




## Research Paper

# Teacher observations of loneliness and ostracism among five-year-olds: Associations with social–emotional functioning, vocabulary, and language background

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## ABSTRACT

Being included in play and forming positive peer relationships are critical for children to meet their need to belong in early childhood education and care (ECEC). Loneliness and ostracism, then, threaten meeting this need. In this study, five-year-old children's ( $N = 31,169$ ) loneliness and ostracism were examined through ECEC teacher observations. About one-sixth of the children were evaluated as lonely and close to one-tenth as ostracized often to very often. Groups of children were then formed, based on different combinations in these threats to belonging: 1) rare threats (80.2%), 2) frequently lonely (rarely ostracized) (10.5%), 3) accumulated threats (7.7%), and 4) frequently ostracized (rarely lonely) (1.6%). Multinomial regression analysis with pairwise comparisons suggested differences between the groups in children's social-emotional functioning, vocabulary, and language background but not in gender. It is vital to equip ECEC teachers with competencies to observe and address loneliness and ostracism, to build safe and inclusive peer communities for all children, and to develop children's social-emotional skills. Implications for ensuring that every child can build peer relationships, access play, and learn to positively include their diverse peers are discussed.

## 1. Introduction

Playing with peers in early childhood education and care (ECEC) settings provides children with an invaluable opportunity to learn to navigate their social world and to form reciprocal friendships (Coelho et al., 2017; Koivula & Hännikäinen, 2017). All children have a fundamental need to belong—to form and to maintain positive and meaningful social relationships (Baumeister & Leary, 1995). This is also highlighted by the self-determination theory (SDT; Ryan & Deci, 2017); Satisfying the need for relatedness (i.e., sense of belonging) contributes to well-being, while relatedness-frustration (e.g., sense of exclusion and loneliness) is linked with ill-being (Vansteenkiste et al., 2020). Feeling accepted, respected, included, and supported are suggested as critical building blocks for a sense of belonging at school (Goodenow & Grady, 1993). In ECEC settings, the associations between a sense of belonging and children's participation, positive peer relationships, and play have

been emphasized (Einarsdóttir & Ólafsdóttir, 2020; Kyrönlampi et al., 2021).

In this current study, loneliness and ostracism in ECEC settings are approached as threats to meeting the need to belong. While loneliness reflects a hurtful discrepancy between actual and desired social relationships (Peplau & Perlman, 1982), ostracism relates to being excluded or ignored by others (Williams, 2007). According to previous studies, more than one-tenth (Cassidy & Asher, 1992) and even up to one-fifth (Laine et al., 2010) of 5–7-year-old children feel lonely. In a Finnish child barometer (Tuukkanen, 2025), children aged 6–7 years ( $N = 408$ ) mentioned playing and peers as the best aspects of preprimary education. Although the majority of the children reported having friends, more than half reported having experienced bullying. In a Norwegian study among 4–6 year-old children ( $N = 171$ ), 17 percent reported only having a few or no friends in ECEC, and more than one-tenth having often experienced harassment (e.g., being excluded

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from play) (Sandseter & Seland, 2018). Being excluded by peers has been suggested as the most common form of bullying in ECEC (Kirves & Sajaniemi, 2012). Ostracism can, indeed, occur through deliberate acts of excluding and ignoring, but it may also be incidental—either way, it threatens the need to belong (Williams & Nida, 2022). Previous research building on children’s self- and peer-reports, suggests that peer difficulties can relate to one aspect, particularly, or co-occur (e.g., loneliness and rejection) (Laine et al., 2010; Qualter & Munn, 2002).

Teachers have a vital role in fostering an inclusive environment where all children can become socially visible and positively included (Kurki et al., 2017; Lundström et al., 2022). In this current study, different combinations of children’s loneliness and ostracism are explored via ECEC teachers’ observations—a perspective that has received scant attention (for primary school teachers’ reports of children’s loneliness, see Geukens et al., 2021). In their study among adolescents, Kiuru et al. (2024) found that, although loneliness and ostracism are intertwined, their consequences are somewhat unique. Therefore, in addition to looking into how common five-year-old children’s loneliness and ostracism are, based on teacher observations, this study examines the extent to which these are associated with children’s social-emotional functioning, vocabulary, and language backgrounds.

As suggested by Allen and colleagues (2021) in their integrative framework of belonging, competencies for belonging and opportunities to belong are interrelated. Meaningful opportunities to play with diverse peers during this critical developmental period help children acquire skills that they need to be included and to positively include others (Kuutti et al., 2021). Loneliness and ostracism can be associated with various social-emotional difficulties (e.g., low self-regulation, emotional problems), especially when prolonged (Schinka et al., 2013; Stenseng et al., 2014; Qualter et al., 2010). Prosocial behaviors, such as cooperation, then, are suggested to contribute to being positively included and encountered by peers (Coelho et al., 2017; Junttila et al., 2006). Moreover, previous research suggests that language skills may help a child be understood and included by peers (Menting et al., 2011) and that speaking a country’s majority language may help build a sense of belonging in the context of ECEC (Sadownik, 2018).

In ECEC settings, children take their first steps in developing a sense of belonging within larger peer communities: whether they can feel safe in peer relationships and as important members of a group (Kyrönlampi et al., 2021). Opportunities to engage in play with peers contribute to building socially sustainable ECEC settings that foster children’s well-being, learning, and participation (Kangas et al., 2023). By looking into children’s loneliness and ostracism (along with their concomitants) via teachers’ observations, the current study aims to provide unique insights for building inclusive, safe ECEC communities.

### 1.1. Identifying Children’s Loneliness and Ostracism

ECEC teachers are in a position that allows them to observe children playing with a diverse range of peers, and thereby – if they possess sufficient knowledge and resources – identify loneliness and ostracism. Identifying threats to children’s need to belong at an early stage is critical to foster their well-being and learning and to prevent vicious cycles where difficulties accumulate (Kuutti et al., 2021). This can nevertheless be challenging. Loneliness differs from objective social isolation, and a child can feel lonely even in the middle of a peer group (Salo, Junttila, & Vauras, 2020). Ostracism, then, can occur through relatively ‘invisible’ forms (Lundström et al., 2022) and exclusion often takes place during free play time (Peltola et al., 2023).

Loneliness is typically measured by means of self-reports about its social (e.g., lack of a feeling that one fits in) and emotional (e.g., lacking a desired close friend) dimensions (Weiss, 1973; see also, Salo et al., 2020). In this study, the social dimension, in particular, was targeted, as it associates with the sense of non-belonging (Galanaki & Vassilopoulou, 2007) and is likely easier to observe from outside (Geukens et al., 2021). Adults who know the child well may be able to identify loneliness

through the information that they have access to, such as by observing the child’s behavioral changes (Xerxa et al., 2023). Indeed, in a study by Geukens et al. (2021), teacher reports on elementary school children whom they perceive feeling lonely were found to have a small to moderate correlation with children’s self-reported loneliness. Geukens et al. discussed that teachers seem to observe “something unique to loneliness” that is not represented by peer status and social behaviors alone.

Galanaki and Vassilopoulou (2007) have suggested the need to acknowledge the duration or intensity and different indicators of loneliness to help teachers better capture the child’s experience. To these ends, this study presents a more nuanced perspective than asking teachers to nominate as many or few children in their class whom they perceive “sometimes feel lonely” (Geukens et al., 2021). More specifically, teachers were asked to report the frequency of loneliness for each child in their group separately through two aspects: 1) The child appears lonely, and 2) It is difficult for the child to find friends. This combination aimed to help teachers focus on aspects typical of social loneliness: a hurtful experience that relates to difficulty forming meaningful social connections, involuntarily spending time alone, and not feeling that one fits in (McKenna-Plumley et al., 2023).

Ostracism, then, has been perhaps most typically examined through the Cyberball Paradigm, where some children are included, and others excluded in a virtual ball tossing game (e.g., Wölfer & Scheithauer, 2013). Sociometric nominations are commonly applied to capture peer rejection, for example through peer mentions of dislikes (e.g., Qualter & Munn, 2002) and teacher-reports on child being disliked by peers (e.g., Stenseng et al., 2014). Children’s peer exclusion has further been examined by interviewing children (e.g., Peltola et al., 2023) and through observations conducted by researchers (e.g., Lundström et al., 2022). Among adolescents, researchers have also studied ostracism through self-reported experiences of being excluded and ignored (Gilman et al., 2013).

In this study, the focus is on the ostracizing behaviors within the peer play context in ECEC, as observed by teachers (the frequency of the child being left out of play). Play allows children to engage meaningfully with their diverse peers, both verbally and non-verbally (Kangas et al., 2023; Lundström et al., 2022). It is being left out of play activities that young children typically refer to when describing their experiences of peer exclusion or rejection—for example, being denied access to play or ignored by peers during play (Harrist & Bradley, 2003; Lundström et al., 2022; Tay-Lim & Gan, 2013).

### 1.2. Loneliness and Ostracism: Associations with Social-Emotional Functioning and Vocabulary

Loneliness raises feelings of hurt, sadness, boredom, and even fear (Galanaki & Vassilopoulou, 2007; McKenna-Plumley et al., 2023). It typically motivates people to seek connection with others, but it may also lead to hypervigilance of social threats (e.g., negative expectations/interpretations of social interactions), eliciting responses that may even perpetuate it (Cacioppo et al., 2014). Especially when prolonged, loneliness is associated with internalizing difficulties, such as low self-esteem and depression (Schinka et al., 2013; Xerxa et al., 2023). Loneliness has also been suggested to be associated with externalizing difficulties. For example, children exhibiting both aggressive and withdrawn behaviors have been found to experience more loneliness than their peers (Ladd & Burgess, 1999). Aggressive behaviors (Schinka et al., 2013) and difficulties in self-regulation (Evans et al., 2023) may further increase the child’s risk for later loneliness.

Ostracism, as well, causes social pain, emotions varying from sad, angry and frustrated (Nergaard, 2020; Wölfer & Scheithauer, 2013). It can prompt various reactions from prosocial attempts to be reincluded, to avoidant and even maladaptive behaviors (e.g., ostracizing others), as a reaction to the need-threat it causes (Baumeister & Leary, 1995; Wölfer & Scheithauer, 2013). Long-term ostracism, particularly, is associated with internalizing difficulties such as depression and feelings of

helplessness, alienation and unworthiness (Williams & Nida, 2022). As examples of externalizing difficulties associated with ostracism, Stenseng et al. (2014) found that among children who exhibited higher levels of aggressive behaviors at age 4, peer exclusion at that age amplified aggressive behaviors by age 6. Low self-regulation may set a child at specific risk of being left outside play, thereby decreasing opportunities to practice social-emotional skills, and prompting vicious circles that are hard to break if not intervened early on (Kuutti et al., 2021). Spender et al.'s (2023) review of school-aged children and adolescents further suggests that hyperactivity/inattention can increase a child's risk of being excluded by their peers.

Different kinds of difficulties with peers can further be associated with different support needs. This was illustrated by findings of Qualter and Munn (2002), with respect to different combinations of 4–9-year-old children's loneliness (self-reports) and rejection (peer measures) and their associations with social-emotional difficulties and vocabulary: 1) Children who were neither lonely nor rejected were well-adjusted, overall; 2) Lonely (but not rejected) children had high teacher-reported internalizing difficulties; 3) Rejected (but not lonely) children high externalizing difficulties; and 4) Rejected and lonely children had high levels of both internalizing and externalizing difficulties and scored lowest in vocabulary. Similar patterns have been identified among adolescents: prolonged (self-reported) social loneliness was found to be associated with internalizing difficulties, and stable (peer-rated) ostracism with externalizing difficulties (Kiuru et al., 2024). These studies show the value of a person-centered approach in acknowledging differential risks and needs for support.

Due to the explorative nature of this study, acquiring a nuanced understanding of aspects that teachers may attach to children's loneliness, ostracism, and their different combinations was considered valuable. Therefore, all five scales of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) were applied separately: the prosocial scale to measure strengths, along with the four difficulty scales that are typically combined into internalizing and externalizing ones (Goodman & Goodman, 2009). This allowed us to explore how different combinations of loneliness and ostracism, observed by teachers, were associated with children's: 1) Emotional problems (e.g., the child seems worried and afraid); 2) Peer relationship problems (e.g., the child is bullied or gets better along with adults); 3) Conduct problems (e.g., the child behaves disobediently, fights, and bullies others); 4) Hyperactivity/inattention (e.g., the child is easily distracted and restless); and 5) Prosocial behavior (e.g., the child is considerate of others' feelings) (Goodman, 1997).

Children need diverse social-emotional skills to meaningfully initiate, enter and sustain joint play with their peers which, then again, further supports the development of these skills (Kuutti et al., 2021; Wölfer & Scheithauer, 2013). Children's ability to express their needs and desires, and to resolve conflicts verbally may also positively contribute to the quality of their peer interactions (Hay et al., 2004). Therefore, children with lower vocabulary may be at a higher risk of encountering difficulties in building positive peer relationships (Menting et al., 2011). However, social competence has been suggested as a better predictor of young children's play behavior than language proficiency (Stangeland, 2017). Previous research further points to a trend in which diverse language backgrounds may be associated with children's fewer (or more constrained) opportunities to participate in ECEC, thereby potentially making it harder for them to build a sense of belonging (Sadownik, 2018). As part of this current study, associations between different combinations of loneliness and ostracism and children's receptive vocabulary and language backgrounds are explored.

### 1.3. Effect of the COVID-19 Pandemic Social Distancing on Children's Well-Being

The data for this study were collected 2021–2022, a period that can be seen as exceptional in the sense that, although the most acute phase of

the COVID-19 pandemic had passed, the impacts of social distancing continued to be reflected in several areas of society. In Finland during the spring of 2020, many children dropped out of ECEC as parents were encouraged to keep their children at home if possible (Linnavalli & Kalland, 2021). Participation in ECEC fell to less than one-third of pre-pandemic levels (Regional State Administrative Agency, 2020).

Teachers and parents have expressed concerns about how the absence of peer communication and playtime during the pandemic affected children's social-emotional development. Parents described children under age 7 as exhibiting increased externalizing behaviors (e.g., conduct problems, hyperactivity) compared to nonpandemic times (Christner et al., 2021; Watts & Pattnaik, 2023). Emotional problems, then, seemed to be more typical for school-aged children (Christner et al., 2021) and more pronounced in lower-socioeconomic status (SES) families (Oppermann et al., 2024). Moreover, Linnavalli and Kalland (2021) found in a small sample of families in Finland that parents reported a decline in preprimary-aged children's prosocial behavior compared to prepandemic time and that children who stayed at home were assessed to be lonelier.

In addition to social-emotional development, concerns have been raised regarding children's language development during critical development years that coincided with the pandemic. Zuniga-Montanez et al. (2025) found that COVID-19 restrictions significantly affected the language development of children aged 0–6, with most studies reporting declines in vocabulary (although the outcomes varied over time and by SES).

### 1.4. Context of This Study

In Finland, the ECEC program is universally available, with the majority of the five-year-olds participating in it: in 2021, 89 percent, and in 2022, 91 percent of all five-year-olds (Statistics Finland, 2025). These settings constitute significant proximal contexts where children learn to socialize with their diverse peers (Bronfenbrenner & Morris, 2006). It is also within these settings that children are exposed to the language and culture of society (Juutinen et al., 2023). In Finland, ECEC groups typically include children with diverse backgrounds and needs, aligning with the national requirements and aims of inclusion in education. The national ECEC curriculum (Finnish National Agency for Education [EDUFI], 2022) emphasizes participation, play, and supportive social relationships as well as respecting each child's linguistic and cultural backgrounds. These align with the Nordic educational idea with the values of social rights and equality at their heart (Einarsdóttir et al., 2015).

Between 2021 and 2024, Finland's Ministry of Education and Culture conducted a nationwide experiment (Two-Year Pre-primary Education Trial) to evaluate the effects of starting preprimary education at age 5 instead of 6, effectively extending it from one to two years. The study included approximately 35,000 children in 1,000 ECEC centers across 148 municipalities, with 40% of the children randomly assigned to the treatment group. The data of this current study were gathered from this nationwide experiment. Children in the treatment group typically attended four hours of preprimary education daily, followed by complementary ECEC for the rest of the day. In contrast, children in the control group attended ECEC throughout the day without the preprimary component. Both preprimary education and ECEC are guided by national curricula (Finnish National Agency for Education, 2021, 2022), which are similar in their emphasis on supporting children's holistic development—social, emotional, cognitive, and physical—and on learning through play.

In Finland, ECEC teachers are involved in children's day-to-day activities. Their contributions are various when viewed via social aspects: 1) managing children's peer relations (e.g., support for learning socially appropriate behaviors), 2) promoting the coherence of a group (e.g., feeling of togetherness), 3) supporting an individual child as part of a group (e.g., acceptance), and 4) discussing friendship and respectfulness

(e.g., empathy) (Salminen et al., 2013). Observational studies in ECEC settings in Finland further indicate that teachers' emotional support (e.g., sensitively identifying and responding to children's diverse social needs) is generally of high quality (e.g., Pakarinen et al., 2010; Salmi-nen, Guedes, Lerkkanen, Pakarinen, & Cadima, 2021).

### 1.5. Aims of the Present Study

This study explores the prevalence, differential combinations, and concomitants of five-year-olds' loneliness and ostracism within the peer context of ECEC reported by teachers. The following research questions were generated:

**RQ1.** Based on teachers' observations, how common are loneliness and ostracism among five-year-olds in Finland?

**RQ2.** What kinds of groups of children can be formed based on different combinations in the frequency of loneliness and ostracism, as observed by teachers?

**RQ3.** To what extent do children in these groups differ regarding their vocabulary, teacher-reported social-emotional functioning, gender, and language backgrounds?

## 2. Method

### 2.1. Participants

This study comprise the baseline data of two cohorts of five-year-olds in both the experimental (i.e., children started in two-year preprimary education at the age of 5) and control (i.e., children participated in ECEC at the age of 5 and then one-year preprimary education at the age of 6) groups. Data from children for whom teachers reported both loneliness and ostracism were included ( $N = 31,169$ : 46.8% girls, 45.3% boys; missing information, 7.9%). Based on register data, the mean income percentile of children's mothers was 52.35% ( $SD = 28.16\%$ ), and for fathers it was 50.77% ( $SD = 28.44\%$ ). Thus, the parents included were close to the national income average and the data comprised parents from a diverse range of income percentiles. The sample was fairly representative of Finnish five-year-olds who participate in ECEC (for more information, see Izadi et al., 2022; Sarvimäki et al., 2023). The study was ethically evaluated and approved by the Aalto University's Research Ethics Committee prior to data collection.

### 2.2. Measurements

Data were collected via ViLLE, which is an interactive web-based learning environment designed to promote student engagement and learning. It also provides research tools, making it well suited for large-scale data collection and for easily accessing and sharing statistics in groups of researchers from various institutions (Laakso et al., 2018). Through the ViLLE tool, ECEC teachers were asked to report, for each child in their group separately, loneliness, ostracism, and social-emotional functioning through the following measures:

#### 2.2.1. Loneliness

Teachers' observations of children's loneliness were based on two items. The first item ("The child appears lonely") resembles the commonly used single-item question in brief self-reports (i.e., "Do you ever feel lonely?") (e.g., Kiuru et al., 2024 among adolescents) and teacher evaluations in the context of elementary school (of children who "sometimes feel lonely") (Geukens et al., 2021). In this current study, the item was rephrased to determine whether the teacher believed that a child had this hurtful experience. As for the second item ("It is difficult for the child to find friends"), the Children's Loneliness Scale by Asher et al. (1984) includes a similar item ("It's hard for me to make friends").

This item aims to capture perhaps more easily observable signs of involuntarily spending time alone, characteristics of loneliness (e.g., McKenna-Plumley et al., 2023). ECEC teachers were asked to report separately for each child in their group whether these statements applied to the child using the responses "Hardly ever" (1), "Rarely" (2), "Often" (3), or "Very often" (4).

#### 2.2.2. Ostracism

Ostracism was evaluated through one item: "The child is left out of play." This presents a more direct measure of observable ostracism behaviors (i.e., exclusion or ignoring) compared to sociometric measures that target peer exclusion through negative nominations (e.g., Stenseng et al., 2014). Formulating the item in the form of a child being "left out of play" aligns with the key aspects that Gilman et al. (2013) identified for measuring ostracism experiences among adolescents—including the feeling of being excluded (e.g., being left out of activities). In this current study, it was contextualized within a play activity that is particularly meaningful and crucial for young children (e.g., Kangas et al., 2023; Lundström et al., 2022; Tuukkanen, 2025). ECEC teachers were asked to report, for each child in their group separately, whether this statement applied to the child, using the responses "Hardly ever" (1), "Rarely" (2), "Often" (3), or "Very often" (4).

#### 2.2.3. Social-Emotional Functioning

The Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997) was applied to evaluate children's social-emotional functioning. It is a commonly used screening method to identify teacher-reported difficulties and strengths among children, and its validity has been found acceptable in a Finnish community sample of 4–9-year-old children (Borg et al., 2014). The SDQ comprises 25 items, divided into five scales. Each item was reported on a 3-point Likert scale: "Not true" [0], "Somewhat true" [1] or "Certainly true" [2]. The scores were generated by summing the scores for the five items that make up the scale (i.e., scale scores ranging from 0 to 10). Cronbach's alphas for the scales were as follows: Emotional problems  $\alpha = .71$ ; Peer relationship problems  $\alpha = .75$ ; Conduct problems  $\alpha = .78$ ; Hyperactivity/inattention  $\alpha = .90$ ; and Prosocial behavior  $\alpha = .82$ .

To measure children's vocabulary, teachers were asked to conduct the following test for children digitally through the ViLLE collaborative education tool (Laakso et al., 2018).

#### 2.2.4. Vocabulary

A short version of the Peabody Picture Vocabulary Test (PPVT-4; Dunn & Dunn, 2007) with 30 words was applied to examine children's receptive vocabulary in Finnish (95.9% of children) or Swedish (4.1% of children) (Finland's nationwide official languages), depending on the language at the ECEC center. The items for the shortened version were selected based on normative data from the U.S. and Sweden (Karner & Mattsin, 2017). The items for the shortened version were selected based on pilot data from full-scale administrations in Finnish and Swedish. The test was adapted in a culturally sensitive manner, ensuring that the pictures were understandable for children in Finland. Teachers read the word from the screen and asked the child to select the picture that represents the spoken word that they had heard. The children's scores were the number of correct responses.

#### 2.2.5. Language Background

Language background was coded as a binary variable: 1 indicated that the child's mother tongue in the national register was an official language of Finland ( $n = 25,787$ )—Finnish, Swedish (nationwide), or Sámi (a regional official status)—and 0 indicated a language other than one of these official languages of Finland ( $n = 2,927$ ).

### 2.3. Data Analysis

All statistical analyses were performed with R (R Core Team, 2025).

Descriptive statistics of the measures, reported as means (*Ms*) and standard deviations (*SDs*), along with correlations (Spearman’s), are presented in Table 1.

To respond to RQ1 (i.e., how common loneliness and ostracism are among five-year-olds based on ECEC teacher observations), the average mean score for loneliness, comprising two items, was recoded into a 4-point Likert scale, to align with ostracism that comprise one item only. As for RQ2, a person-centered approach was utilized, and children were divided into four groups, based on different combinations in the frequency of loneliness and ostracism. To do this, the 4-point Likert scales for the frequency of loneliness and ostracism were transformed into dichotomous ones, with responses from 1 (“hardly ever”) to 2 (“rarely”) coded as “Rarely” (1), and responses from 3 (“often”) to 4 (“very often”) coded as “Frequently” (2). A combination variable was then created (based on the dichotomous loneliness and ostracism measures) representing the interplay between these threats to belonging—rarely lonely/rarely ostracized (1); frequently lonely/rarely ostracized (2); frequently lonely/frequently ostracized (3); and rarely lonely/frequently ostracized (4) (for a similar procedure to explore cross-combinations of measures, see Grigorian et al., 2024.)

To respond to RQ3 (i.e., to evaluate differences in children’s social-emotional functioning, vocabulary, gender and language background among the four groups), multinomial logistic regression was conducted using *group* as the dependent variable and *vocabulary*, *peer problems*, *emotional problems*, *conduct problems*, *hyperactivity*, *prosocial behavior*, *gender* and *language background* as independent variables. The multinomial function from R’s *nnet* package (Venables & Ripley, 2002) was used to conduct the analysis. By changing the reference level defined in the model, pairwise odds ratios were extracted to allow comparisons between groups and variables.

### 3. Results

#### 3.1. Prevalence of Children’s Loneliness and Ostracism Based on Teacher Observations

Loneliness and ostracism were first examined separately through a variable-centered approach. The percentages for children identified as lonely or ostracized from hardly ever to very often are presented in Fig. 1. Based on ECEC teacher observations, about two-thirds of five-year-olds were hardly ever ostracized (i.e., left out of play), and half of the children were hardly ever lonely (i.e., appearing lonely, having difficulties finding friends). However, about one-sixth of the children were evaluated as having experienced loneliness often to very often, and close to one-tenth as having experienced ostracism often to very often.

#### 3.2. Groups of Children Based on Loneliness and Ostracism as Observed by Teachers

The following groups were formed based on the different combinations in the frequency of children being lonely and ostracized, as

observed by teachers: 1) *Rare threats* (80.2%, *n* = 24 988) (i.e., rarely lonely–rarely ostracized), 2) *Frequently lonely* (10.5%; *n* = 3,283) (i.e., frequently lonely–rarely ostracized), 3) *Accumulated threats* (7.7%, *n* = 2,386) (i.e., frequently lonely–frequently ostracized), and 4) *Frequently ostracized* (1.6%, *n* = 512) (i.e., frequently ostracized–rarely lonely).

#### 3.3. Differences in Children’s Social-Emotional Functioning, Vocabulary, Gender, and Language Background Among the Four Groups

The mean scores and *SDs* for the continuous variables in the four groups are presented in Table 2. The overall model was a better fit compared to a null model  $\chi^2(24) = 17632.01, p < .001$ , with McFadden pseudo-*R*<sup>2</sup> of 0.42. Table 3 shows how much each variable uniquely contributed, along with the pairwise odds ratios for each group and all variables. The groups differed in all variables investigated, except for gender. Peer problems most strongly predicted belonging to a group, followed by emotional problems (see Fig. 2).

Larger vocabulary predicted a slightly lower probability of belonging to the Accumulated threats group (ORs = 1.02–.98, *ps* < .05). The other groups did not differ in terms of vocabulary. Peer problems varied in all group comparisons except for the Frequently lonely vs. Frequently ostracized groups. Compared to the Rare threats group, the Frequently lonely group, and the Frequently ostracized group had over twice the odds of higher peer problems (ORs = 2.14, 2.21, *ps* < 0.001), and the Accumulated threats group had over three times the odds of higher peer problems (OR = 3.21, *p* < 0.001). Furthermore, more peer problems predicted belonging to the Accumulated threats group over both the Frequently lonely and the Frequently ostracized groups (ORs = 1.46, .67, *ps* < .001).

Emotional problems varied in all group comparisons, except for the Frequently lonely and Accumulated threat groups. Compared to the Rare threats group, the Frequently lonely and Accumulated threats groups had almost 1.4 times the odds of higher emotional problems (ORs = 1.38, 1.40, *ps* < 0.001), and the Frequently ostracized group had just 1.1 times the odds of higher emotional problems (OR = 1.10, *p* = 0.001). Additionally, children with higher emotional problems had lower odds of belonging to the Frequently ostracized group compared to the Frequently lonely or Accumulated threat groups (ORs = .80, .79, *ps* < .001).

Conduct problems and hyperactivity varied, with similar differences between the groups. Interestingly, compared to the Rare threats group, the Frequently lonely and Accumulated threats groups had lower odds of higher conduct problems (ORs = 0.86, 0.92, *ps* < .001) and hyperactivity (ORs = 0.92, 0.97, *ps* < .001). Since the means for conduct problems and hyperactivity are actually lowest in the Rare threats group and there are no very high correlations between the variables, this suggests a suppression effect. Only the Frequently ostracized group had higher odds for these variables (ORs = 1.09, 1.11, *ps* < .01). Furthermore, conduct problems and hyperactivity predicted belonging in the Accumulated threats group over the Frequently lonely group (ORs = 1.07, 1.06, *ps* < .01), to the Frequently ostracized over the Frequently

**Table 1**  
Descriptive Statistics and Correlation Matrix for the Measures.

Measures	Descriptive statistics				Correlations <sup>3</sup>							
	Min	Max	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.
1.Loneliness <sup>1</sup>	1	4	1.59	0.73	-	.73**	-.17**	.73**	.46**	.14**	.13**	-.35**
2. Ostracism	1	4	1.46	0.70		-	-.18**	.67**	.35**	.25**	.24**	-.34**
3. Vocabulary <sup>2</sup>	0	30	19.3	6.50			-	-.20**	-.08**	-.10**	-.20**	.15**
4. Peer problems	0	10	1.73	1.93				-	.39**	.26**	.27**	-.43**
5. Emotional problems	0	10	1.23	1.62					-	.17**	.11**	-.21**
6. Conduct problems	0	10	1.26	1.85						-	.65**	-.56**
7. Hyperactivity	0	10	3.39	3.11							-	-.49**
8. Prosocial behaviors	0	10	6.79	2.33								-

Note. <sup>1</sup>Average score of two items (the child appears lonely; it is difficult for the child to find friends), <sup>2</sup>Number of words in the test, <sup>3</sup>Spearman’s correlations with a two-tailed *p* < .05 level of significance were used \*\* < .001.

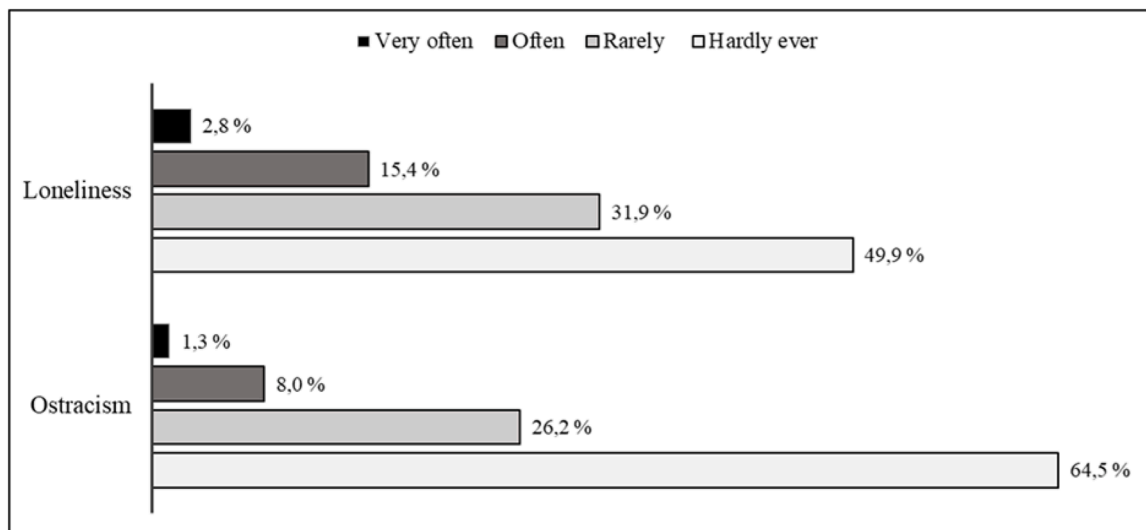


Fig. 1. Prevalence of Children's (N = 31 169) Loneliness and Ostracism Based on Teacher Observations.

Note. Loneliness (two items: the child appears lonely, and it is difficult for the child to find friends); Ostracism (one item: the child is left out of play).

Table 2

Means and Standard Deviations for the Variables in the Formed Groups and Distributions Based on Gender and Language Background.

Variables	Rare threats Mean (SD)	Frequently lonely Mean (SD)	Accumulated threats Mean (SD)	Frequently ostracized Mean (SD)
Vocabulary	19.72 (6.26)	18.21 (6.82)	15.95 (7.27)	17.65 (7.11)
Peer problems	1.13 (1.32)	3.59 (1.77)	5.28 (2.00)	3.66 (2.03)
Emotional problems	0.94 (1.32)	2.40 (1.99)	2.68 (2.14)	1.68 (1.76)
Conduct problems	1.13 (1.71)	1.34 (1.95)	2.16 (2.41)	2.84 (2.60)
Hyperactivity	3.18 (3.00)	3.45 (3.11)	5.01 (3.39)	5.92 (3.52)
Prosocial behavior	7.13 (2.17)	5.78 (2.30)	4.85 (2.48)	5.42 (2.57)
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Girls	11,703	1,396	839	175
Boys	11,447	1,578	1,288	288
Official language	21,162	2,592	1,646	387
Other language	1,988	382	481	76

Note. Gender and language background, missing information n = 2,455.

lonely group (ORs = 1.26, 1.21, ps < .001), and to the Frequently ostracized over the Accumulated threats group (ORs = 1.18, 1.14, ps < .001).

Prosocial behavior varied in all group comparisons except for Rare threats vs. Frequently ostracized and Frequently lonely vs. Accumulated threats. Compared to the Rare threats group, higher prosocial behavior was linked to lower odds of belonging to either the Frequently lonely or Accumulated threats group (ORs = 0.86, 0.88, ps < .001). Moreover, higher prosocial behavior predicted belonging to the Frequently

ostracized group over both the Frequently lonely (OR = 1.18, p < .001) and Accumulated threats group (OR = 1.15, p < .001). Children's language background being an official language of Finland predicted lower odds of belonging to groups other than the Rare threats group (ORs = 0.57–0.83, ps < .05). Further, language background other than the official languages predicted belonging to the Accumulated threat groups over the Frequently lonely group (OR = 0.68, p = <.001).

Table 3

Unique Contributions of Each Variable in the Overall Model and Pairwise Odds Ratios for Each Group and All Variables.

Variable	$\chi^2$	p	$\Delta$ McFadden R <sup>2</sup>	Group comparisons					
				1v2	1v3	1v4	2v3	2v4	3v4
Vocabulary	20.7	.0001	.006	.99	.98***	1.00	.98**	1.00	1.02*
Peer problems	7218.6	<.0001	.171	2.21***	3.21***	2.14***	1.46***	.97	.67***
Emotional problems	762.2	<.0001	.018	1.38***	1.40***	1.10**	1.02	.80***	.79***
Conduct problems	103.6	<.0001	.002	.86***	.92***	1.09**	1.07**	1.26***	1.18***
Hyperactivity	113.3	<.0001	.003	.92***	.97***	1.11***	1.06***	1.21***	1.14***
Prosocial behavior	166.0	<.0001	.004	.86***	.88***	1.01	1.03	1.18***	1.15***
Gender	0.20	.9810	.000	.99	1.02	.99	1.03	1.00	.97
Language background	37.4	<.0001	.001	.83*	.57***	.72*	.68***	.86	1.27

Note. <sup>1</sup>Rare threats, <sup>2</sup>Frequently lonely, <sup>3</sup>Accumulated threats, <sup>4</sup>Frequently ostracized. \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05. Significances calculated after Benjamini-Hochberg correction.

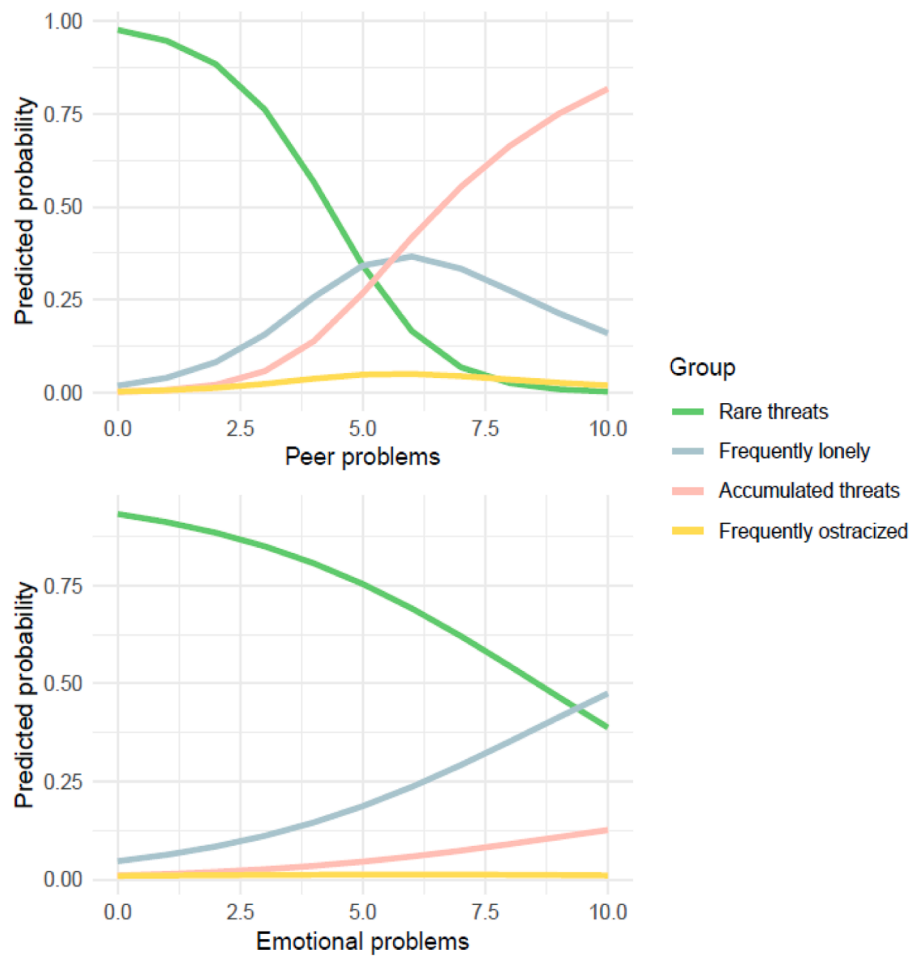


Fig. 2. Peer and Emotional Problems in the Loneliness and Ostracism Groups.

#### 4. Discussion

The aim of the study was first to explore how common loneliness and ostracism are among five-year-olds, as observed by teachers; second, to form groups of children based on their different combinations (i.e., rarely/frequently lonely/ostracized); and third, to examine the extent to which children in these formed groups differ concerning their vocabulary, teacher-reported social-emotional functioning, gender, and language background. About one-sixth of children were evaluated as lonely (i.e., appearing lonely, having difficulties finding friends) and close to one-tenth ostracized (i.e., left out of play) often to very often. For a person-centered understanding, subgroups of children were formed based on different combinations of threats to belonging observed by the teacher: 1) Rare threats (80.2%); 2) Frequently lonely (10.5%); 3) Accumulated threats (7.7%); and 4) Frequently ostracized (1.6%). The groups differed in vocabulary, social-emotional functioning, and language background, but not gender.

##### 4.1. Rare Threats: Low Social-Emotional Problems

About 80% of children were identified as being only rarely lonely and ostracized. As expected, children with low peer or emotional problems had the highest probability of belonging to this group. The findings thereby point to a trend in which a lack of clear threats to meet the need to belong (i.e., loneliness, and ostracism) is associated with lower levels of social and emotional difficulties among young children. This aligns with theoretical understanding (Baumeister & Leary, 1995; Vansteenkiste et al., 2020) and previous research findings among children (Qualter & Munn, 2002) and adolescents (Kiuru et al., 2024).

Children's high prosocial behavior was linked to a higher probability of belonging to this group compared to either the Frequently lonely or Accumulated threats groups. Social-emotional skills may help the child to be included by others, thereby creating a strong basis for practicing these skills even further (Kuutti et al., 2021; Stangeland, 2017). They can also help build positive peer relationships (Coelho et al., 2017) and thereby meet the need to belong (Allen et al., 2021). However, loneliness and ostracism might remain hidden from the teacher if the child behaves according to expectations (e.g., prosocial behavior) and does not indicate clear signs of difficulty (e.g., emotional problems). For example, children's coping mechanisms in relation to being left out by peers differ, with some children even trying to cover up their related feelings of hurt (Nergaard, 2020). A child's withdrawal may also be falsely interpreted as their own wishes (Sadownik, 2018). Thus, some children in this subgroup were likely to be ostracized or lonely more often than observed by the teacher.

Children with language backgrounds other than the official languages of Finland had a lower probability of belonging to this group, even after including vocabulary in the model. This points to a trend in which they are at a higher risk of experiencing loneliness, ostracism, or both compared to their peers. This aligns with previous research suggesting that children with diverse cultural and linguistic backgrounds may not be able to enter peer activities in ECEC on equal terms with their peers (Sadownik, 2018).

##### 4.2. Frequently Lonely: Higher Emotional but Not Externalizing Problems

About one-tenth of the children were identified as frequently lonely. Emotional problems increased a child's probability of belonging to this

group compared to the Rare threats and Frequently ostracized groups, while the children in this group had a lower probability of conduct problems and hyperactivity compared to the Accumulated threats and the Frequently ostracized groups. This may suggest that teachers are more likely to interpret internalizing difficulties (e.g., withdrawn behaviors; see Geukens et al., 2021) as signs of loneliness.

Children in this group were identified as only rarely ostracized. Some children can, however, feel as if they are ‘invisible’, but associations between the child’s emotional problems (e.g., sadness) and being ostracized may go unnoticed. For example, implicit forms of ostracism (e.g., peers pretending that they did not hear what the child said) (Lundström et al., 2022) may be difficult to observe. Moreover, while some children invoke a teacher’s help in situations of peer exclusion, others may keep their difficulties to themselves (Peltola et al., 2023). This highlights the importance of sensitively observing children’s day-to-day peer interactions and play. Having the teacher as a safe adult may further encourage children to share their worries (Galanaki, 2004; Galanaki & Vassilopoulou, 2007).

#### 4.3. Accumulated Threats: Highest Peer Problems and Lower Scores in Vocabulary

Slightly less than eight percent of all children were identified as frequently lonely and ostracized. Children with high peer problems were likelier to belong to this group than the other three groups. Together with children in the Frequently lonely group, these children had a higher probability of emotional problems compared to the Rare threats and Frequently ostracized groups. Thus, there is a need to ensure that the support provided covers the intertwining social and emotional difficulties, and that interventions address the exclusionary behavior of the peer group (Harrist & Bradley, 2003). If children’s needs are not sufficiently met, there is a danger that fewer opportunities to interact with peers, maladaptive behaviors when striving to be seen and heard, and resulting distress will mutually reinforce each other over time (Baumeister & Leary, 1995; Wölfer & Scheithauer, 2013).

Moreover, children who scored high in vocabulary were less likely to belong to this group than the other three groups. This finding aligns with the understanding that lower vocabulary (Menting et al., 2011; Qualter & Munn, 2002) may become associated with difficulties in being included by peers and achieving social goals, including positive peer relationships, meaningfully. On the other hand, children who are left out of play are likely to have fewer opportunities to practice these skills. Moreover, children with a language background other than the official languages of Finland had a higher probability of belonging to this group over the Frequently lonely group, indicating a higher likelihood of a combination of ostracism and loneliness. More research is needed on the experiences of young children with diverse linguistic and cultural backgrounds concerning their experiences in ECEC, including the quality of their peer relationships (Tuukkanen, 2025).

#### 4.4. Frequently Ostracized: Highest Probability for Conduct Problems and Hyperactivity

The frequently ostracized but only rarely lonely children constitute a group—although small in percentage—that reveals the complexity underlying these threats to belonging and their identification. Children in this group had the highest probability of conduct problems and hyperactivity. This finding aligns with research suggesting that school-aged children with hyperactivity/inattention (Spender et al., 2023) and ECEC-aged children with low self-regulation (Kuutti et al., 2021) may be at higher risk of peer social exclusion. The likelihood of externalizing problems being higher among children in this group (instead of the Frequently lonely or Accumulated threat groups) implies that teachers may not associate externalizing difficulties with loneliness. This is even though loneliness, as well, can be associated with both internalizing and externalizing difficulties (e.g., Ladd & Burgess, 1999).

Interestingly, higher prosocial behavior predicted belonging to this group over the Frequently lonely and Accumulated threats groups. Combined with the highest probability for conduct problems, the findings might reflect children’s various tendencies to react in situations where they are ostracized. While some children, at least at first, attempt to engage in prosocial behaviors, the frustration and emotional hurt resulting from not being included may strengthen some children’s externalizing difficulties as they try to be seen and heard, in one way or the other (Baumeister & Leary, 1995; Wölfer & Scheithauer, 2013).

Being ostracized (i.e., excluded, or ignored) by peers can evoke a range of negative emotions in young children, including anxiety, sadness, and anger, as well as experiences of being abandoned and unfairly treated (Nergaard, 2020). If this hurt remains hidden behind the more visible externalizing difficulties (e.g., conduct problems), there is a risk for peers’ (and even adults’) reactive and, at worst, exclusionary responses. Specific sensitivity is thus needed to ensure that children whose behaviors are experienced as challenging, get to experience being warmly encountered—to help them feel included, accepted, and supported.

#### 4.5. Individual Encountering of Each Child and Building Inclusive Environments

Our findings raise practical implications for the basis of developing pre- and in-service teacher training and for strengthening inclusive practices within ECEC settings, which can be summarized as follows: 1) Individual encountering of each child, as there is no one-size-fits-all solution to meeting the need to belong nor to tackle its related threats (Tay-Lim & Gan, 2013; Vansteenkiste et al., 2020) and 2) Creating inclusive, safe environments where children with diverse backgrounds feel accepted, are included in play, and can meet their need to belong (Jefferson, Barreto, Verity, & Qualter, 2023; Kangas, Lastikka, & Arvola, 2023; Koivula & Hännikäinen, 2017; Nergaard, 2020).

Our findings point to a trend in which teachers more likely associate emotional problems with loneliness (compared to ostracism) and conduct problems and hyperactivity with ostracism (but not loneliness). It is important to increase awareness of the externalizing signs through which, in addition to internalizing ones, loneliness can be manifested: for example, aggressive behaviors that might reflect underlying feelings of sadness, especially among young children (Qualter & Munn, 2002). Moreover, increasing awareness of the subtle ways in which the child can be ostracized by peers, as well as ostracism that is not connected to behavioral difficulties, is important. Children can be excluded by their peers for diverse reasons and in diverse ways (Harrist & Bradley, 2003; Lundström et al., 2022), with some forms of exclusion and ignoring not intentional for other children (Sadownik, 2018).

Teachers need expertise to support children’s sense of belonging in increasingly diverse ECEC settings. For example, teachers’ emotional support forms a critical foundation for building supportive contexts for children’s social-emotional development, including promoting prosocial behaviors (Pakarinen, Lerkkanen, & von Suchodoletz, 2020). Teachers also need awareness of children’s diverse needs for support, and skills to sensitively scaffold peer interactions (Kangas et al., 2023). Equally important is targeting discriminatory and exclusionary practices and cultivating children’s preparedness to include their diverse peers (Kurki et al., 2017; Lundström et al., 2022). Engaging meaningfully in joint activities facilitates the sense of belonging of children, and it is critical to ensure that all children have the skills, including language and social-emotional skills, that help participate in play and other peer activities (Sadownik, 2018). Juutinen et al. (2023) have further highlighted the need to approach belonging as holistic and relational—how it can be built even without a shared language.

A meta-analysis by Eccles and Qualter (2021) suggests that among effective interventions for addressing loneliness are those that focus on enhancing children’s social-emotional skills. At best, these skills are fostered as part of everyday practices, including opportunities to

collaborate and play with diverse peers and encouragement and support to try different roles while doing so. Teachers also have a vital role in conveying clear social rules on how to interact with peers (Galanaki, 2004), and in helping children understand the rationale behind these rules, for example, through fairy tale reading and role playing (Harrist & Bradley, 2003). Establishing play, inviting other peers, and joining an existing play group requires children to adopt strategies that are accepted by the peers. Awareness of the rules that children themselves may have (e.g., who can take part in play), may further help tackle barriers that some children face to being included in play (Ólafsdóttir et al., 2017).

Children should not be left alone in solving challenging situations with their peers (Kurki et al., 2017; Lundström et al., 2022). Children may, for example, need the teacher's help to interpret one another more accurately and empathetically (Coelho et al., 2017; Tay-Lim & Gan, 2013) and support to help them learn to resolve conflicts constructively (Kurki et al., 2017). This might be of specific importance when someone is being ostracized, or if children do not get along with one another, to help create a positive climate (Harrist & Bradley, 2003). Talking about loneliness and ostracism with children, such as how it feels to be left out and what everyone could do to prevent and tackle these situations, may further help build empathy, prevent exclusionary behaviors, and foster children's ability to listen to others and verbalize their own feelings (Harrist & Bradley, 2003).

Sufficient, well-allocated resources are vital for ensuring that teachers have real opportunities (e.g., time) to encounter and support children individually and as part of the group as well as to sensitively facilitate the participation and social inclusion of all children (Galanaki, 2004; Nergaard, 2020). Well-functioning collaboration with multi-professional teams and families – characterized by shared goals and respect – should also not be forgotten. This kind of collaboration may not only help prevent difficulties, but also solve situations when concerns are raised about the child (Pihlainen et al., 2020; Salo, Sorkkila, Upadhyaya, & Aunola, 2025).

#### 4.6. Limitations and Future Research

The study has its limitations. First, the scales applied for loneliness and ostracism were brief: ostracism was assessed using a single item, and loneliness using two items. Although this is not uncommon, future studies might consider adopting a higher number of items to allow for more fine-grained analyses. Second, when relying on teacher observations, several aspects need to be recognized. Challenges include teachers interpreting children's interactions from an adult perspective, and their interpretations may be biased (Wu et al., 2001). For example, teacher-child relationship quality may influence the accuracy of a teacher's evaluation of a child's loneliness and ostracism (Geukens et al., 2021). Additionally, adults can be seen as "outsiders" of peer interactions and relationships (Wu et al., 2001). However, there are several advantages to teacher reports. They allow for more manageable collection of large-scale data compared to other techniques, although teacher fatigue should also be considered. Teacher reports also avoid concerns related to using negative peer sociometric choices or asking sensitive and potentially hurtful questions of young children. Furthermore, teachers are positioned to observe children in a variety of situations (Wu et al., 2001).

In the future, qualitative studies where teachers would be encouraged to verbalize indicators through which they observe children's loneliness and ostracism would contribute to a more nuanced understanding of these phenomena. It would further be of value to include more than one adult's observations of the same children (e.g., another ECEC teacher or staff member/parents, or researchers). This is because different adults in a child's life may possess unique, complementary perspectives on the child's situation. Given the highly subjective nature of these phenomena, it is particularly important to also include a child's own perspective. Including several perspectives would help determine

whether differences identified in children's social-emotional functioning, vocabulary, and language backgrounds across the subgroups are due to relying on teachers as sources of information or whether similar patterns would emerge when using different information sources.

Finally, this study was conducted in a Finnish cultural and educational context. Studies are needed in other such contexts because there may be differences in how group activities and teacher education are organized as well as in teachers' opportunities and competencies to observe signs of children's loneliness and ostracism. Longitudinal studies would further contribute to understanding the different trajectories of loneliness and ostracism. In this current study, the subgroups were labeled using concepts (e.g., "lonely" and "ostracized") that, although helpful for illustrating the findings, do not fully capture the dynamic and socially embedded nature of loneliness and ostracism. In real-life settings, such labels (e.g., "ostracized") can risk seeing vulnerabilities as static and attached to an individual child (Salo, 2022). Moreover, challenging interaction situations with peers are, to a certain extent, a part of life and can provide an opportunity for ECEC professionals to support children's resilience and sense of belonging (Pihlainen et al., 2020). Future studies should include factors that pertain to context (e.g., ECEC, family, and their collaboration) and process quality (e.g., teachers' emotional support) to better unveil the multilevel factors contributing to children's experiences of loneliness and ostracism.

## 5. Conclusion

This study provides unique insights into the diverse patterns of children's loneliness and ostracism observed by ECEC teachers. Based on teacher observations, loneliness and ostracism seem to be rather common among five-year-old children. Differences were identified between groups of loneliness and ostracism in children's social-emotional functioning, vocabulary, and language background. Our findings point to a trend in which children's diverse support-needs must be met to ensure that all children can meaningfully access play and establish satisfactory peer relationships. Increasing ECEC teachers' awareness of and sensitivity to observing situations where identifying loneliness and ostracism may be especially challenging, is important: for example, children being ostracized without clearly exhibiting externalizing difficulties, loneliness that may remain hidden behind conduct problems, or hyperactivity that may more easily catch adults' attention. It is vital to ensure high-quality teacher training that equips ECEC teachers with the knowledge and competencies to observe and address loneliness and ostracism at an early stage. Building inclusive, emotionally supportive environments, and developing all children's social-emotional skills is critical, as well, to ensure that every child can be meaningfully included and learn to positively include their diverse peers. Finally, ECEC teachers must have sufficient resources that will enable them to have individual encounters with children and to carefully observe and sensitively guide children's day-to-day peer interactions. These are vital building blocks for a socially sustainable ECEC where every child can access play, build satisfactory peer relationships, and learn to positively include their diverse peers.

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## CRedit authorship contribution statement

**Anne-Elina Salo:** Writing – original draft, Visualization, Methodology, Conceptualization. **Katja Upadyaya:** Writing – review & editing, Methodology. **Mirjam Kalland:** Writing – review & editing, Project administration. **Sami Hyttinen:** Formal analysis, Methodology, Visualization, Writing – review & editing. **Katariina Salmela-Aro:** Writing – review & editing, Project administration. **Marja-Kristiina Lerkkanen:** Writing – review & editing, Project administration.

## Declaration of competing interest

The authors declare that they have no conflicts of interest in regard to this work.

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## Data availability

The data are owned by the Finnish Ministry of Education and Culture until the end of the trial, when they will be transferred to the National Archives. At that point, they will become publicly available for application.

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