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Caregiver/child ratio and group size in Scandinavian Early Childhood Education and Care (ECEC): a systematic review of qualitative research

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Abstract

The aim of the present systematic review was dual: 1) to systematically identify and present all qualitative research exploring caregiver/child ratio and group size in Scandinavian Early Childhood Education and Care (ECEC) for children aged 0–5 years, and 2) to synthesize the results from included studies in order to explore how the structural aspects of the ECEC setting (ratio and group size) are perceived to influence the everyday life experiences, development, and wellbeing of children. All studies exploring caregiver/child ratio and group size in ECEC in Scandinavia using qualitative methods were included. Systematic electronic searches were carried out in Socindex, PsycINFO, ERIC, Academic Search Premier, Science Citation Index, Sociological Abstracts, Cristin, Forskningsbasen, Libris, Norart, Swemed, and BIBSYS between September 2020 and February 2022. Furthermore, hand searches and snowballing strategies were used to identify relevant studies. The final selection included 12 studies in the review. The quality of all included studies was assessed independently by two review authors. After critical appraisal, the thematic analysis was conducted using data from 11 studies as one included study was deemed to be of insufficient quality. Findings within the thematic synthesis highlight ways in which group size and caregiver/child ratio influence caregiver/child interactions, children's interactions, behavior, development, and learning as perceived by caregivers and observers and the caregivers' perceptions on what constitutes optimal group size and caregiver/child ratio in ECEC. No study included in the review used interviews with children or parents, and thus future research is needed in order to explore children's perspectives on these central structural characteristics of the ECEC setting.

Keywords: Scandinavian ECEC, caregiver/child ratio, group size, process quality, learning, child development

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Introduction

Early childhood education and care (ECEC) has long been a staple of Scandinavian welfare societies, designed to facilitate the integration of women into the labor market and to ensure the development and wellbeing of all children, regardless of family background. Enrollment rates in ECEC are high, with roughly around 50–60% attendance among children aged 0–2 years old and virtually universal enrollment among the 3–5 year olds (> 90% in both Denmark, Norway, and Sweden, OECD, 2020). On average, the youngest Scandinavian children spend 30–35 hours per week in ECEC (OECD, 2020); an overall average for children ages 3–5 years old is not available, but estimates from Denmark point to an average day in ECEC of 7.5 hours (Boerneradet, 2020). Historically, the Scandinavian ECEC tradition has been inspired by social pedagogical thinking, with a focus on creating homelike environments where care, play, and socialization are emphasized. This particular way of designing daycare, encapsulated by the term “the Nordic tradition” (Greve, 2014), is still a distinct feature of Scandinavian ECEC, even though an increased focus on learning is also seen in recent ECEC curricula across the Scandinavian countries. With most Scandinavian children below school age attending ECEC for a substantial number of hours each week, it is vitally important that the conditions experienced by children in these settings facilitate the positive and full development of each child. The importance of early life experiences on a child’s future development and wellbeing is widely recognized and cannot be underestimated, as a future healthy development is built on the foundations established early on in life (Heckman, 2006, 2007; High, 2008). As most children in Scandinavia spend the majority of their hours awake in non-parental care from a very early age, the quality of care they receive within ECEC settings is of vital importance. This is found especially to be the case in Denmark. According to Eurostat, Denmark holds, by far, the EU record regarding toddlers’ nursery attendance. 66% of the 0 to 2 year olds in Denmark spend 30 hours or more a week in an ECEC. Portugal is second with 46% and the EU-average is 17% (Tjek det, 2022). However, what are the necessary structural prerequisites for creating quality ECEC environments that allow all children to grow and flourish? This question is widely discussed in the Scandinavian context, with a special emphasis placed on whether current caregiver/child ratios and group sizes in ECEC are sufficient in terms of providing care and learning opportunities for all children, regardless of age, background and special needs (Svinth & Henningsen, 2021).

Caregiver/child ratio and group size in Scandinavian ECEC

When compared to other European countries, adult/child ratios are generally higher and group sizes generally smaller than average in Scandinavian ECEC based on the available statistics (European Education and Culture Executive Agency, Eurydice, 2019). In Sweden and Iceland, there is no official regulation on adult/child ratio, and in 2019 the average number of children per full-time member of staff was 5,2 in Swedish preschools (Eurydice, 2022a) and 5 in Icelandic ECEC (Eurydice, 2022b). In Norway, official regulations stipulate that for children below the age of 3 years, there must be a minimum of 1 staff member per three children and for children aged 3 years and above, a minimum of 1 staff member per six children (Eurydice, 2022c). In Finland, the maximum number of children per adult is regulated by law. In Finnish ECEC centers, the ratio is 1:4 for children under three years, and 1:7 for

children aged three or more. The number of children present in a group cannot exceed the number of children allowed for three adults (Eurydice, 2022d). The official average ratio in Danish preschools for 3–5-year-olds was 6.1 in 2019. In 2020, the official average was lower: 5.8, however this may be influenced by the corona pandemic (Danmarks Statistik, 2022).

In Denmark, Norway, and Sweden, the official average ratio may include, for example, preschool managers, cleaners, and other staff that may not directly care for the children, in addition to personal caregivers for specific children with special needs, and the average does not take into account, for instance, sickness or holiday absences for neither caregivers nor children, nor does it take into account that opening hours in ECEC are longer than the average work week for full time staff. Thus, there is an ongoing debate and controversy on what the actual ratios and group sizes are, as parents and caregivers claim that the official statistics do not reflect the actual number of caregivers available to all children throughout opening hours. This controversy is exemplified by the formation of the movement of parents and other stakeholders in Denmark called: "Hvor er der en voksen?" (in English: Is there an adult somewhere?).¹ The main purpose of this movement is to persuade municipalities and the national government to introduce and adhere to minimum requirements regarding caregiver/child ratios. In Denmark, the public debate and support for this movement led to new legislature regarding minimum requirements for the caregiver/child ratio in 2020.² In Sweden, a movement of caregivers in preschools known as "forskoleupproret" (in English: The Preschool Rebellion) has formed with the stated purpose of achieving smaller group sizes and lower adult/child ratios in ECEC³, and similarly in Norway, a movement known as "Barnehageopproret" (in English: The Preschool Rebellion)⁴ consisting of caregivers and parents exists with the purpose of lobbying to propose smaller group sizes and fewer children per caregiver in ECEC and to change the way in which adult/child ratios are calculated in the official statistics.

The controversy regarding measurement of adult/child ratio and quality in ECEC is also reflected in academic circles in Scandinavia. A number of scholars in the fields of educational psychology and pedagogy are highly critical of defining quality based on standardized international measures, such as ECERS or ITERS. The main arguments against these measures are as follows. Firstly, they are developed and embedded within a cultural context that is not comparable to the way in which Scandinavian ECEC centers operate. Secondly, the measures do not directly tap into the child's perspective and they assume that there is a universal relationship between structural variables and child outcomes, ignoring the unique characteristics of specific locally and culturally embedded ECEC centers and child populations. Thus, the very concept of what constitutes quality in ECEC is not unanimously agreed upon within the Scandinavian context (Svinth & Henningsen, 2021). Conceptually, ECEC quality can be defined by both structural and process characteristics (Vermeer et al., 2016). Structural characteristics include the caregiver/child ratio and group size (Slot et al., 2015), whereas process characteristics entail, e.g. caregiver sensitivity and quality of child-caregiver interaction (de Schipper et al., 2006). Both structural and process characteristics have been linked to positive child outcomes such as decreased levels of anxiety, aggressive behavior and distress, greater social competence, and better receptive and expressive language skills in a number of international studies (Auger et al., 2014; Burchinal et al., 1996; 2002; Howes et al., 1992). However, some studies have also failed to find a positive

association between, e.g. a higher caregiver/child ratio and positive child outcomes (Dunn, 1993; Mashburn et al., 2008) or have reported mixed results (Howes, 1997).

Consequently, there is no clear answer to the question of how structural characteristics such as caregiver/child ratio and group size influence children. It may be hypothesized that children are negatively affected and experience a decrease in wellbeing and psychosocial adjustment if there are too few caregivers and too large child groups, however the current scientific knowledge base provides no clear cut answers. This uncertainty surrounding the impact of caregiver/child ratio and group size in ECEC poses a challenge to decision makers, administrators, practitioners, and parents. The current review therefore seeks to strengthen the knowledge base regarding these two central structural characteristics by providing a uniquely Scandinavian perspective on the issue which may serve as guidance when making decisions on what constitutes an appropriate caregiver/child ratio and group size in ECEC. With the focus on qualitative studies, we hope to be able to synthesize the ways in which different caregiver/child ratios and group sizes in ECEC are experienced by caregivers and children from a local, situated perspective.

Background

Theoretically, higher caregiver/child ratios (fewer children per caregiver) and smaller group sizes are hypothesized to increase both the extent and quality of caregiver/child interactions in daycare (Svinth & Henningsen, 2021). The younger the children, the more their development and well-being are assumed to be dependent on adequate, nurturing, and stimulating caregiver/child interactions. Thus, the extent and quality of caregiver/child interactions is by some scholars proposed to be the single most important determinant of child development and well-being in ECEC settings (de Schipper et al., 2006; Karoly, 1998; Lamb, 1998; Munton et al., 2002). A number of studies suggest that caregivers with fewer children in their care are more likely to be sensitive, responsive, warm, nurturing, and encouraging towards the children (Christoffersen et al., 2014). Furthermore, a higher caregiver/child ratio is associated with caregivers exhibiting more positive and less negative affect and providing more varied and developmentally appropriate activities for the children (Samuelsson et al., 2015). Conversely, previous studies suggest that when fewer caregivers are in charge of larger groups of children, caregivers become focused on managing and controlling the children's behavior (Ghazvini & Mullis, 2002). This leads to caregivers issuing more commands and corrections, exerting more negative control, and spending less time engaged in reciprocal conversations or playful interactions with the children (Howes et al., 1992). Furthermore, studies suggest that with lower ratios and higher group sizes, children experience more conflicts during free play situations, forcing caregivers to spend more time on acute problem solving (Eide et al., 2017; NICHD Early Child Care Research Network, 1996, 2000).

However, as previously mentioned, findings regarding the impact of caregiver/child ratio and group size are far from unequivocal, and a number of observational studies have failed to find significant positive associations between caregiver/child ratio and group size and process quality characteristics or child outcomes such as prosocial behavior and engagement in learning activities (Pessanha et al., 2007; Vermeer et al., 2008). An example of one such study is Pianta et al. (2005). This study was based on data from the National Center

for Early Development and Learning's Multi-State Pre-Kindergarten Study and examined the extent to which program, classroom, and teacher attributes of the program ecology predicted observed quality and teacher–child interactions in a sample of 238 classrooms representing 6 states' pre-kindergarten programs in the US. Quality was assessed observationally and the study concludes that child-staff ratio had no relation to quality.

Other systematic reviews on caregiver-child ratio and group size in ECEC

Perlman et al. (2017) conducted a systematic review and meta-analysis of child-staff ratio in early childhood education and care settings on child outcomes. The meta-analysis only included studies using a measure of children's receptive language as the outcome and the results were inconclusive. This review provides preliminary insights but results should be viewed with caution due to the low number of studies which could be used in the meta-analysis ($k = 3$) (Perlman et al., 2017). Furthermore, Carlsson et al. (2001) authored a knowledge overview of the impact of structural factors on daycare pedagogical quality, including both qualitative and quantitative studies, but this overview has not been updated since publication.

In a systematic review and meta-analysis of quantitative studies, two of the authors of the present review performed a series of meta-analyses of ratio and group size effects on measures of children's learning and literacy and process quality in ECEC (Dalgaard et al., 2022). A major finding was that there were very few international effect studies which met the inclusion criteria, pointing to the need for more experimental ECEC research on ratio and group size effects (Dalgaard et al., 2022).

The motivation for conducting the present review is based in the belief that a distinctly qualitative approach is necessary to understand the actual processes and dynamics underlying potential ratio and group size effects. If we are to gain a better understanding of how ratio and group size conditions shape ECEC quality, we must look at the lived experiences and perceptions of those children, practitioners, and parents, who spend their everyday lives in ECEC institutions.

Objectives

The aim of the present systematic review is to systematically identify and synthesize all qualitative studies exploring caregiver/child ratio and group size in Scandinavian ECEC, in order to explore in what ways these structural characteristics shape the everyday life experiences of children, caregivers, and parents.

Methods

Types of studies

We defined inclusion and exclusion criteria based on the suggested guidelines in the SPIDER tool (Cooke et al., 2012). **Sample:** eligible samples were defined as professional settings with paid caregivers or teachers enrolling children aged 0–5 years old, thus excluding informal care arrangements such as private babysitters. **Phenomenon of Interest:** Eligible studies had to explore issues of caregiver/child ratio and group size as they relate to child and caregiver experiences in Scandinavian ECEC. **Design:** we included all types of qualitative

studies that collected empirical data and provided descriptions of main methodological issues such as sampling, data collection procedures, and type of data analysis. **Evaluation:** eligible studies had to provide insights into the ways in which caregiver/child ratio and group size is perceived to influence children and the everyday life in ECEC as perceived by caregivers/teachers, children, parents, or independent observers. **Research type:** we included qualitative and mixed-methods studies.

Search methods for identification of studies

Relevant qualitative studies were identified through searches in electronic databases, governmental and grey literature repositories, Internet search engines, hand search in specific targeted journals, and citation tracking.

Electronic databases

We searched the following electronic databases: Socindex (through EBSCO), PsycINFO (through EBSCO), Econlit (through EBSCO), ERIC (through EBSCO), Teacher Reference Center (through EBSCO), Academic Search Premier (through EBSCO), Science Citation Index (through Web of Science), Social Science Citation Index (through Web of Science), Sociological Abstracts (through ProQuest), Christin (Norway), Forskningsbasen (Denmark), Libris (Sweden), Norart (Norway), BIBSYS/Oria.no (Norway), Swemed (Sweden). The search strings utilized to perform the searches contained aspects covering the population (children and caregivers), the context of the intervention (daycare), and the intervention (caregiver/child ratio and group size). An example of the search strategy used for the PsycINFO database on the EBSCO-host platform is shown in Table 1. The primary searches were carried out in September 2020 and updated in February 2022. We did not use any restrictions on the year of publication in any of the electronic searches.

Limitations of the search string

No restrictions were made on year of publication and study language was not limited to English, but also included Norwegian, Danish, and Swedish, with the intent of including as much relevant research as possible and being able to represent the Scandinavian qualitative research tradition in the field of daycare studies.

Searching other resources

In order to identify relevant grey literature (dissertations, theses, reports, working papers), we primarily utilized extensive searches on Google and Google Scholar. Furthermore, we searched specific resources for specified types of grey literature.

We searched the following resources for reports, dissertations, and general grey literature: Open Grey (<http://www.opengrey.eu/>), Google Scholar (<https://scholar.google.com/>), Google (<https://www.google.com/>), Social Care Online (<https://www.scie-socialcareonline.org.uk/>), NB-ECEC (<https://www.nb-ecec.org/>), DiVA (Digitala Vetenskapliga Arkivet), Bibliotek.dk, Dissertations & Theses Global (through ProQuest), EBSCO Open Dissertations (through EBSCO), Skolporten (skolporten.se), Social Science Research Network (<https://www.ssrn.com/index.cfm/en/>).

Table 1. Search string example.

Search	Terms
S13	S3 AND S8 AND S12
S12	S9 OR S10 OR S11
S11	AB (caretaker* OR teacher* OR staff* OR caregiver* OR adult*) AND AB (ratio*)
S10	AB ("group size*" OR "class size*")
S9	TI ("group size*" OR "class size*" OR ratio*)
S8	S4 OR S5 OR S6 OR S7
S7	AB (care N2 (center* OR centre* OR day* OR child*))
S6	TI (care N2 (center* OR centre* OR day* OR child*))
S5	AB (preschool* OR "non parental" OR kindergarten* OR nurser* OR "early childhood education and care")
S4	TI (preschool* OR "non parental" OR kindergarten* OR nurser* OR "early childhood")
S3	S1 OR S2
S2	AB (Infant* OR toddler* OR child* OR pupil* OR student* OR newborn* OR neonate* OR baby* OR babies)
S1	TI (Infant* OR toddler* OR child* OR pupil* OR student* OR newborn* OR neonate* OR baby* OR babies)

Search for existing systematic reviews

We searched for existing systematic reviews using the following resources: Centre for Reviews and Dissemination Databases (<https://www.crd.york.ac.uk/CRDWeb/>), EPPI-Centre Systematic Reviews—Database of Education Research (<https://eppi.ioe.ac.uk/webdatabases/SearchIntro.aspx>), and Evidensbasen (The Evidence Base) <https://dpu.au.dk/forskning/dansk-clearinghouseforuddannelsesforskning/evidensbasen/>.

Hand searches

23 journals were hand-searched for articles published within the last two years: *Scandinavian Journal of Educational Research*, *Nordic Studies in Education*, *European Early Childhood Education Research Journal*, *Early Child Development and Care*, *Early Childhood Education Journal*, *Journal of Early Childhood Research*, *International Journal of Early Childhood*, *International Research in Early Childhood Education*, *Contemporary Issues in Early Childhood*, *Journal of Early Childhood Teacher Education*, *Child Care in Practice*, *Childhood*, *American Educational Research Journal*, *Learning Environments Research*, *Child Development*, *Developmental Psychology*, *Early Childhood Research Quarterly*, *Early Education and Development*, *Tidsskriftet Barn*, *Tidsskrift for Nordisk Barnehageforskning*, *Paedagogisk Psykologisk Tidsskrift*, *Paideia*, *Nordisk Tidsskrift for Pedagogikk og Kritik*.

Citation tracking

We checked reference lists of included primary studies for potential additional studies.

Screening

Under the supervision of review authors, two review team assistants independently screened titles and abstracts to exclude studies that were clearly irrelevant. Studies considered eligible by at least one assistant or studies where there was insufficient information in the title and abstract to judge eligibility were subsequently retrieved in full text. The full texts were screened independently by two review team assistants under the supervision of the review authors. Any disagreement of eligibility was resolved by the review authors. We used EPPI-Reviewer 4 for reference storage and management.

Critical appraisal of included studies

All included studies were independently appraised by two review authors in order to assess whether or not they should be included in the thematic synthesis. This meant that studies were first appraised individually by each of the two review authors, after which the review authors discussed their assessments and decided on whether to include a given study in the synthesis. We only included studies for thematic synthesis that paid sufficient attention to qualitative research standards for credibility, transferability, dependability, and confirmability (Hannes, 2011). We critically appraised qualitative studies using an adapted version of the JBI Critical Appraisal Checklist for Qualitative Research, developed by the Joanna Briggs Institute (Joanna Briggs Institute, 2017, and Lockwood et al., 2015). This checklist includes 10 questions that lead to an overall appraisal of “include,” “exclude,” or “seek further info.” The 10 questions take integral parts of the qualitative methodological process into consideration, such as the congruity between the choice of research methodology and the research objectives, the influence of the researcher on the research, and the flow of conclusions from the analysis or interpretation of data. In the original checklist, the questions are checked in boxes indicating “yes,” “no,” “unclear” or “not applicable.” In this review, review authors further justified their choice of “yes,” “no,” “unclear” or “not applicable” in a comment box. This was done to ensure a high methodological rigor and detail in the assessment. A copy of the *Critical appraisal checklist* can be found in the appendices, and the assessment of each study can be found in Table 2.

Thematic synthesis

We conducted a thematic synthesis inspired by the procedures presented in Thomas and Harden (2008). According to these authors, a thematic synthesis can be said to contain three stages, which are interwoven and to an extent overlapping. In the first stage, research findings are subjected to free inductive coding. In this process, sentences or paragraphs are applied with codes, leading to the production of a “code bank” and the beginning of a translation of concepts between studies (Thomas & Harden, 2008). The inductive coding in this review was performed by two review authors who individually read and re-read all eligible studies, leading to the production of a set of codes which were discussed and agreed upon by the two authors. Following this, these two review authors grouped the inductive codes into related areas in order to construct descriptive themes (stage two), after which the descriptive themes were translated into higher-order analytical themes (stage three, Thomas & Harden, 2008). In this process, the stages were largely interwoven and not

Table 2. Overview of included studies.

Author (s)	Title	Journal/outlet	Year	Study location	Included in thematic synthesis
Alvestad, T.; Bergem, H.; Eide B.; Johansson, J.; Os, E.; Pålmadóttir, H.; Pramling, I.; Winger, N.	Challenges and dilemmas expressed by teachers working in toddler groups in the Nordic countries	Early Child Development and Care	2014	Iceland, Norway, Sweden	Yes
Eide, B. J.; Winger, N.; Wolf, K. D.; Dahle, H. F.	"Ei linerle vet at hun er ei linerle." En kvalitativ studie av små barns "well-being" i barnehagen	Barn	2017	Norway	Yes
Eide, B.J.; Winger, N.; K.D. Wolf	Alt henger sammen – Hverdagslogistikk og små barns muligheter for tilhørighet i barnehagen	Tidsskrift for Nordisk Barnehageforskning	2019	Norway	Yes
Ekström, K.	Förskolans pedagogiska praktik Ett verksamhetsperspektiv		2007	Sweden	Yes
Emmoth, K.	Grunden läggs i förskolan Förskolepedagogers tankar om utveckling, lärande och dokumentation	Umeå University	2014	Sweden	Yes
Skolverket	Grupporlekar och personaltätthet i förskola, förskoleklass och fritidshem	Report	2003	Sweden	No
Seland, M.	Det moderne barn og den fleksible barnehagen	Norwegian University of Science and Technology	2009	Norway	Yes
Williams, P.; Sheridan, S.; Samuelsson, I.P.	A Perspective of Group Size on Children's Conditions for Wellbeing, Learning and Development in Preschool	Scandinavian Journal of Educational Research	2019	Sweden	Yes
Samuelsson, I.P.; Williams, P.; Sheridan, S.; Hellman, A.	Swedish Preschool Teachers' Ideas of the Ideal Preschool Group	Journal of Early Childhood Research	2016	Sweden	Yes
			2015	Sweden	Yes

(Continued)

Table 2. (Continued).

Author (s)	Title	Journal/outlet	Year	Study location	Included in thematic synthesis
Samuelsson, I.P., Williams, P., & Sheridan, S.	Stora barngrupper i förskolan relaterat till läroplanens intentioner	Nordic Early Childhood Education Research Journal			
Sheridan, S.; Williams, P.; Samuelsson, I.P.	Group size and organisational conditions for children's learning in preschool: a teacher perspective	Educational Research	2014	Sweden	Yes
Rosenqvist, A.	Förskollärares beskrivningar av barngruppsstorlekar i förskolan.	Göteborg University	2014	Sweden	Yes

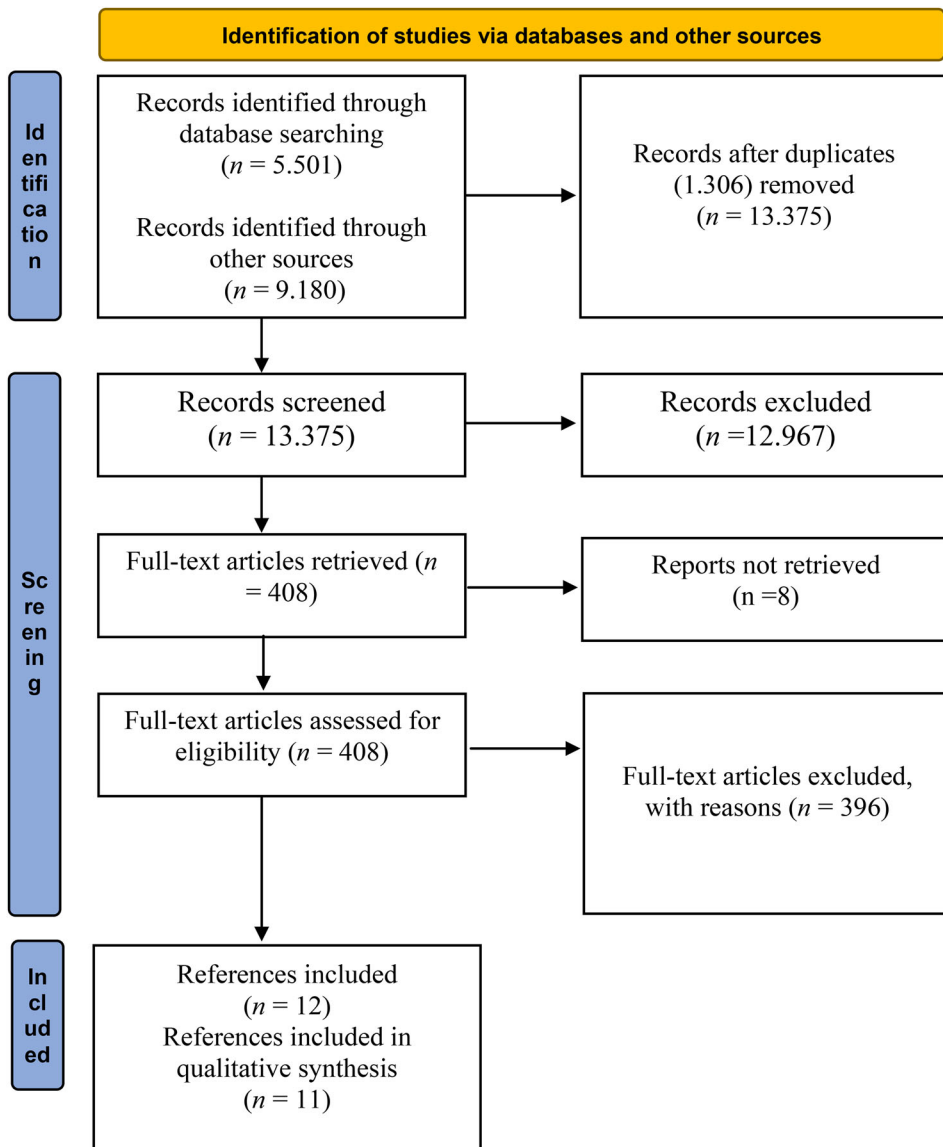


Figure 1. Flow diagram of the search and screening process.
From: Page et al. (2021).

performed in a strictly chronological order, but rather as a back-and-forth motion between individual parts (the included studies) and the synthesis as a whole. The analytical themes that were created guided the subsequent thematic synthesis which was performed by all three review authors in unison.

Table 3. Quality assessment.

Study:	Is there congruity between the stated philosophical perspective and the research methodology?	Is there congruity between the research methodology and the research question or objectives?	Is there congruity between the research methodology and the methods used to collect data?	Is there congruity between the research methodology and the representation and analysis of data?	Is there congruity between the research methodology and the interpretation of results?
Alvestad et al., 2014	The research methodology chosen is a case study design to gain insight into the view points of preschool practitioners in Iceland, Norway, and Sweden. The methods used a qualitative questionnaires and focus groups. The authors are interested in exploring what kind of issues or challenges preschool teachers face in the three countries, in order to compare and search for similarities and difference between national contexts. The methodology used seems well suited for this comparative endeavor. In terms of the philosophical perspective, a clear view on ontology/epistemology is not presented.	The authors seek information about the challenges and dilemmas faced by Nordic preschool teachers (Iceland, Norway, and Sweden) in their everyday work with toddlers. The following questions are posed: What do preschool teachers in Iceland, Sweden, and Norway consider most important and most challenging in their work with toddlers? What are the dilemmas they express as most demanding when they talk about their everyday work? These questions are congruent with the overall goal for the study. Also, the qualitative methodology and specifically the case study is congruent with the research questions. This is because a case study allows an in-depth understanding of the field from the preschool teachers' perspectives (their thoughts, observations, opinions, etc.).	The case study approach and the use of qualitative questionnaires and focus groups matches the research methodology	The research methodology seeks to gain information about the challenges and dilemmas faced by preschool practitioners in their work with toddlers. Accordingly, the analysis consists of a presentation of issues as interpreted by the authors from the statements of the preschool teachers in the focus groups or questionnaires. Specific statements from the teachers are presented to support the authors' main points, creating a congruity between the empirical data and the analytical points made by the authors.	Both the analysis and the interpretation of the results are on some levels exploratory while there are some questions that the authors specifically want the participants to reflect on. The participants' answers are the driving force for the analysis and thereby the results. Therefore, there is congruity between the research methodology and the interpretation of the results, because the reflections from the preschool teachers are analyzed and interpreted by the authors, who identify patterns in the reflections that are similar for the three countries.
Eide et al., 2017	The authors choose a micro-ethnographic approach in which attention is directed towards the child care setting as a whole, including structural factors, daily rhythms, routines and relationships, as they are all seen to play a role in determining children's well-being. The theoretical frame is inspired by perspectives on well-being developed by Allardt, in which quality of life is seen contextually, incorporating three dimensions: having, loving, and being. The philosophical perspective on well-being and the use of a micro-ethnographic approach makes for a congruent approach to seeking knowledge on children's quality of life in daycare.	Using a micro-ethnographic approach with observations and interviews to gain insight into the well-being of the youngest children in daycare is a viable and coherent approach.	Performing observations and interviews is well in line with a micro-ethnographic approach.	The analysis is performed in back-and-forth movements between theoretical perspectives, analytical concepts and the data material, which is aligned with a qualitative, micro-ethnographic approach.	The data material is interpreted in light of the stated theoretical perspectives drawn from Allardt, using excerpts from field notes to contextualise and create analytical transparency.
Eide et al., 2019	The authors are inspired by a pragmatic world view which implies that judgments and decisions are connected to the question: What is the problem? This means that decisions regarding methodology and choice of theoretical frame are guided by what is relevant to the problem focus of the study. The study problem is: To what extent do young children have the possibility for experiencing quality of life and a sense of belonging within different kindergartens contexts? The focus of the article is on the relationship between everyday organizational patterns in kindergartens and the opportunities provided for young children to experience wellbeing and a sense of connection with a kindergarten community. This focus is investigated through a micro-ethnographic	Yes, as reflected in the previous section. Using a micro-ethnographic approach with observations and interviews to gain insight into children's perspectives and experiences is a viable and coherent approach	Yes, as reflected in the previous section. Using a micro-ethnographic approach with observations and interviews to gain insight into children's perspectives and experiences is a viable and coherent approach.	Yes, the authors present a transparent analytical strategy which is well aligned with the research methodology, and the data are presented drawing on impressions from the observations and excerpts from the interviews.	The authors present a transparent analytical strategy which is well aligned with the research methodology, and the data are interpreted in light of impressions from the observations, excerpts from the interviews, and perspectives drawn from theory and other relevant research.

Is there a statement locating the researcher culturally or theoretically?	Is the influence of the researcher on the research, and vice-versa, addressed?	Are participants, and their voices, adequately represented?	Is the research ethical according to current criteria or recent studies, and is there evidence of ethical approval by an appropriate body?	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Overall appraisal
The cultural or theoretical orientation of the authors is not evident, but the study is placed in a national/regional context, with detailed descriptions provided of preschool policies and developments in these in the three countries.	It is stated that the researchers must act responsible and consciously in regards to their questions, self-reflection, critical awareness, analytical frames of reference, and so forth. The authors state that “this form of research calls for high ethical standards and respect for the integrity and rights of the informants.” Therefore, the researchers must establish an open-minded setting – a forum for dialogue to allow open-minded reflections for the informants – which will give an understanding of the experiences and what the teachers find most challenging in their work, etc.	Several practitioner statements are presented in the analysis (both from the focus groups and questionnaires), constituting the basis for the authors’ conclusions and interpretations. It is stated what country the statements come from, but it is not obvious if every voice (every preschool teacher) is represented in the analysis in regards to the chosen statements that are highlighted by the authors. It is not specifically stated how the collected data is analyzed, only that the analysis of data focused on finding thematic patterns or categories that were similar across the three countries. This means that the analytical strategy is somewhat lacking in transparency (e.g. how were the interviews coded and how were specific statements chosen?).	There is no mention of ethical approval by a formal body, but there is no indication of ethical problems in the way that the research was carried out.	There is a summary that flows directly from the analysis/interpretation of the findings, which presents two concisely described key points – drawn from the findings.	Congruent design, adequate transparency in reporting, and no apparent methodological issues
The authors present a clear theoretical frame and methodological approach and place their inquiry in a well-defined daycare context and in relation to other research.	The authors consider their own influence on the research field, stating that their presence may influence the behaviour of both adults and children and that this potential for disruption of normal patterns is unavoidable when performing ethnographic research. The authors also reflect on their positions as both insiders and outsiders to the field, given that they are all trained pedagogues/ kindergarten teachers.	The perspectives of the participating children and kindergarten teachers are represented in excerpts from field notes used in the analysis.	The researchers reflect on the ethical implications of doing research on small children, who are unable to give informed consent. The project was approved by NSD and Personvernombudet for forskning and the staff and parents of the children gave consent.	The conclusions drawn flow naturally from the analysis and reflect the theoretical standpoint presented.	The study is expertly performed and reported, with authors reflecting on all necessary quality criteria and presenting a highly coherent narrative.
The authors clarify the Norwegian kindergarten context, including values, traditions, and new developments, and place the study in relation to theory and other research.	The authors reflect on their own positions in the field and the possibility that their presence may have influenced children and staff. Also, they reflect on the role of their own presuppositions and values	Yes, although the analysis could have included more excerpts from field notes or interviews to contextualise the interpretations.	Ethical issues are well addressed, and the research was approved by NSD.	The conclusions drawn reflect the analysis and the data material presented. The article presents a coherent narrative.	Transparent and well performed investigation, all important research quality issues addressed.

(Continued)

Table 3. (Continued).

Study:	Is there congruity between the stated philosophical perspective and the research methodology?	Is there congruity between the research methodology and the research question or objectives?	Is there congruity between the research methodology and the methods used to collect data?	Is there congruity between the research methodology and the representation and analysis of data?	Is there congruity between the research methodology and the interpretation of results?
	approach consisting of observations and interviews designed to shed light on children's perspectives and experiences, which seems a meaningful and relevant approach in congruency with the theories and philosophies underlining the study.				
Ekström, 2007	The approach of the study is interpretive where the interpretive perspective is mainly represented by activity theory and theories of cultural reproduction. The author uses Bernstein's concepts of classification and framing as analytical tools. The author thoroughly describes the interpretive approach and argues for its' relevance in answering the research questions. The methodology of the study is well linked with the interpretive perspective and the methodological framework is clearly presented and reflected on.	The purpose of the study is to examine and understand how preschool working teams shape and realize the pedagogical practice and how working conditions affect this process. This purpose is answered through a qualitative methodology entailing observations and interviews, which is a meaningful approach.	Yes, a qualitative interpretive study using observations and interviews to collect data is a coherent approach.	There is a clear connection between the methodology, the theoretical perspectives and the analytical strategy of the study. The analytical strategy is thoroughly and transparently presented and the data are represented and analysed in accordance with this.	The presentation and interpretation of data follows the framework presented by the author, linking the respective parts of the study together.
Enmøth, 2014	The author argues well for the phenomenographical /phenomenological approach and the use of qualitative interviews, which is a sensible approach.	Qualitative interviews are certainly fit to answer the research questions.	A phenomenological approach and performing qualitative interviews following a semi-structured guide is a reasonable approach. The author presents relevant methodological reflections.	The author presents a clear analytical strategy which is aligned with the methodological approach. The use of interview excerpts gives the reader a good insight into the empirical data.	Yes, the interpretations are backed up by the empirical data presented and follow the analytical strategy.
Skolverket (2003)	The methodology is only scarcely presented and reflected on.	Yes, but it is still a concern that the methodological foundations of the study are only scarcely presented.	Yes, however, see previous comment.	Again, the methodology is only scarcely presented, and the authors do not provide an analytical strategy detailing, e.g. why particular excerpts or results are selected for presentation.	The authors do not provide an analytical strategy detailing, e.g. why particular excerpts or results are selected for presentation. I would like a stronger empirical backing of the findings, in particular those findings in which the

Is there a statement locating the researcher culturally or theoretically?	Is the influence of the researcher on the research, and vice-versa, addressed?	Are participants, and their voices, adequately represented?	Is the research ethical according to current criteria or recent studies, and is there evidence of ethical approval by an appropriate body?	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Overall appraisal
The theoretical perspective of the study is clearly presented and motivated. The author also gives a thorough presentation of the historical and cultural context of Swedish daycare and daycare research in Sweden and internationally.	The author reflects on his role in the field and on his own preconceptions.	Yes, the voices of participants are clear in the analyses and presented through statements and observational notes.	Research ethics are addressed and the study follows the guidelines of the Swedish Research Council (Vetenskapsrådet).	There is a clear flow between the purpose of the study, the theoretical perspectives and methodology chosen, and the analysis and conclusions drawn. The conclusions made by the author are clearly based in the data presented	Expertly performed and relevant study.
The author provides thorough descriptions of the Swedish daycare context as well as of previous studies and important theoretical standpoints.	The author reflects shortly on her role as a researcher related to the risk of influencing the answers made by informants ("Detta för att jag inte ville leda in dem att berätta mer om något som de själva inte upplevde som viktigt eftersom det eventuellt skulle kunna leda till att jag påverkade svaren").	Yes, the voices of participants are clearly represented through interview excerpts and both agreements and disagreements are shown	Yes, see following statement: "I den här studien har jag följt Vetenskapsrådets riktlinjer för forskning.(...) Jag sökte tillstånd för min undersökning hos förskolcheferna och beskrev för dem vad syftet med min forskning var och vad den skulle leda till. Jag har skriftligen och muntligen informerat de som deltog i studien om vad syftet med deras medverkan var och den studie som jag skulle genomföra. I det informationsbrev som skickats ut till alla förskolor fanns det även uppgifter som gjorde det möjligt att fråga om något var oklart. Alla pedagoger informerades om att de själva avgjorde hur länge de ville delta i studien och att de när som helst kunde avbryta sitt deltagande. Jag har använt mig av fiktiva namn på förskolorna och på de intervjuade. Alla intervjuade har fått namn som har samma begynnelsebokstav som det fiktiva namnet på den förskola de arbetar på. Den information som eventuellt kan förknippas med den kommun jag gjort studien i och som bedömts irrelevant har plockats bort. Allt insamlat materialet till min studie kommer uteslutande att användas för forskning och inte i något annat syfte."	Conclusions are in line with the results presented and backed by empirical data.	There is not a lot on group size and adult/child ratio, but there is some. And the study is transparent and of good research quality
This is not addressed	The Swedish context and previous research is presented, but no clear theoretical or philosophical standpoint.	It is very hard to assess whether all participant voices are equally represented due to lack of methodological and analytical transparency.	No statement on ethics, but no specific concerns.	Yes, but hard to assess due to the lack of analytical transparency.	The lack of transparency into the methods and analytical procedures is grounds for exclusion.

(Continued)

Table 3. (Continued).

Study:	Is there congruity between the stated philosophical perspective and the research methodology?	Is there congruity between the research methodology and the research question or objectives?	Is there congruity between the research methodology and the methods used to collect data?	Is there congruity between the research methodology and the representation and analysis of data?	Is there congruity between the research methodology and the interpretation of results?
					authors critically interpret the views of participants.
Seland (2009)	The author reflects in length on the philosophical and theoretical foundations of the study and links these with the methodology and aims of the study	The methodology used is clearly linked to the aims of the research.	The methodological frame of the study and the methods used to collect data are presented clearly and with detail.	A clear analytical strategy is presented and followed, which is in line with the methodological foundations of the study	The interpretations follow a clear and transparent methodological and theoretical framework.
Williams et al. (2019)	The authors clearly state their philosophical perspective (interactionist/ecological systems theory) and use a qualitative methodology encompassing open-ended questionnaire questions and interviews, which makes for a congruent approach	The research questions are: How do preschool teachers express views on group sizes in preschool? What kind of conditions are given to children depending on group size? These questions are well-suited for a qualitative approach with interviews and a questionnaire.	The methodology and design of the data collection are well connected and transparently described	The authors present and perform an analytical strategy which is well aligned with the methodological and theoretical/philosophical standpoints of the study.	Congruent analytical approach and clear theoretical perspectives used in the interpretations.
Samuelsson et al. (2016)	The authors provide a thorough description of the philosophical perspective guiding the study (phenomenography) and the connection between this philosophy and the research methodology.	The research methodology is well aligned with the research question. The authors wish to explore what preschool teachers conceive to be a desirable preschool group, and why, and they explore this question by analyzing teacher responses to an open questionnaire question ("How is the ideal preschool group composed and why?").	The researchers use a qualitative, phenomenographic methodology with the data consisting of teacher responses to an open-ended question from a questionnaire. As stated by the authors, phenomenography is often related to interviews, but the use of an open-ended question eliciting narrative responses from teachers is also congruent with a phenomenographic approach.	The authors present and perform an analytical strategy which is in line with a phenomenographic approach.	The analysis and the interpretations made are aligned with a phenomenographic approach.
Samuelsson et al. (2015)	The researchers do not state a philosophical perspective, but outline a clear theoretical framework in which they draw on Bronfenbrenner's ecological systems theory and Evans' levels of working with curricula in preschool. The use of this theoretical framework is well in line with the study methodology.	The researchers wish to answer the following question: What goal areas are prioritized in preschool teachers' work and why, depending on group size? This question is answered through a questionnaire and qualitative interviews, which is a sensible approach.	The study follows a consistent methodological approach.	The researchers present a clear analytical strategy which is well aligned with the methodological and theoretical frameworks.	The interpretations are performed in line with the analytical strategy and the theoretical framework presented and there is a good degree of empirical coverage.
Sheridan et al. (2014)	There is a clear philosophical and theoretical perspective (interactionism) which corresponds well with the methodology.	Performing a qualitative interview study in order to gain insight into teachers' views on group size and the organization of groups and learning environments in preschool is a sensible and coherent approach.	There is congruity between an interactionist perspective and performing a qualitative interview study	The authors present a clear analytical strategy, clarify theoretical concepts, and analyse and interpret the data accordingly.	The interpretations are soundly based in a clear methodology and theoretical framework.
Rosenqvist (2014)	Bronfenbrenner's ecological systems theory is used and well related to the research methodology.	The study seeks to gain insight into: "(i) vilka sammanhang förskollärarna beskriver att en barngrupp är för stor respektive för liten och hur förskollärare beskriver att barngruppsstorleken är en möjlighet eller ett hinder i förhållande till barns aktiviteter, positioner och relationer." The methodological approach of the study (drawing on two open questionnaire questions) is congruent with the aim of providing insight into the above questions.	The author uses a congruent and transparently reported design.	The analysis of data is well presented and performed in line with the methodological approach and the theoretical perspective of the study.	The interpretations are transparent and follow the methodological and analytical strategy presented, with a more than adequate use of empirical backing for the points made.

Is there a statement locating the researcher culturally or theoretically?	Is the influence of the researcher on the research, and vice-versa, addressed?	Are participants, and their voices, adequately represented?	Is the research ethical according to current criteria or recent studies, and is there evidence of ethical approval by an appropriate body?	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Overall appraisal
Detailed and clear theoretical framework and cultural context (Nordic daycare tradition).	Yes, this is well addressed by the author.	Yes, and the author reflects on how to make all voices heard.	Yes, ethics addressed and no issues in that regard.	Yes, the conclusions are firmly based in the analysis and interpretation of data and the theoretical foundations of the study.	A study of excellent quality and relevance to the review
The study is theoretically well-defined and placed within the Swedish daycare tradition.	This is not considered by the authors.	Yes and no. Excerpts from the empirical data are presented, but it would strengthen the analysis if more empirical examples were used. In some cases, the interpretations made by the authors can be a little hard to follow based on the empirical data presented – in these cases, more empirical backing would have made the points seem clearer and more justified.	Yes, see page 702.	The conclusions are aligned with the interpretations made by the authors which in some cases would have benefitted from a firmer empirical backing.	Congruent and adequate transparency.
The researchers clearly state their theoretical standpoints and the research is located within the Swedish daycare tradition	No such considerations made by the authors. Supposedly, the direct influence of the researchers on the field would in this case be small, since the data consist of a questionnaire (as opposed to direct contact via observations or interviews). It would however be relevant for the researchers to consider their own preconceptions and the potential role of these in the interpretations made.	The voices of participants are represented through a sufficient use of excerpts from the empirical material.	No statements made regarding research ethics, but there is nothing to suggest any issues – and the use of a questionnaire limits the risk of ethical issues.	Overall, the conclusions drawn are in line with the empirical findings presented in the analysis.	Congruent and relevant study.
There is a clear theoretical framework and the study is placed within the Swedish daycare tradition.	No such considerations made.	The voices of participants are well represented through the use of empirical excerpts.	Yes, see page 6.	Yes, the conclusions drawn are in logical continuation with the analysis of the empirical data.	Relevant and methodologically sound study with clear theoretical foundations.
The theoretical foundations of the study are clearly presented as well as the Swedish daycare context.	No, this is not considered.	The authors make the voices of participants heard through interview excerpts providing good insight into the empirical material.	Yes, see pages 383–384.	Yes, the conclusions flow naturally from the analysis and interpretation of the empirical material.	Coherent study with strong theoretical and empirical foundations.
Yes, clear theoretical framework and national/cultural context.	Yes, this is well addressed, see, e.g. page 41. The author reflects well on the role of her own preconceived notions and previous experiences with working as a preschool teacher.	The author uses many empirical excerpts and stays close to the empirical data when presenting analytical points. Furthermore, she is aware of making all participant voices heard/keeping a balance between the space given to each participant, as seen in the following quote from page 41: "... citaten som jag valt att ha med i resultaten använder jag nummer i stället för kommun för att försäkra att svaren inte kan härledas till en kommun eller avdelning men också för att visa att samma respondent inte förkommer mer ofta än någon annan."	The study follows common ethical guidelines, which are clearly presented.	The conclusions made are firmly grounded in the analysis of the empirical data.	Highly relevant and well-performed study with thorough descriptions of all important methodological issues.

Table 4. Descriptive coding of the 11 studies used in the thematic analysis.

Study characteristics							
Author (s)	Title	Journal/outlet	Year	Study location	Type of ECEC setting	Study design	Theoretical perspective
Alvestad, T.; Bergem, H.; Eide B.; Johansson, J.; Os, E.; Pálmadóttir, H.; Pramling, I.; Winger, N.	Challenges and dilemmas expressed by teachers working in toddler groups in the Nordic countries	Early Child Development and Care	2014	Iceland, Norway, Sweden	Preschool	Collaborative study between three Nordic countries; data collected from preschool teachers. Iceland and Norway: focus group data. Sweden: Questionnaires. Case study design. 37 preschools and 65 preschool teachers participated.	Not reported
Eide, B. J.; Winger, N.; Wolf, K. D.; Dahle, H. F.	"Ei linerle vet at hun er ei linerle." En kvalitativ studie av små barns "well-being" i barnehagen	Barn	2017	Norway	Centre-based	The researchers did fieldwork observations, spontaneous "walk along" conversations with staff and parents, and planned interviews/focus group interviews with staff, parents, and leaders.	Micro-ethnographic approach with a descriptive strategy (p. 6).
Eide, B.J.; Winger, N.; K.D. Wolf	Alt henger sammen – Hverdagslogistikk og små barns muligheter for tilhørighet i barnehagen	Tidsskrift for Nordisk Barnehegeforskning	2019	Norway	Centre-based	Observations done <i>sitting down</i> and <i>walking along</i> . Spontaneous conversations and planned interviews with caregivers and parents. Focus groups and individual interviews.	The researchers have chosen a micro-ethnographic approach with a descriptive strategy.
Ekström,K.	Förskolans pedagogiska praktik Ett verksamhetsperspektiv		2007	Sweden	Preschool	Ethnographic study. Observations, interviews, and document analysis.	The approach of the study is interpretative, where the interpretative perspective is mainly represented by activity theory and theories of cultural reproduction. The theoretical background for the study is the cultural historical perspective.
EmmthoK.	Grunden läggs i förskolan Förskolepedagogers tankar om utveckling, lärande och dokumentation	Umeå University	2014	Sweden	Preschool	Interviews with preschool teachers.	The author was inspired by a phenomenographic methodology.
Seland, M.	Det moderne barn og den fleksible barnehagen	Norwegian University of Science and Technology	2009	Norway	Kindergarten	The knowledge development in the study is based on a "triangulation" of both the policy level, municipal framework factors and practices, and participation in the everyday life of children and caregivers in one kindergarten.	Social constructivism
Williams, P.; Sheridan, S.; Samuelsson, I.P.	A Perspective of Group Size on Children's Conditions for Wellbeing, Learning and Development in Preschool	Scandinavian Journal of Educational Research	2019	Sweden	Preschool	The article is based on data generated from 24 interviews with preschool teachers and analyses of preschool teachers' written answers to 11 open-ended questions in a questionnaire.	Interactionist perspective based on Bronfenbrenner's ecological systems theory.
Samuelsson, I.P.; Williams, P.; Sheridan, S.; Hellman, A.	Swedish Preschool Teachers' Ideas of the Ideal Preschool Group	Journal of Early Childhood Research	2016	Sweden	Preschool	Phenomenographic study drawing on data from one question in a larger survey.	Phenomenology

Research objectives	Child and caretaker characteristics				Critical appraisal	
	Child age	Characteristics of child group	Group size/ caregiver/ child ratio	Caregiver education and experience	Overall appraisal	Included in thematic analysis
To explore what preschool teachers in the Nordic countries consider most important and most challenging in their work with toddlers? Also, what dilemmas do they express as most demanding when they talk about their everyday work?	9 months to 3 years (p. 6).	Not reported	See Table 2, p. 6.	In the three countries in this study, there are no particular programs or courses for practitioners working with the youngest age group in preschool.	The design of the study is well suited for answering the research questions and the study follows a consistent and meaningful methodological approach.	Yes
The aim of the study was to explore the quality of life of children in kindergarten/ daycare (p. 2).	Depends on which daycare/ kindergarten (6 centers participated). The range between the centers was 1.1 to 6.1 years (p. 27).	Not reported	Unclear	Not reported	The study is well designed and executed, with authors reflecting on all necessary quality criteria and presenting a coherent narrative.	Yes
The aim of the research was to study the wellbeing of children in different types of groups (p. 2).	Not reported	Not reported	Some kindergartens housed over 30 children in a group and others had a group size of approximately 9–18 children per group (p. 9).	Not reported	The study is reported transparently and is well performed, with all important research quality criteria addressed.	Yes
To provide an increased understanding of how preschool work teams design and realize their pedagogical practice and how the daycare conditions affect this process.	1–5 years old.	The daycare centers were placed in different socio-cultural environments, including one rural environment and two urban environments. One of the areas had a relatively high unemployment rate and a large proportion of immigrants (p. 49).	Unclear	For descriptions of caregiver education and experience, see p. 61f, 77f, and 97f.	The methodology of the study is consistent with the interpretive approach and all parts of the study are transparently presented. There is a clear flow between the purpose of the study, the theoretical perspectives and methodology chosen, and the analysis and conclusions drawn.	Yes
To develop knowledge about preschool teachers' views on children's overall learning and their views on children's development and learning in language, communication, and mathematics.	0–5 years of age	The participating preschools were located in areas that varied in terms of socio-economic resources.	Most of the children between 3 and 5 years of age were in groups containing 18–20 children. For the younger children, groups consisted of 16 children (p. 43).	See Table 2 for information about the preschool teachers (p. 97).	The study is well designed, transparently reported, and functions as a coherent whole.	Yes
The primary research question was: What consequences can recent discourses about children and kindergartens have for professional practice and children's opportunities for participation and learning in kindergarten, when the understandings are to be designed and materialized within a municipal context? (see p. 15 for all research questions).	Between 3 and 5 years of age.	Not reported	40 children and 6 caregivers at each 'base'.	The group of caregivers included: Preschool teachers ("base leaders"), assistants, both skilled and unskilled, trainees, special educators employed in 80% positions, and a regular preschool teacher.	The author provides a detailed report, with all relevant research quality criteria thoroughly addressed. There is good coherence between all parts of the study (aims, methods, theoretical foundations, and analysis).	Yes
The study explores how group size influences children's conditions for wellbeing, learning, and development in preschool in relation to the intentions in the revised Swedish preschool curriculum.	1–3, 3–5, or 1–5 years old, and one preschool had a group with only 5-year-old children.	The sample consisted of 12 preschools, located in 6 municipalities in different parts of the country. The sample contained both urban and rural regions and represented municipalities that differ geographically, demographically, ethnically, and in terms of socioeconomic structures (p. 702).	Group size ranged from 12 to 45 children, with seven (of 12) preschools having more than 30 children in their groups. Number of caregivers in the working teams ranged from three to eight.	Not reported	The authors clearly present their philosophical perspective and follow a methodological and analytical approach which is consistent with this perspective.	Yes
The aim of the study was to describe and analyse preschool teachers' ideas of	Not reported	Not reported	Not reported	From the larger survey: 6 % have a master's degree.	There is congruency between the philosophical/theoretical perspective of the study and	Yes

(Continued)

Table 4. (Continued).

Study characteristics							
Author (s)	Title	Journal/outlet	Year	Study location	Type of ECEC setting	Study design	Theoretical perspective
Samuelsson, I.P.	Stora barngrupper i förskolan relaterat till läroplanens intentioner	Nordic Early Childhood Education Research Journal	2015	Sweden	Preschool	Survey and interviews.	Interactionist perspective based on Bronfenbrenner's ecological systems theory.
Sheridan, S.; Williams, P.; Samuelsson, I.P.	Group size and organisational conditions for children's learning in preschool: a teacher perspective	Educational Research	2014	Sweden	Preschool	Cross-sectional study using semi-structured interviews conducted with two teachers from each of the 12 preschools investigated.	Ecological systems theory, a critical ecology of the early childhood profession, theories of children's learning, and four dimensions of pedagogical quality.
Rosenqvist, A.	Förskollärares beskrivningar av barngruppsstorlekar i förskolan.	Göteborg University	2014	Sweden	Preschool	Survey study focusing on 2 of 17 open-ended questions in a large nationwide survey.	Bronfenbrenner's ecological systems theory.

Results

Description of included studies

As illustrated in the flow diagram (Figure 1), we found 12 full text studies that were relevant to the review question. Of the 12 included studies, 11 studies were included in the thematic synthesis following the critical appraisal of their fulfilment of qualitative research standards. Table 3 gives an overview of the included studies. The year of publication for the 12 included studies ranged from 2003 to 2019. Methods used in the studies included questionnaires, focus group interviews, semi-structured individual interviews, and observations, typically in connection with ethnographic fieldwork.

For detailed information on each included study, see Table 4.

Thematic analysis

After completing the inductive coding, nine higher-order analytical themes emerged from the 11 studies included in the data material. In this section, we present the themes and main findings from included studies contributing to each theme.

Caregivers putting out fires and children who become invisible

Five studies presented findings on the way in which group size and caregiver/child ratio influence caregiver/child interactions and behavior (Alvestad et al., 2014; Eide et al., 2017; Rosenqvist, 2014; Samuelsson et al., 2016; Seland, 2009). As outlined in the introduction, both theory and previous research suggest that smaller group sizes and fewer children per caregiver positively impact both the frequency and quality of caregiver/child interactions,

Research objectives	Child and caretaker characteristics				Critical appraisal	
	Child age	Characteristics of child group	Group size/ caregiver/ child ratio	Caregiver education and experience	Overall appraisal	Included in thematic analysis
what an ideal preschool group is.					the methods and analytical procedures employed.	
The aim of the study was to explore preschool teachers' expressions regarding opportunities and obstacles to work with the intentions of the curriculum, in relation to size of the child group.	1–3 years, 3–5 years, and 1–5 years of age.	The sample includes Sweden's largest cities, medium-sized, and small municipalities.	Group size ranged from 12 to 45 children, with seven preschools having more than 30 children in their groups.	Not reported	Relevant and methodologically sound study with clear theoretical foundations.	Yes
The main research question was: How do teachers explain their organization of the child group and the learning environment in preschool, and why?	1–3, 3–5, and 1–5 years of age, with one preschool having a group with only 5-year-old children.	The sample contains both urban and rural regions and represents municipalities that differ geographically, demographically, ethnically, and in terms of socioeconomic structures.	Group size ranged from 12 to 45 children, with seven preschools having more than 30 children in their groups.	Not reported	Coherent study with strong theoretical and empirical foundations.	Yes
The research questions were: When does a group of children become too large? When does a group of children become too small?	Not reported	The purpose of the selection was to have a geographical spread throughout the country where municipalities with few and many preschools are represented, as well as preschools with both small and large groups of children.	The smallest groups of children had 11 children and the largest groups had 26 or more children.	Not reported	Highly relevant and well-performed study with thorough descriptions of all important methodological issues.	Yes

and this finding is replicated in the five studies exploring this theme within the present review. In fact, none of the included studies suggested any negative effects of smaller group sizes and fewer children per caregiver on caregiver behavior and caregiver/child interactions. Both interview-based studies with caregivers and observational studies suggest that with a smaller group of children, the caregivers are able to focus more on individual children and allot more time to see and listen to each child (Alvestad et al., 2014; Eide et al., 2017). In an observational study, it was found that in larger groups some children are observed to become “invisible” to the caregivers, meaning that they receive very little if any attention or interaction with caregivers. Furthermore, findings suggest that in larger groups, caregivers spend more time observing the children from a distance and spend less time interacting with children, except for when conflicts arise (Eide et al., 2017). Findings from several studies also suggest that when the group size is large, practical tasks often take precedence over playful interactions, conversation and other pedagogical activities, leading to a situation in which caregivers feel as if their job resembles a “conveyor belt” (Alvestad et al., 2014). Thus, with larger group sizes caregivers often focus mainly on fulfilling basic needs and avoiding accidents, which is reflected in the following quotes:

When nappy change happens all at the same time, what about the quality times?

(Interview excerpts from two different caregivers, Alvestad et al., 2014)

Finally, two studies also suggest that in larger groups of children with fewer caregivers, the caregivers spend more time on correcting undesirable child behavior such as dangerous or aggressive behavior. The two studies also suggest that caregivers feel that when they are in charge of a large group of children they spend more time on resolving conflicts between children (Alvestad et al., 2014; Seland, 2009).

Caregiver's possibilities to get to know and form meaningful relationships with children

Another aspect of larger group sizes is that it is difficult for all caregivers and children to get to know each other well. In large Norwegian childcare centers, researchers noted that there were cases in which caregivers and children within the observed daycare centers did not know the names of everyone. In order to minimize noise, stress and to allow for specific activities, children are often organized in smaller groups for significant time periods during the day. However, the organization of groups is often based on logistics and practical concerns, which means that there is a lack of stability for the children and that they may risk ending up in groups with relatively unfamiliar caregivers and children. When children were placed in smaller groups with other children, whom they were relatively unfamiliar with, it was observed to decrease some children's meaningful participation. Based on the interpretation of the authors, their findings suggest that in smaller and more stable groups where children and caregivers know each other well, caregivers and children are observed to have an increased sense of community, more positive socioemotional interactions and to spend time reminiscing about collective experiences and memories (Eide et al., 2017). Similarly, larger child groups are perceived as an obstacle to forming a bond with individual children, which is illustrated by a quote from a Norwegian preschool teacher in a large preschool:

We keep counting children, but we do not really know the names of them all

(Alvestad et al., 2014)

How group size and caregiver/child ratio influence children's interactions and behavior
Similar to the findings regarding the relationship between group size and caregiver/child interactions, seven of the included studies report findings suggesting that smaller group sizes and fewer children per caregiver are beneficial to the children's interactions with each other (Alvestad et al., 2014; Eide et al., 2017; 2019; Rosenqvist, 2014; Samuelsson et al., 2016; Seland, 2009; Sheridan et al., 2014). In fact, only a single study suggests that there may be some situations in which a group becomes too small and that this may limit the children's ability to relate meaningfully to their peers if the choice of who to form friendships and play with is limited (Rosenqvist, 2014).

Furthermore, in larger groups, more children are observed to be aimlessly wandering around for longer periods of time without engaging with any children or caregivers (Eide et al., 2017). Similarly, it is found that when children spend time in large groups it increases the children's disruptive behaviors and conflicts (Seland, 2009; Sheridan et al., 2014).

Smaller groups increase child participation, concentration and freedom of choice

It is easier for children to concentrate on their tasks and games if the groups are smaller.

They can also have more influence and great possibilities to make choices, and we're more flexible and adapt better to their interests. When we are able to listen more to the children, they also have more influence on their day in preschool

(Excerpt from interview, Samuelsson et al., 2016)

As can be seen from the excerpt, a general finding from interview-based studies was that caregivers believe that smaller groups provide more opportunities for children to participate meaningfully in play and other activities with each other and with the caregivers. However, other studies also emphasize that other characteristics of the ECEC setting and the specific child group may affect the extent to which children participate in activities and their freedom of choice. For instance, in a Swedish observation and interview-based study, it was concluded that children in a preschool with children from more affluent families have more freedom and increased opportunities for meaningful participation in cooperative play than children from a multicultural, lower-income preschool, even though overall group size and caregiver/child ratio were comparable (Ekström, 2007).

How group size and caregiver/child ratio influence children's learning and development

Most of the included studies in the present review reflect to some extent on the ways in which structural characteristics of daycare such as the size of the group and the caregiver/child ratio play a part in shaping children's possibilities for learning and development. However, eight studies perform in-depth examinations of how ratio and group size influence the learning environments created for children and the caregivers' choices concerning activities and content areas (Ekström, 2007; Emmoth, 2014; Rosenqvist, 2014; Samuelsson et al., 2015; 2016; Seland, 2009; Sheridan et al., 2014; Williams et al., 2019). It is noted by caregivers in these studies that large groups of children make it difficult for caregivers to provide equal learning opportunities for all children (see, e.g. Emmoth, 2014; Rosenqvist, 2014; Sheridan et al., 2014). When many children are gathered in the same group, it is difficult for caregivers to notice the individual child and to share his/her interests which is seen as a prerequisite for supporting children's learning and challenging them to move forward in their development. In a large group, it is not possible to customize learning situations and content areas to fit the needs of individual children, instead the child group turns into a collective unit where everyone must do the same thing at the same time (Seland, 2009). This is illustrated in the study by Rosenqvist (2014), where a caregiver makes the following statement:

I generally think that the child groups are too large. The child group feels too large when you feel that you don't have the time to see each child and the needs of the children. Due to the number of children, it becomes difficult to adapt activities according to each child's abilities and interests

(Original excerpt in Swedish, our translation)

Selecting and de-selecting activities due to structural characteristics

The choices caregivers make concerning activities and content areas are influenced by the number of children in the group and the amount of adult supervision available. While some activities are perceived to require a large number of children, such as rhythmic exercises, gymnastics, singing, and ball games, more specific learning activities focused on particular contents require children to be divided into smaller groups (Rosenqvist, 2014; Sheridan et al., 2014). Depending on the number of children present, caregivers select—or de-

select—activities based on the affordances provided by different group constellations. It is a common sentiment in the eight studies focusing on children's learning and development that smaller groups of children provide better opportunities for implementing learning activities and for caregivers to provide a richer pedagogical content in comparison to larger groups. With large groups of children and insufficient staff resources, caregivers express that they have difficulties following through with planned content, as reflected in the statement: *"I do not actively deselect contents, we just cannot do what we intended"* (Williams et al., 2019). The activities and content areas that are most commonly de-selected when the group is perceived as too large are science and technology (e.g. in the form of experiments), creative and esthetical activities, excursions, and reading (Ekström, 2007; Samuelsson et al., 2015; Williams et al., 2019). These activities are de-selected since they require close adult interaction and support, as in the case of scientific experiments or working with creative materials such as paint or clay. These activities are difficult to differentiate according to the needs of children of different ages and with different interests. The latter is also expressed as a challenge in book reading sessions where it can be hard for caregivers to find literature that matches the needs of both toddlers and older preschool age children. Related to this, caregivers often choose to simplify or shorten specific learning activities due to the size and diversity of the child group which leads to more superficial learning processes in which there are limited opportunities for children to reflect, problematize and ask questions (Samuelsson et al., 2015). Another area which is de-selected or given a lower priority when there are too many children and/or too few caregivers present is the work related to documenting and evaluating daycare activity. The sentiment expressed by caregivers is that given the need to prioritize where to spend their time, their primary focus is on the basic functions of daycare, which are providing care and safety for children and maintaining daily chores (Rosenqvist, 2014).

Realizing the intentions of the curriculum: when ideals clash with reality

In the Scandinavian ECEC systems, caregivers are expected to base their work on a number of commonly agreed goals and ideals for bringing up children, expressed in framework plans or curricula that are more or less binding and monitored in different ways depending on national context. These goals are often related to children's learning and developmental processes as well as to core democratic values and human rights, including every child's right to participate and be heard. While caregivers may agree with the intentions put forth in the curricula, the sentiment expressed in the eight studies focusing on children's learning and development is that of ideals clashing with the structural realities of daycare. Seen through the eyes of caregivers, there is a discrepancy between the demands imposed on their work from the policy/macro-level and the actual resources available to them at the micro-level, which leads to frustration and a feeling of not being given the means needed to succeed (Samuelsson et al., 2015). In a poignant statement, a caregiver participating in the study by Ekström (2007) says:

Sometimes it can feel like mockery, because what it says in the curriculum is, /.../it sounds so very, very fancy, and big, so that it feels like it isn't possible to fulfill this, that's how it feels. Of course, we try to bring it down to a reasonable level, but then when there are budget cuts, the manager usually says that you should lower your ambitions, and we usually say that now it is not possible to go any lower, because

then, well, then we are pretty much just here and making sure that they do not injure themselves (the children)

(Original excerpt in Swedish, our translation)

What is reflected in the above statement is a feeling that the structural realities in daycare get in the way of creating the conditions needed for children to develop and learn in accordance with the intentions of the official curricula. In this way, the intentions behind the curricula may be good and meaningful, but if the structural conditions are not conducive to working in line with these intentions, they lose their sense and purpose and even become a source of disillusion to the caregivers.

Caregivers' perception of optimal group size and caregiver child/ratio

Four studies presented findings on caregivers' perceptions on what constitutes optimal group size and caregiver/child ratio in ECEC (Alvestad et al., 2014; Eide et al., 2017; 2019; Samuelsson et al., 2016). Across the four studies, caregivers seemed to have rather different ideas with regard to what constitutes the optimal group size and/or caregiver/child ratio. Thus, the perception of optimal group size and caregiver/child ratio seems to some degree to depend on what the caregivers are used to working with. However, without exception, all caregivers in the included studies seemed to think that a smaller group size and fewer children per caregiver than what they currently had would be desirable. For instance, in one study based on open-ended questionnaires, caregivers were asked to describe the ideal child group. Based on data analysis of these responses, it was concluded that all preschool teachers emphasize that they want a group with fewer children than what they have today, despite a variation in number of children in their current groups. For instance, one teacher is quoted as stating the following regarding optimal group size:

When it's age-homogenous, not too large groups, so each child can be heard and seen by the number of staff. Large groups of children tend to be difficult and sprawling, and the staff can have a hard time ensuring each child's development and needs.

(Samuelsson et al., 2016).

Furthermore, results suggest that from the perspective of caregivers, an ideal children's group can be described as having a balance between gender, age, ethnicity, and social background (Samuelsson et al., 2016).

Similar to the caregivers' perception of optimal group size, their views on the ideal caregiver/child ratio seem to vary slightly, depending on their current working conditions. However, a Swedish interview based study suggests that most caregivers perceive a ratio of five children per caregiver (or three to four children per caregiver for the youngest age group) to be the ideal (Samuelsson et al., 2016).

Caregivers' perceived competence influences their perception of group size

Most studies in this review investigate how group size and ratio influence preschool teachers' communication and interaction with children. Nevertheless, several (all Swedish) studies investigate group size from the caregivers' point of view, e.g. how the caregivers' perceived competences influence their perception of group size. Samuelsson et al. (2016) found that

some preschool teachers believe that their competence is the key to solving the problem of too many children in the group. The group works when the teachers function together. As one preschool teacher in the study says: *"All groups of children are ideal, as long as you as a teacher take care of the conditions the group presents"* (Samuelsson et al., 2016). Another informant says: *"It's very important that children encounter professional educators; then how the group is composed is less important"* (Samuelsson et al., 2016). In other words, if preschool teachers are competent, they can get a group to function regardless of how many children there are. According to the same study, the caregivers ... *"are simply convinced that they do good work, and if they can cooperate and organize the learning and play in preschool activities they are satisfied, and the size of the group becomes less important."* Among the competence requirements that caregivers in the study point to are: (1) the team shares responsibility and mind-set, and (2) there is a well thought-out structure with safe work roles, which in turn, according to the informants, gives a safe and harmonious group of children (Samuelsson et al., 2016). Similarly, Rosenqvist (2014) suggests that the practitioners' competences influence how they perceive the group size. Based on findings from this study it is suggested that the caregivers' knowledge and competence are important for how they organize and manage group activities, regardless of the size of the child group. This is also reflected in Williams et al. (2019) in which they find that preschool teacher competence is fundamental to their experience of group size. Williams et al. (2019) also suggest that group size can influence whether caregivers perceive themselves as competent or not. In other words, there seems to be a mutually constitutive relationship between group size and the caregivers' perceptions of competences.

Discussion

To our knowledge, no previous systematic reviews have been performed focusing exclusively on qualitative studies of caregiver/child-ratio and group size in Scandinavian daycare and the present review summarizes findings from 12 included primary studies. Only a small number of the included studies had a primary research objective focused on exploring group size and caregiver/child ratio in ECEC, which in itself is a major finding. Based on inductive coding of 11 of the included studies, nine analytical themes emerged suggesting separate ways in which caregiver/child ratio and group size are perceived to influence children and everyday life in ECEC as perceived by caregivers and independent observers. In the discussion, we will address some of the main findings and call for further research in this field.

Giving voice to children and their parents

Within the present review, we aimed to include studies with all types of qualitative and mixed-methods research designs, and despite a comprehensive search, we did not identify a single study in which researchers conducted interviews with children, or in which parents were interviewed or asked to assess the ways in which caregiver/child ratio or group size affects children. This finding greatly compromises the validity and completeness of any inferences which can be made from the present review, as the child's perspective is almost completely lacking from the included studies. Although independent observations were

carried out in several studies, the individual thoughts, feelings, and experiences of children are absent. We are aware that interviewing very young children is difficult, however, at least from preschool age, there are interactive interview techniques available which might be employed in future research (Measelle et al., 1998). Thus, future research should interview children in ECEC settings with different caregiver/child ratios and group sizes. Giving a voice to children as the central stakeholders in ECEC should be a major aim of future research as no definitive conclusions regarding optimal caregiver/child ratio and group size can be drawn as long as the child's perspective is never explored within the research literature.

Similarly, parents may be seen as central stakeholders and as the experts on the wellbeing and socioemotional adjustment of their children. We did not find any studies in which researchers conducted interviews with parents or asked the parents to fill out open-ended questionnaires regarding the ways in which they perceived their children to be affected by caregiver/child ratio and group size. Ideally, ECEC should be aimed at supporting the child's development, learning, and wellbeing, and in order to assess if this is also the reality, there is a need to explore the parental perspective on what constitutes optimal caregiver/child ratio and group size.

Giving voice to caregivers

In the Scandinavian countries, it has, for years, been extensively debated in the public discourse and in the media how caregiver/child ratio and group size negatively influence caregivers' work conditions. Anecdotes on how unfavorable caregiver-child ratios may cause caregiver sickness absence, work related stress, and decreased job satisfaction are often portrayed. Surprisingly, these topics are not very well represented in the included studies. In fact, we only found one study addressing the influence of child group size on caregiver stress levels. In this Swedish study, it was concluded that caregivers feel more stress when working in larger groups (Sheridan et al., 2009, cited in Williams et al., 2019, p. 699). A study based on Danish register data concludes that caregiver/child ratio in ECEC is positively associated with caregiver sickness absence (short-term and long-term) and negatively associated with job satisfaction (Gørtz, 2010; Gørtz & Andersson, 2014). In the same study, it was also found that higher caregiver/child ratios in ECEC increased the probability of caregivers changing jobs to another municipality or another sector (Gørtz, 2010). Since stress, sickness absence, and a high staff-turnover due to lack of job satisfaction both have huge personal and economic consequences (Gørtz & Andersson, 2014), we are puzzled by the lack of qualitative research concerning the caregivers perspective on what constitutes optimal caregiver/child ratio and group size in ECEC, e.g. in relation to work conditions and health.

It is also worth mentioning that other structural conditions might influence what constitutes the optimal caregiver/child ratio and group size. A recent Danish literature review on continuous professional development (CPD) in ECEC reveals that research regarding caregivers' post-service training and competence development rarely addresses how structural factors like group size and caregiver/child ratio influence the effect of CPD in terms of process quality or children's ECEC experiences (Jensen & Svinth, 2022). In an international context, Munton et al. (2002) perform a review focusing on the interplay between caregiver/child ratios, group size, staff qualifications and training, and daycare quality. They conclude that there is research evidence to suggest that group size, caregiver/child ratio, and staff

training and qualifications are among several factors impacting on the quality of caregiver/child interactions and by extension on child developmental outcomes. However, Munton et al. (2002) emphasize the fact that it is difficult to isolate the unique influences of particular structural characteristics, because they exist in a complex interplay with a range of other factors (e.g. staff salaries).

In realization of this complexity, we therefore call for an increased research focus on the caregiver perspective and a broader view on how structural conditions such as caregiver/child ratio, group size, and caregiver education and training interact with one another to create different daycare environments and contexts for children's wellbeing, learning and development.

Implications for practice and policy

The findings from the present review suggest that caregivers and independent observers perceive caregiver/child ratio and group size to be important characteristics of ECEC settings which affect the everyday life and the children in a number of ways. Findings suggest that children benefit from smaller group sizes and fewer children per adult, and that caregivers in Scandinavian ECEC perceive the optimal group size and caregiver/child ratio to be lower than what they were working with at the time of the data collection. When compared with most other European countries, official statistics suggest that Scandinavian ECEC has fewer children per caregiver and smaller group sizes. However, within the public debate in Scandinavian countries, parents, caregivers, and other stakeholders suggest that the official available statistics may not be adequate and fail to account for the everyday experiences of children, parents, and caregivers. Therefore, finding alternative ways of calculating, observing, and measuring caregiver/child ratio and group size in ECEC is paramount in order to fully understand the potential implications of changes to these. Furthermore, there is an urgent need for more research specifically focused on studying what the optimal caregiver/child ratio and group size is perceived to be by caregivers, children, and parents. Caregivers, children, and parents are the central stakeholders in ECEC and thus a more robust research literature documenting their perspectives may inform policy makers.

Strengths and limitations of the review process

We performed comprehensive electronic searches and used additional strategies to identify potential studies, and we believe that we have identified all studies meeting the inclusion criteria for the present review, if caregiver/child ratio and group size in ECEC was mentioned in title, key words, or abstracts. However, we may not have been able to identify all studies in which the theme of ratio and group size emerged as an analytic theme from data collected for another purpose.

Strength and limitations of the reviewed evidence

Although the included qualitative studies in this review provide some interesting preliminary insights into the way in which caregiver/child ratio and group size in daycare affects children and everyday life in ECEC as perceived by caregivers or observers, it constitutes a serious limitation of the reviewed studies that very few of the studies clarified in actual

numbers, what is meant by “smaller” and “larger” group sizes and caregiver/child ratios. As stated in the introduction, the available statistics may not be adequate and thus a strengthening of the knowledge base requires that studies specify the actual day to day caregiver/child ratios and group sizes within the Scandinavian ECEC settings where interviews and observations take place. Similarly, the evidence would also be significantly strengthened by experimental intervention studies on quality improvement that introduced more favorable group sizes and caregiver/child ratios in daycare settings and then interviewed practitioners about their experiences.

Conclusion

Based on the comprehensive search strategy employed in the present review, it is a major finding that there is a lack of qualitative research aimed directly at exploring the ways in which caregiver/child ratio and group size in Scandinavian ECEC influence the everyday life and experiences of children and caregivers. We found 12 qualitative studies which included data on the ways in which caregiver/child ratio and group size in daycare is perceived to affect children and everyday life in ECEC from the perspective of caregivers or independent observers. However, it is important to emphasize that not all of these studies had ratio and group size as their main research focus. The limited number of studies and the lack of studies exploring the perspectives of children and parents is both surprising and an important finding since the question of what characterizes high quality daycare should be a matter of priority given the high enrolment rate for children in Scandinavian ECEC. When exploring the characteristics of high quality ECEC, qualitative research is needed in order to fully capture the locally embedded ways in which ratio and group size are perceived to influence the everyday life and experiences of children and caregivers in ECEC (Svinth & Henningsen, 2021). From our analysis, it can be highlighted that all, except for one study, suggest (1) that it is beneficial to have fewer children per caregiver and smaller group sizes, and (2) that there are adverse effects of large groups and fewer caregivers. Within the present review, the included studies suggest that caregiver/child ratio and group size influence caregiver/child interactions, and that lower ratios and larger group sizes are perceived to be associated with fewer and less stimulating caregiver/child interactions. Similarly, findings suggest that caregiver/child ratio and group size are perceived to influence child/child interactions, and it is observed that when the group size is large, more children are aimlessly wandering around without meaningfully engaging in interactions, dialogues, or activities.

Overall, we find that the 11 studies included in the thematic analysis provide interesting and important knowledge about ratio and group size conditions in Scandinavian ECEC. However, we also see an urgent need for more research focused on exploring what can be considered optimal caregiver/child ratio and group size in ECEC from the perspectives of parents, caregivers, and children as the central stakeholders in ECEC, as research specifically focused on studying what the optimal caregiver/child ratio and group size is perceived to be may inform policy makers.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

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