., the social significance of behavioral goals, the appropriateness of the intervention procedures, and the effectiveness (Wolf, 1978), is essential when implementing preventive intervention programs in natural settings. ECEPs play a crucial role in implementing SEL interventions, and their feedback is valuable for determining social validity. The current literature demonstrates a notable research gap concerning assessment and reports of social validity within the realm of SEL interventions (Ferguson & Cihon, 2018). Subsequently, the second aim of this study is to conduct a preliminary evaluation of the social validity of the POMPedaSens program derived from ECEPs' feedback on the significance of behavioral goals, appropriateness of the procedures, and behavior changes.

Social-Emotional Skills in Early Childhood

Early childhood forms the fundamental basis for developing various social-emotional skills and represents a unique opportunity to lay the foundation for healthy development. Social-emotional competence refers to an individual's ability to meet their own needs while maintaining positive relationships with others (i.e., social competence); to understand their own emotions and those of others and act on this awareness, to negotiate interpersonal exchanges and effectively regulate emotional experiences (i.e., emotional competence) (Denham et al., 2009). Safe, stable, and nurturing interactions and environments shape a child's development and provide a wide range of possibilities for developing and practicing social-emotional competencies (Silkenbeumer et al., 2016). Children who develop social-emotional competency have the skills and knowledge needed to regulate their own emotions, cope with challenges, build secure and stable social relationships with peers and adults, successfully adjust to early education settings, and solve problems (e.g., Housman et al., 2018; Jones et al., 2015). For example, Jones et al. (2015) found that the early acquisition of social-emotional skills was linked to academic outcomes, mental health, criminal activity, substance abuse, and employment 13 to19 years later, suggesting that children with higher social-emotional skills are more likely to become well-adjusted adults.

The development of one's social-emotional competencies is compromised if their environment does not consider their unique qualities (Belsky & Pluess, 2009). Insensitive learning environments in early childhood may lead to social and emotional difficulties, which then may increase the risk of developing serious forms of behavioral problems such as externalizing problems (e.g., aggressiveness, conduct problems, and antisocial behavior) and internalizing problems (e.g., as loneliness, depression, and anxiety) (Roeser et al., 1998). In the short term, imbalanced social-emotional skills have behavioral consequences such as the inability to focus and maintain attention, social withdrawal, conduct problems, and aggressiveness (for a review, see Herrenkohl et al., 2010). In the long term, children with social-emotional imbalance may be at high risk

for compromised mental health, depression, delinquency, antisocial behavior, substance abuse, poor achievement in school, school dropout, and poor physical health (for a review, see Herrenkohl et al., 2010; Jones et al., 2015). Another risk factor related to deficits in social-emotional skills is early childhood peer relationship difficulties such as bullying. Childhood bullying victimization is a high-risk factor for well-being and developing poor outcomes throughout life, including mental, physical, and socioeconomic outcomes (for reviews, see Arseneault, 2018; Hess & Scheithauer, 2015). Of 6,910 children (3–6-year-olds) in Finnish ECEC centers, 12.6% were reported (by parents, teachers, and the child interviews) as being involved in bullying – either as a victim, bully, or bully-victim – (Kirves & Sajaniemi 2012). Even though it has been suggested that bullying behavior begins at an early age, few studies address the prevalence and forms of bullying in early childhood (for a review, see Repo & Repo, 2016).

During early development, the brain changes significantly and forms neural connections that shape a child's social and emotional abilities (Schneider et al., 2022). Thus, the brain-body connection, i.e., the intricate relationship and communication between the brain and the rest of the body, plays a fundamental role in developing and regulating early social and emotional skills (Schneider et al., 2022). It involves the complex network of signals, feedback loops, and interactions between the central nervous system (including the brain and spinal cord) and the peripheral nervous system (including nerves throughout the body). Understanding the brain-body connections helps educators and caregivers create environments and experiences that optimize brain development and support the wiring of neural pathways related to social and emotional skills.

SEL is the process through which children learn and apply prosocial behaviors and interpersonal problem-solving skills and strategies for coping effectively with peer challenges (for a review, see Smith & Low, 2013). Research shows that safe, responsive, and nurturing environments support early childhood SEL and development (Housman et al., 2018; Jones et al., 2015; Silkenbeumer et al., 2016). While insensitive learning environments can lead to early social and emotional difficulties and severe forms of behavioral problems (for a review, see Herrenkohl et al., 2010; Jones et al., 2015). Further, ECEPs' positive interactions, responsiveness, sensitivity, and emotional and instructional support stimulate SEL and reduce behavior problems in early childhood (Peisner-Feinberg et al., 2001; see Jeon et al., 2019). According to the prosocial classroom model (Jennings & Greenberg, 2009), ECEPs' PD is fundamental to providing high-quality services. This model indicates that ECEPs with higher PD can form a strong and supportive relationship with children, manage their demanding behaviors, and respond to them with warmth and sensitivity, creating positive classroom settings and promoting children's social, emotional, and cognitive development (Jennings & Greenberg, 2009; for a review see Brunsek et al., 2020).

Theoretical Background, Contents, and Training Approach of the POMPedaSens Program

The POMPedaSens program (launched at the University of Helsinki and the University of Eastern Finland in 2019) is a universal preventive intervention program designed and applied for the first time in Finland, which can be applied in every ECEC setting. The program was developed to support ECEPs' PD, engagement and emotional availability, and overall quality of teacher-child interactions at the group level, promoting children's (5–6-year-olds) self-regulation, peer relationships, and group involvement and reducing the risk for cumulating behavioral problems and bullying. The goal was to serve the growing need for creating a shared understanding of brain-body connections, the importance of a sense of belonging, and intentionality. By nurturing positive teacher-child relationships, providing opportunities for emotional expression, and creating safe and stimulating learning environments, the program intends to optimize the brain-body connection to foster early SEL.

The principles of POMPedaSens arise from the theories of positive psychology and developmental neurosciences, combined with pedagogical knowledge of high-quality interaction in the context of ECEC. The program is grounded on Seligman's (2011) PERMA model of well-being, suggesting that flourishing arises from five pillars: Positive emotion (happiness, hope, joy, and satisfaction), Engagement (focus, interest, or absorption in an activity), positive Relationships (closeness and connection with family, friends), a sense of Meaning (membership in something larger than oneself), and Accomplishment (high performance and achievement, e.g., academics, athletics, or career, and perceived competence). Following the PERMA model, the POMPedaSens

program aims to increase well-being and flourishing at the group level in ECEC settings.

Further, based on Interpersonal Neurobiology (IPNB; Siegel, 2012), social and emotional experiences are seen as dynamic processes that involve the interplay between the brain, the mind, and relationships. According to IPNB (Siegel, 2012), the brain is constantly changing and shaped by children's social and emotional experiences, which then influence the development of neural connections, neural plasticity, and the organization of the brain. Positive interactions with teachers, peers, and caregivers provide a nurturing environment for children's social and emotional development, which can result in emotional regulation, empathy, and social skills (Siegel, 2012). Following Siegel's theory, the POMPedaSens program aims to facilitate appropriate group interactions by increasing ECEPs' and children's understanding of the growing mind, brain, and relationships. The program also seeks to raise ECEPs' awareness of what is 'behind the behavior', and the fact that early behavior problems can be due to an imbalance in the brain, regulative system, and mind.

The Finnish ECEC's context is considered to describe the current intervention context. In Finland, ECEPs are educated either at universities (teacher education and educational sciences), universities of applied sciences (social science), or vocational schools (social sciences). ECEC in Finland is based on an integrated approach to education and care, the so-called "Educare" model (Finnish National Agency for Education, n.d.). All children under school age are legally entitled to full-time early childhood education and care in an early education center or a family daycare premise. Municipalities have a statutory duty to provide ECEC services according to local needs. The age range of children in the same ECEC setting may vary from less than one year to seven years. One year of preschool education is systematic instruction provided in the year preceding the start of comprehensive school (single-structure primary and lower secondary education). Children enter preschool education which lasts about four hours a day in August of the year they turn six. Participation in preschool education or corresponding activities has been mandatory since August 2015 (European Commission, n.d.).

Components of the POMPedaSens Program

The POMPedaSens program consists of two components:

1) *Young learning mind* (POM; Pieni oppiva mieli). POM was launched at the University of Helsinki in 2014. The aim was to implement mindsight-informed, evidence-based SEL intervention programming (MindUP™) for preschool children (e.g., Crooks et al., 2020; Flook et al., 2015; for a review, see Sun et al., 2021). POM training was designed to build preschool children's prosocial, emotional, and self-regulation skills, stress management, attention, and concentration. The POM training included implementing recovery episodes, so-called 'brain breaks'. During brain breaks, the children were prompted to concentrate on breathing and, through that, calm down. The goal was to put brain breaks in practice at least three times a day, one to three minutes at a time. The program has been shown to positively affect the children's emotion regulation skills, social confidence, and prosocial development (Häkkinen, 2017).

2) *Pedagogical sensitivity* (PedaSens) was launched at the University of Helsinki in 2013. PedaSens training was designed to reduce children's stress in ECEC centers by strengthening the pedagogical sensitivity of adults. Pedagogical sensitivity is defined as the ability of adults to control the group's atmosphere by recognizing children's initiatives and signals and responding to them meaningfully. ECEPs introduced emotional availability dimensions (sensitivity, structuring, non-intrusiveness, non-hostility, and child responsiveness/involvement) by considering their practical use in group interactions (Harkoma et al., 2022). ECEPs received theoretical and practical information on emotional availability and children's development (e.g., the importance of secure attachment relationships and children's temperament dispositions) and video material demonstrating the best practice of group interaction. The program positively affected ECEPs' emotional availability and non-intrusiveness (Harkoma, 2016; Harkoma et al., 2022).

The POMPedaSens training process was led and implemented by professionals with master's degrees in ECEC and specialization in both POM and PedaSens contents. The ECEPs were trained to implement the program to improve teacher qualification, teacher-child interactions, and competences. ECEPs received the intervention training at the beginning of the study. The ECEPs were trained to develop activities and renew practices to improve every child's SEL through responsive and supportive interaction and inclusive learning environments (Jensen et al., 2017). The ECEPs practiced this approach through

ongoing education and training sessions to implement the program.

Materials of the POMPedaSens Program

The POMPedaSens program materials were produced on three levels:

1. Training workshops for ECEPs led by POMPedaSens coaches;
2. Training workshops for ECEPs led by early childhood special education teachers as team supervisors;
3. Activities and materials for children (conducted by ECEPs in the ECEC groups).

Materials for the training workshops (first level) were PowerPoint presentations, activating lectures including theoretical and practical information, educational videos from various group activities, and a package with some tips to apply when implementing the learning activities in the classroom. In addition, ECEPs' were introduced to using reflective diaries (POM diary and PedaSens diary), including experiences from implementing the POMPedasens program once a month. Further, the form of a weekly digital logbook considering the implementation of activities was demonstrated. All ECEC groups got a bluebell (an object that makes certain soft sounds) and a digital POMPedasens manual for self-study.

On the second level, early childhood special education teachers were further trained by POMPedaSens coaches to act as team supervisors and guide ECEPs in implementing the program. Team supervisors are also instructed to spot signs of successful moments with emotional availability and group sensitivity once a month. That is, the team supervisors empowered the ECEPs by pointing out the strengths of their actions toward emotional availability and group sensitivity instead of their weaknesses. Materials used were videotapes from various group activities during the intervention, such as learning videos of different group interactions in daily ECEC routines, including more or less sensitive ECEPs' behaviors. Reflective group discussions with ECEPs were also carried out around the videotapes.

On the third level ECEPs were provided with different games and activities to promote children's early SEL. For example, as part of the program, the goal was to increase children's understanding of the role of different brain parts in social and emotional behaviors. Children were introduced to brain characteristics using symbols like "a watchdog" for the amygdala (which acts as an alarming center in the central nervous system and is responsible for emotional changes), "an elephant" for the hippocampus (which is involved in both memory and the neuroendocrine regulation of stress hormones), and "a professor owl" for prefrontal lobes (which is responsible for the control of behavior, thoughts, and emotional regulation). Children used these characteristics in different forms and ways, e.g., puppet shows, brain-hut, drawings, and stories. Another example of activities included brain breaks, in which children calm down to observe their breathing and changes in bodily feelings. The teacher guides children verbally and rings the bluebell to help children to concentrate and stay quiet. The atmosphere is calm, permissive, and positive. The entire group focuses on the same situation, which supports the group's sense of togetherness. When all the children have reached a calm state, the teacher rings the bluebell again to mark the end of the brain breaks, after which the daily ECEC routines can continue, accompanied by a positive atmosphere.

Teacher Training Approach

The training included four workshops (four-day training, three hours per day) for all ECEPs participating in the program. The first two workshops focused on brain functions, concentration, self-regulation, senses, and conscious perception. ECEPs learned about brain, body, and behavior interconnections in the workshop. In addition, they were instructed on how to familiarize children with the brain and its functions. The aim was to provide psychological tools and a sense of self-control for children; they learned about the brain and its role in emotional regulation; 'my brain, your brain, and the brains together' were the ongoing theme contents of the POM program in the first semester. The third workshop focused on the POM program for the second semester, featuring knowledge about compassion, kindliness, trust and sense of belonging, and SEL. The fourth workshop focused on the PedaSens program, including information about pedagogical group sensitivity (one day, three hours). In addition, Early childhood special education teachers were trained as team supervisors in PedaSens workshops (fifth workshop, one day, seven hours). The sixth workshop (one day, seven hours) aimed to train early special education teachers to use video-based feedback in supporting ECEPs' pedagogical group sensitivity. During the implementation of the program as part of the present evaluation

Table 1
Description of ECEPs' Training Sessions, Workshops' Objectives, Skills, and Toolkit Items

Workshop 1 & 2—POM 1 *Objectives*: Increase knowledge about young learning minds *Specific teacher strategies/behaviors*: Adopt the methods of POM – Increasing the ability to see the child behind the behavior, introducing brain parts and mascots referring to brain parts *Toolkit items designed to help teacher practice*: Material package with activity tips and diary for implementation of activities
Workshop 3—POM 2 *Objectives*: Increase a sense of belonging and cooperation among the ECEC group *Specific teacher strategies/behaviors*: Adopt the methods of POM – Assist children's commitment to the group, strengthen children's empathy and increase compassionate attention to others *Toolkit items designed to help teacher practice*: Material package with activity tips and diary for implementation of activities
Workshop 4—PedaSens 1 *Objectives*: Increase ECEPs' pedagogical sensitivity *Specific teacher strategies/behaviors*: Increasing ability to recognize signs of emotional alarms and respond appropriately at the individual and group levels. *Toolkit items designed to help teacher practice*: Theoretical and practical information on pedagogical group sensitivity
Workshop 5—PedaSens 2 *Objectives*: Train early childhood special education teachers' role as team supervisors *Specific teacher strategies/behaviors*: Increase teachers' ability to reflect on interaction using video material and support ECEP s' reflective discussions on interaction and pedagogical practices *Toolkit items designed to help teacher practice*: Lecture and workshop including theoretical and practical information as well as video material
Workshop 6—PedaSens 3 *Objectives*: Train early special education teachers to use video-based feedback in supporting ECEPs' pedagogical group sensitivity *Specific teacher strategies/behaviors*: Use video-based feedback and a positive approach to ECEPs' interaction with children *Toolkit items designed to help teacher practice*: Interactive workshop for early special education teachers. Observing videoed interactions of teachers with children in their groups and discussing the content with other teachers

study, team supervisors held additional four workshop sessions (four days, two hours per day) with the ECEPs in the IG, including watching some example videos about teacher-child interactions in the classrooms (the first workshop), self-reflection (the second workshop), as well as reflections and feedback on the videos that were taped at the beginning of the study from ECEPs participating in this study (the third and fourth workshop). The team supervisors were trained and instructed to guide and lead the reflection and give feedback to ECEPs who participated in the program. The final workshop included discussions within the teams about feedback and an overview of the intervention and program. All ECEPs ($N = 62$) participated in the training sessions. The description of ECEPs' training sessions, workshops' objectives, skills, and examples of toolkit items are presented in Table 1.

Program Implementation and Fidelity

The implementation of the program was monitored using reflective diaries (POM diary and PedaSens diary) and process evaluation forms once a month to maintain implementation fidelity. The POM diary was intended to document the implementation of the intervention program. The team reflection was designed to gain important information about the program's functionality and potential challenges. The PedaSens diary was used to reflectively contemplate the strengths of individual and team-specific interactions in ECEC centers, as well as reflect on the course and success of interactions in the child group. The effectiveness of reflection was enhanced at the team level because situations were regularly recorded on paper and returned to them later. This could be, for example, by considering the situation's progress or the associated challenges. Participants kept the diary individually and collectively with their own team.

Further, to maintain training quality and implementation fidelity, the POMPedaSens coaches had face-to-face meetings. In the first half of the intervention (semester 2019), the POMPedaSens coaches visited the ECEC centers implementing the program to monitor how the ECEPs have implemented the contents of the program in their groups' everyday lives. During these mentoring visits, the planning group gave tips, answered questions, and discussed the program with the ECEPs. Even though the participants could contact the research team at any time, mentoring visits allowed them to see the ECEC

environment and gather more information about the intervention progress. Collaboration based on trust between parents and ECEC centers was strengthened by providing parents with information related to the educational procedures of the intervention and material to support their children's SEL at-home environments.

Before program implementation, POMPedaSens researchers were committed to carefully implementing all parts of the program following the Finnish Advisory Board on Research Integrity and the ethical principles of the Helsinki Declaration. Ethical aspects and considerations are essential, especially when children are part of the research (Phelan & Kinsella, 2013). An informed consent form was sent to the directors of the ECEC centers and later to the children's parents/guardians to get signed before the intervention. The participants were recruited voluntarily and guaranteed complete anonymity. They were informed that they could withdraw from the study at any time. Regardless of the existing written consent from the parent, the children's willingness to participate in or continue the interview/tasks (Phelan & Kinsella, 2013) was considered carefully. In case of any verbal or non-verbal signs of discomfort, the child could interrupt the situation. Primarily, the POMPedaSens' researcher was the only adult present during the interview and individual task situations, but if a child needed the presence of the ECEP, they were allowed to come along. ECEPs participated in the intervention study as part of their work during their working hours, and it did not involve any additional work.

Social Validity of Social-Emotional Learning Interventions

Social validity assessment is defined as measuring the social acceptability of intervention goals, the social appropriateness of the procedures, and the social importance of the effects of an intervention on behavior changes (Wolf, 1978). Social validity measures are intended to provide supplemental data to assess the degree to which an intervention program is perceived as significant, relevant, and beneficial by the individuals involved in the intervention (Wolf, 1978). Subjective (i.e., questionnaires, surveys, rating scales, and discussions) and objective (i.e., direct observation of behavior, consumer choice of intervention, and comparison of behavior to a normative population) forms of assessing social validity may provide data on all three aspects of the social validity of an intervention that Wolf (1978) outlined (i.e., goals, procedures, effects) or only one or two aspects of an intervention (e.g., assessing the social validity of the treatment effects) (Ferguson & Cihon, 2018).

In the context of SEL interventions, social validity focuses on measuring stakeholders' (e.g., teachers, children, parents, and administrators' perceptions) regarding the effectiveness and practicality of the intervention. ECEPs play a crucial role in implementing SEL interventions, and their feedback is valuable for determining social validity. However, social validity assessment has received minimal attention in previous research (Ferguson & Cihon, 2018). For example, a recent study by Moazami-Goodarzi et al. (2021) examined ECEPs' opinions on the effectiveness and procedures of a Finnish PD intervention program supporting early childhood SEL called Roundies. Teacher's feedback on the intervention effectiveness revealed improved teacher–child relationships and positive social and emotional behaviors in children. 97% of teachers were satisfied with the overall program. In another study, Conners-Burrow et al. (2017) examined teachers' opinions on the effectiveness of the Reaching Educators and Children (REACH) program supporting early childhood SEL. Findings indicated teacher satisfaction with the REACH program and individual components. More than 90% of teachers agreed that they would recommend REACH to other teachers, made changes in their classroom because of REACH, and felt they had a good relationship with the REACH coaches.

The Present Study

The present study contributes to ECEC and development and consists of the following:

1. Introducing a high-quality curriculum-based universal intervention program, i.e., POMedaSens, by presenting the program design and giving an overview of the implementation process.
2. Describing the preliminary evaluation of the social validity derived from the ECEPs' feedback on the significance of the program goals, appropriateness of the procedures, and behavior changes.

Method

Participants and procedure

Recruiting municipalities/cities announced the ECEC centers interested in participating in the study. These ECEC centers received more information about the study from the research group. In addition, information about POMPedaSens was offered during various kinds of briefing occasions at municipalities, for example, during ECEC "development days". Staff members of the participating ECEC centers were instructed to inform and recruit potential families who had 5–6-year-old children. A randomized controlled trial design was conducted with an intervention group (IG) and a waiting control group (CG, which also received the program after implementation in the IG). A total of 22 ECEC centers in Finland consented to participate in the study. Over 95% of parents consented to their children's participation. No data has been collected from non-consented children and their parents. Thus, an initial sample of 417 children (M_{AGE} = 72.27 months, SD = 5.48 at pretest; 53% girls) and 111 teachers (M_{AGE} =43.82 years, SD = 11.71 at pretest; 95% female) participated in the program implementation during September 2019 to December 2020. The size of the ECEC center was considered in the randomization procedure (big and small centers were in their own randomization groups) so that it was possible to get the same size in the IG and CG. After initial measurements at the pretest and random assignment to the IG and CG, 12 ECEC centers were part of the IG, and 10 ECEC centers were part of the CG. The program measures were applied for eight months, providing the data at the pretest (before program implementation) and post-test (after full program implementation). A flowchart of the intervention design and the number of participants is presented in Fig. 1.

The present evaluation study focused on the IG, including 12 ECEC centers, 200 children (M_{AGE} = 72.27 months, SD = 5.48 before the intervention; 53% girls), and 62 ECEPs (one teacher per ECEC group; M_{AGE} = 43.82 years, SD = 11.71 after the intervention; 95% female) participated in the program (see Fig. 1). 67% of ECEPs had a bachelor's degree or higher at the baseline, and 90% were full-time employed. A total of 69% of the parents had a bachelor's degree or higher at the baseline, and 70% were employed. The sample was representative of the educational characteristics of the general population in Finland (Statistics Finland, 2021).

Instruments

After the intervention, all ECEPs who participated in the IG were invited to answer 16 questions measuring their perceived effectiveness and satisfaction with the program (e.g., "I liked and was pleased with the implementation of the program"; "I feel that the atmosphere of the group and the children's relationships have been improved"; "I see myself using the program method/materials and exercises in daily classroom activities after the intervention"). The questions were designed by POMPedaSense experts to discover ECEPs' perceptions of the helpfulness of the program and its components. ECEPs were asked to rate the impact of the program on a 5-point rating scale (1 = *Strongly disagree*, 5 = *Strongly agree*) (see Table 2).

Results

For the current study using the IG data, a preliminary evaluation of the social validity of the POMPedaSens program was designed by measuring the ECEPs' satisfaction with the program at the post-test. Data from 42 ECEPs were available after the program implementation (see Fig. 1). Table 2 summarizes results related to ECEPs' perceived effectiveness and satisfaction with the POMPedaSens program. ECEPs' feedback on the significance of the program's goals and appropriateness of the procedures revealed that they were satisfied with the overall program and the implementation, the program was very suitable for their ECEC center, and that children were interested in it. ECEPs also reported that they would participate in the program again, recommend it to other teachers, and continue using it in the future. Further, ECEPs' feedback on behavior changes revealed that the intervention program improved SEL among children.

Discussion

Discussion of the Program Design and Implementation

The POMPedaSens program aims at developing ECEPs' pedagogical group sensitivity to better support ECEPs' PD, engagement, and emotional availability, thereby supporting children's social-emotional competencies and reducing the risk of

Figure 1

Flowchart of the Intervention Design and the Number of Corresponding Participants.

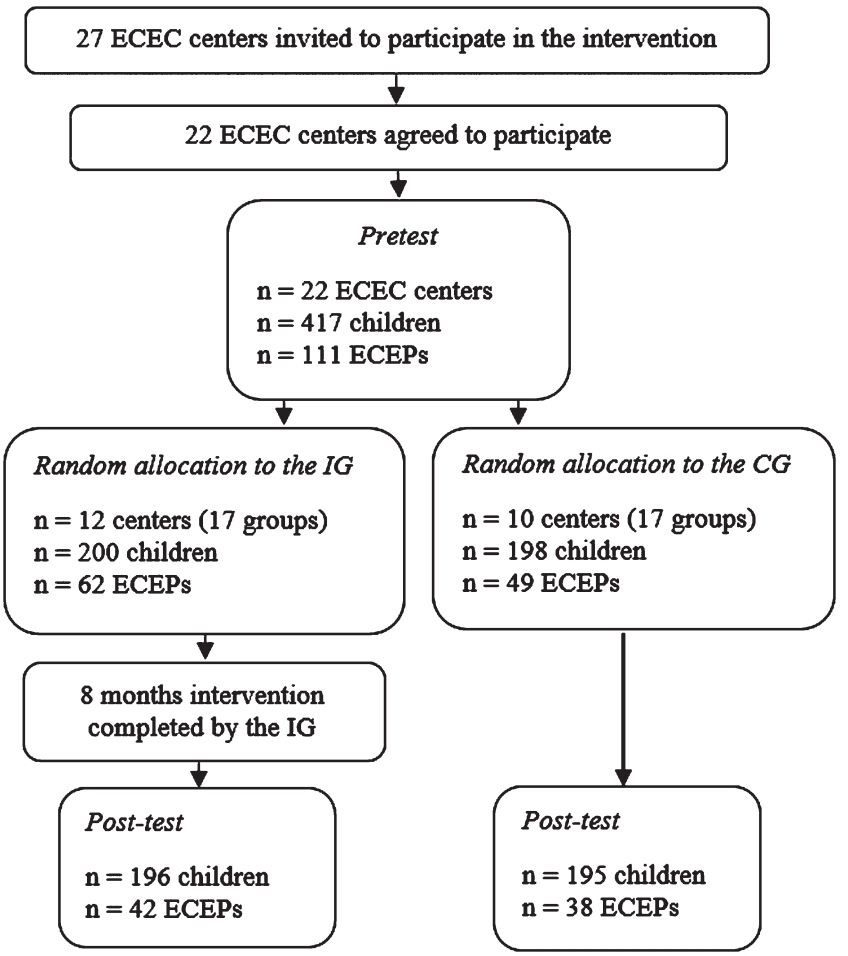

Table 2

ECEPs' Perceived Effectiveness and Satisfaction with the POMPedaSens Program

Satisfaction with the program and its components*	N	%
I liked and was pleased with the implementation of the program.	42	100%
It was easy to take part in the activities in the child group.	36	86%
The program was very suitable for our ECEC center.	26	61%
I managed to implement the program well.	30	71%
The contents of the program were interesting for children.	42	100%
I feel that the atmosphere of the group and the children's relationships have been improved.	30	71%
I feel the children's emotional and interaction skills have been strengthened.	32	75%
I can see improvements in concentration and temper of mind.	32	75%
I can see children's control of emotions has strengthened.	37	88%
I can see children's skills of understanding and accepting others' feelings/behavior have improved.	27	63%
The calming exercises ('brain breaks') positively impacted children's behaviors.	37	88%
Regularly carried out group calming exercises have supported the child's self-control.	37	88%
I would participate again in the POMPedasens intervention program.	42	100%
I would recommend the program to other early childhood education teachers.	42	100%
I see myself using the program method/materials and exercises in daily classroom activities after the intervention.	42	100%
The program improved the adults' behavior and/or well-being at work in the group.	37	88%

Note. *Percentage of teachers indicated they "*agree*" or "*strongly agree*".

cumulating behavioral problems. The main aim of this study was to describe the program's development and implementation in Finland's ECEC settings.

The POMPedaSens program distinguishes itself from other programs found in European studies in three ways: 1) It is a universal early childhood preventive intervention program that is designed to target all children in ECEC settings, regardless of their risk status for implementation (similar approaches are described in, for example, Jensen et al., 2017; Koivula et al., 2020; Moazami-Goodarzi et al., 2021; Scheithauer et al., 2022); 2) It focuses on the PD of ECEPs to implement a program aimed at promoting children's SEL via an inclusive pedagogy, founded theoretically in the theories of positive psychology (Seligman's PERMA model of well-being, 2011) and developmental neurosciences (IPNB; Siegel, 2012), combined with pedagogical knowledge of high-quality interaction in the context of ECEC; 3) It trains ECEPs and children to understand the structures of the brain, it's functioning, and role in emotion regulation in a very concrete way. Learning about the brain parts helps both ECEPs and children to understand that they are subjects of their own actions and can manage their own thoughts, feelings, and emotions. Brain breaks allow children to feel emotions as physical sensations in their bodies.

All program components are easy to apply and can be implemented and integrated simultaneously and continuously in ECEC settings. The cornerstone of successful early SEL is effective PD. The POMPedaSens program trains ECEPs on an evidence-based platform targeting theoretical knowledge and practice interplay. This is crucial to ensure that the ECEPs can implement the pedagogical methods and tools into renewed practices (Jensen et al., 2017). The focal point is to provide education and nurturing care simultaneously by being responsive to the children's needs and potential individually and at the group level, thus supporting children's SEL and well-being.

Discussion of the Social Validity of the POMPedaSens Program

The second aim of this study was to describe the preliminary evaluation of the social validity of the program after implementation in the IGs. The feedback on the significance of the program's goals and appropriateness of the procedures and behavior changes suggested that ECEPs were highly satisfied with the program, would participate in the program again, recommend it to other teachers, and continue using it in the future. ECEPs reported that implementing the POMPedaSens program's ideas was easy to adapt as part of a daily routine, aroused children's interest, and improved their social and emotional skills. ECEPs felt carrying out brain breaks positively impacted children's behaviors, and the calming group exercises improved children's self-control. They also reported that the program had improved their own well-being at work. Overall, ECEPs' feedback shows that the program successfully built ECEPs' capacity to promote children's SEL.

The POMPedaSens program focuses on an age when children are especially receptive to external guidance and support. The transition to ECEC has been identified as a vulnerable stage for many children due to several challenges, such as spending a significant amount of time outside the family, entering a new social environment, meeting the complex demands of ECEPs, following directions, entering group play, and establishing new peer relationships (Denham et al., 2012). Based on a national survey of social-emotional competencies in ECEC settings, among the 94 ECEPs in Finland, 11% perceived an increase in children's social-emotional challenges and restlessness (Määttä et al., 2017). Effective PD is a promising way of improving the quality of ECEC, improving both child and ECEPs' outcomes. For example, a recent systematic literature review (Blewitt et al., 2020) suggests curriculum-based SEL programs may strengthen ECEC quality, particularly the provision of responsive and nurturing adult-child interactions and effective group management. The POMPedaSens program targets children and ECEPs to enhance their sense of belonging. It might improve the well-being of children and ECEPs and offer a platform that releases learning potential in children.

Limitations

One limitation factor of this study is the significant rate of attrition among ECEPs (32%). Notably, the COVID-19 pandemic has impacted ECEPs' participation rate. Some ECEPs had to self-isolate due to being around someone who tested positive or tested positive themselves and, therefore, could not participate in program implementation. Further, there were some changes in the personnel of the ECEC centers undergoing the program. Some ECEPs had to change their group or leave the ECEC center and did not complete the intervention. The second limitation is that

the preliminary evaluation of the social validity of the POMPedaSens program is descriptive and does not allow for conclusions on the program's effectiveness. However, ECEPs' perceived effectiveness and satisfaction with the program are considered important contributions to its overall effectiveness. The impact of the program on children's behavioral outcomes and ECEPs' well-being using a strong evaluation design is being evaluated in prospective studies.

Conclusion

The current study has contributed to filling some of the existing knowledge gaps in Europe by describing the development, implementation, and preliminary evaluation of a high-quality curriculum-based, universal preventive intervention program that supports teachers' knowledge and skills to promote young children's SEL. The experiences collected during implementation were promising. The results of the social validity evaluation showed that ECEPs were motivated to continue working with POMPedaSens principles. ECEPs reported high satisfaction with the general program and improvement in children's SEL. This suggests that the program may be a promising approach to promoting children's SEL by supporting the PD of ECEPs. Prospective studies will focus on the intervention's impact on children's behavioral outcomes and ECEPs' well-being.

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