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The Relationship Between the Process Quality of Early Childhood Education and Care and the Well-Being and Involvement of Toddlers

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Abstract

The process quality of Dutch Early Childhood Education and Care (ECEC) is widely discussed. However, research has mainly looked at the predictive value for later developmental outcomes and less at the predictive value for the well-being and involvement of toddlers in the here and now. The current study examines whether the process quality of ECEC is a predictor of well-being and involvement. Process quality can be divided into emotional support and educational support. Both are included in this study using different approaches to process quality. It is examined whether the process quality at group level and the individually experienced quality by a toddler in the group influence the well-being and involvement of toddlers, or only one or none of the approaches. The process quality at group level is examined by means of the CLASS Toddler and the individually experienced process quality by means of the inCLASS Toddler. The outcome variables, well-being and involvement, are measured with the Leuven Well-Being and Involvement Scales. The results show that both classroom-level emotional and educational support do not predict well-being and involvement. The individually experienced process quality has turned out to be related to well-being, but not for involvement. The quality of peer interactions appeared unrelated to their well-being and involvement of toddlers. These results are not consistent with previous studies. Limitations and implications are discussed.

Keywords: early childhood education and care, well-being, involvement, process quality, CLASS Toddler, inCLASS Toddler

The Relationship Between the Process Quality of Early Childhood Education and Care and the Well-Being and Involvement of Toddlers

Nearly a million Dutch children use formal childcare every year (CBS, 2020). It is known that toddlers benefit from high-quality Early Childhood Education and Care (ECEC) in many ways. For example, it has been shown that high-quality ECEC promotes emotional, social and cognitive development (Howes & James, 2002; Spieker, Nelson, Petras, Jolley, & Barnard, 2003; Stahmer & Carter, 2007). Because many children go to childcare and their development is affected by this, it is important to research the quality of ECEC.

Within the concept of quality, two categories can be distinguished: structural and process quality (Slot, Leseman, Verhagen, & Mulder, 2015). The structural quality in ECEC includes for example group size, child-teacher ratio and the use of an education program. The process quality of ECEC is about the quality of interactions. This concerns mainly the interactions between the caregiver and the children, but also the interactions between children. This last category will be the focus of the current study.

Process quality is specifically about the processes that are directly experienced by the children (Phillips & Howes, 1987). How these processes are experienced, and thus the degree of quality, influences the developmental outcomes and the well-being of children (Peisner-Feinberg & Burchinal, 1997). Previous research has mainly focused on the developmental outcomes, at a later age. An example is a study that shows that the quality of childcare has an effect on long-term cognitive and social-emotional development (Peisner-Feinberg et al., 2001). However, the aspects that matter in the here and now, such as well-being and involvement, have not been focused on in research. Well-being is about the children's feelings and how the staff interpret those feelings, which includes social and emotional domains (Giske et al., 2018). Involvement can be seen as a cognitive measure of the here and now, as research has shown that involvement is a strong predictor of later cognitive functioning (Ladd & Dinella, 2009). Involvement mainly concerns the degree of attention that a child has for a certain task or activity, in which the child also has motivation to participate.

When taking into account that the long-term outcomes are considered to be of importance, what does the quality of ECEC tell us about the current situation? To what extent does the degree of quality tell us something about the well-being and involvement of toddlers in ECEC? If the process quality is high, does this really mean that the child is doing fine, both emotionally and cognitively? Therefore, this research is about to what extent the process quality is related to the well-being and involvement of toddlers in Dutch ECEC.

Process Quality: Emotional and Educational Support

In many studies, the Classroom Assessment Scoring System (CLASS) is used to measure process quality (La Paro, Hamre, & Pianta, 2011). Process quality is split into

emotional and educational support in this measure. Previous research has shown that emotional support is mostly related to well-being (Love, Schochet, & Meckstroth, 1996). A more recent study revealed that expressing clear expectations; following the development of the toddlers; and reproving in a positive manner have a positive effect on the well-being of the children (Bredekamp & Copple, 2008). Less is known about the relationship between educational process quality and well-being. However, Bredekamp and Copple (2008) have also found that offering adequate activities and materials can positively influence well-being. Taken all into account, it seems that especially emotional process quality is related to the well-being of toddlers.

The idea of educational support is to involve children optimally in a learning situation (La Paro, Hamre, & Pianta, 2011). The connection between educational support and involvement therefore seems obvious. However, research has shown that educational and emotional support together influence the involvement of children, because educational support has a greater effect on the involvement when there is a positive emotional atmosphere (Aydođan, Farran, & Sađsöz, 2015). Furthermore, there are some other recent studies that have shown that there is a relationship between the emotional supportive behaviors and the involvement of individual toddlers (Coelho, Cadima, & Pinto, 2019; Curby, Downer, & Booren, 2014). To summarize, emotional and educational process quality both seem to have a connection with the involvement of toddlers.

Different Approaches to Process Quality

When looking at process quality as just described, it is about the whole group of children at a specific childcare facility rather than an individual child. This means that this definition of process quality is not about the individual experiences of the children in a group, but about the average of the experiences of all children in that group. However, not every child is equally sensitive to the degree of quality, which is called differential susceptibility (Pluess & Belsky, 2010). Some children are more affected by environmental circumstances, in this case the quality of ECEC, than others (Belsky & Pluess, 2009). To elaborate, if the quality of childcare is high, this does not mean that every child in the same group benefits equally from this quality level. Usually, toddlers that are highly susceptible are more sensitive to the beneficial aspects of high-quality ECEC and the adverse aspects of low-quality ECEC (Belsky, Bakermans-Kranenburg, & Van IJzendoorn, 2007).

Based on these findings, it can be stated that there are differences in the susceptibility among toddlers to the overall quality level of ECEC. Therefore, it is interesting to include the experienced quality of individual toddlers rather than just the quality on the group level. A recent study has shown that emotional support at group level is related to positive interactions with the teachers as experienced by individual children (i.e. at child level; Guedes, Cadima, Aguiar, Aguiar, & Barata, 2020). Thus, it can be expected that the

quality of ECEC at the group and individual level is interrelated and that both are important approaches to process quality.

The Role of Peers

As mentioned before, process quality is not only about the interactions between the children and the caregiver, but also about the interactions of children with their peers (Phillips & Howes, 1987). According to Guedes and colleagues (2020) the quality of peer interactions increases sharply between the ages of 19 and 36 months. Engagement with peers also increases when growing older (Vitiello, Booren, Downer, & Williford, 2012). Due to the growing role of peers in the life of toddlers, peers can be expected to have an increasing influence at this age.

Besides, it is already known that social competences contribute to the well-being of children (Giske et al., 2018). Howes and James (2002) have found that a pleasant social and emotional climate, which is depending on both interactions with caregivers and peers, is necessary for toddlers to gain these social competences. Altogether, it may be that in addition to the caregivers, peers also play a role in the well-being and involvement of toddlers in ECEC.

The Present Study

To summarize, the aim of this study is to determine the predictive value of emotional and educational process quality on the well-being and involvement of toddlers in ECEC by including both the group level and the individually experienced quality. In addition to the interactions with the teacher, the quality of peer interactions are included. All aspects considered, the research question of the current study is: to what extent is process quality a predictor for the well-being and involvement of toddlers in ECEC? To achieve clear results, well-being and involvement are discussed separately. In conclusion, the research question can be answered by the following sub-questions:

- What is the relationship between emotional process quality and well-being?
- What is the relationship between educational process quality and well-being?
- What is the relationship between quality of teacher interactions and well-being?
- What is the relationship between quality of peer interactions and well-being?
- What is the relationship between process quality and the quality of teacher interactions together and well-being?
- What is the relationship between emotional process quality and involvement?
- What is the relationship between educational process quality and involvement?
- What is the relationship between quality of teacher interactions and involvement?
- What is the relationship between quality of peer interactions and involvement?
- What is the relationship between process quality and the quality of teacher interactions together and involvement?

Based on the findings of previous studies it is expected that process quality, at both group and individual level, are related to the well-being and involvement of toddlers in ECEC (e.g. Guedes, Cadima, Aguiar, Aguiar, & Barata, 2020). Both emotional and educational process quality are expected to influence the well-being and involvement, whereby it is expected that the educational quality will mainly be related to the involvement of toddlers (e.g. Bredekamp & Copple, 2008; Aydođan, Farran, & Sađsöz, 2015). Finally, it is expected that, in addition to the caregivers, peers will also contribute to the well-being and involvement of toddlers in ECEC (e.g. Vitiello, Booren, Downer, & Williford, 2012).

Method

Participants

The sample of the current study concerns the childcare locations that participated in the National Quality Monitor for Childcare (Landelijke Kwaliteitsmonitor Kinderopvang; LKK) in 2017, 2018 and 2019. This comprises a total of 166 childcare locations, spread across the Netherlands. Not all of these locations have enough data available to participate in the current study. This is mainly due to incomplete questionnaires and unusable video recordings. The data has turned out to be complete for 151 locations. In 2017, the data was complete for 55 locations (96.5%). These were 50 locations in 2018 (87.7%) and 46 locations in 2019 (88.5%). The dataset concerns a total of 89 toddler care locations (89.9%) and 62 nurseries (92.5%) that care for toddlers. The latter category consists of 30 toddler groups (96.7%) and 32 mixed-age groups (88.9%), which means that babies are in the same group as the toddlers.

The groups at the 151 participating locations consist of an average of eight to nine children, with an average of one caregiver per four to five toddlers. Most locations therefore have multiple caregivers in the same group at the same time. A total of 240 caregivers participated in the current study, of which 97.5 percent is female. The age of all participants ranges from 19 to 72 years, with the average age being 42.36 years.

The LKK used a stratified sample to draw a representative sample. The strata in this sample are region, degree of urbanization and size of the organization. All categories within the different strata are represented in the data made available for the current study, even though these data concerns only three out of four years of the original LKK study. This is an important factor in ensuring the validity of the current research.

Procedures

The LKK data are collected through site visits. During these visits, two observers collect observations, questionnaires and film recordings. To ensure reliability, the observers are trained in advance and found to be reliable and work with a fieldwork protocol during data collection. The inter-rater reliability of the observation data of LKK research has proven to be high with an ICC of .84 (LKK, 2018). Before the site visit, the informed consent procedure has already been started, in which both employees and parents must

actively give permission for participating in the study. It has also been stated that they have the right to withdraw at any time.

Various observation instruments are used to conduct the observations. The film recordings are used to take even more observations afterwards. At any location, about four observations are made with each measuring instrument. An average is taken of these observations in the final dataset. Some of the observation instruments measure at the level of an individual child, while the other instruments measure at group level. To be able to analyze and compare all data, the data of individual children in the same group is also aggregated to an average. Finally, the locations with missing data are removed from the dataset.

Measures

Leuven Welbevinden en Betrokkenheidsschalen. The measures to determine the well-being and involvement of toddlers in ECEC, are the Leuven Well-being and Involvement Scales. In this measure, well-being is defined as joy, being yourself, being relaxed, opening up and showing self-confidence (Laevers, Debruyckere, Silkens, & Snoeck, 2005). Involvement is defined as concentration, motivation and intense mental activity. Both aspects are measured on a five point-scale, at which a score below 2.5 is considered low and a score of 3.5 or higher is considered high. A large-scale study into the quality of Belgian childcare confirmed both the reliability and the validity of this measuring instrument (Laevers et al., 2009).

CLASS Toddler. To measure the emotional and educational process quality at group level, the CLASS Toddler is used. The CLASS Toddler is a measure that is about the average experience of all children in a group and has proven to be reliable and valid in Dutch ECEC (Slot, Boom, Verhagen, & Leseman, 2017). The internal consistency is high for both the emotional support domain ($\alpha = .74$) and the educational support domain ($\alpha = .79$) when looking at Dutch toddler care (LKK, 2018).

In the CLASS Toddler, the domain emotional support consists of the dimensions: positive climate, negative climate, teacher sensitivity, regard for child perspectives and behavior guidance (La Paro, Hamre, & Pianta, 2012). Positive climate is about the degree of warmth, respect and joy during interactions between caregivers and children. Negative climate reflects the expressed negativity by the caregivers and the children. The scores on the latter dimension are reversed. Teacher sensitivity is the extent to which the caregiver notice and respond to the needs of the children. Regard for child perspectives implies to what extent the expressions and ideas of caregiver fits the interests of the children and the encouragement of independence. Finally, behavior guidance is about the caregiver's effort to guide the children's behavior and to avoid negative behavior in an effective way.

The domain educational support consists of the dimensions: facilitation of learning, quality of feedback and language modeling. The first dimension reflects the way in which

the caregiver provokes thinking and reasoning and the extent to which the children are supervised with this. Quality of feedback is about the extent of reactions of the caregiver that contribute to the children's competence development and knowledge acquisition, and the degree of stimulating the children to finish the activities. Language modeling reflects provoking and encouraging the children to speak. All dimensions of the CLASS Toddler are measured on a seven point-scale, whereby a score of one or two is considered low and a score of six or seven is considered high.

inCLASS Toddler. To get an idea of the individually experienced process quality and of the role of peers, the inCLASS Toddler is used. The inCLASS can be seen as a reliable and valid observation system (Downer, Booren, Lima, Luckner, & Pianta, 2010; Slot, Bleses, Downer, 2015). The internal consistency is high for both the teacher interactions domain ($\alpha = .87$) and the peer interactions domain ($\alpha = .90$) when looking at Dutch toddler care (LKK, 2018).

The first domain is teacher interactions and is used to measure the individually experienced process quality. This consists of two dimensions: positive engagement and teacher communication. Positive engagement is about the emotional closeness and the use of the caregiver as a secure base. Teacher communication reflects to what extent the child is initiating and maintaining interaction with the caregiver.

The second domain is peer interactions and consists of the dimensions: peer sociability, peer communication and peer assertiveness. This domain is used to investigate to what extent peers matter for the well-being and involvement of toddlers. Peer sociability includes the degree of seeking out peers and sharing positive emotions and behaviors with them. Peer communication is the extent to which the child initiate and maintains interactions with peers by using language. The last dimension reflects expressed leadership and self-confidence in the interactions between the child and his peers. The dimensions of the inCLASS Toddler are also measured on a seven point-scale. As in the CLASS Toddler, a score of one or two is considered low and a score of six or seven is considered high.

Questionnaires. Finally, a questionnaire is used to measure some characteristics of the childcare locations. The subjects that are relevant for the current study are the group size, the child-caregiver ratio and whether there are babies in the same group as the toddlers.

Analysis strategy

As mentioned in the introduction, the research question of the current study is: to what extent is process quality a predictor for the well-being and involvement of toddlers in ECEC? The emotional, educational and individually experienced process quality is taken into account and the role of peers is also examined. In all questions, wellbeing or involvement is the dependent variable. The independent variables are the dimensions of the CLASS Toddler and the inCLASS Toddler, which are described in the previous

paragraph. Both the dependent variables and all independent variables are of interval measure levels.

Since the predictive value of the independent variables on the independent variables will be determined, a multiple regression will be used in answering each sub-question. In the dataset with the aggregated scores, the scores are first standardized in order to use data on different scales in the same regression model. In the regressions, there are some control variables needed. The control variables that will be used in this study are group size, child-caregiver ratio and whether there are babies in the same group as the toddlers. To control for these variables, a hierarchical multiple regression model is used. The control variables are entered in step 1, after which the independent variables of the relevant sub-question are entered in step 2. For the final sub-question of both well-being and involvement, the total CLASS score is entered in step 2 and the average score on the inCLASS domain teacher interaction is entered in step 3. In this way it is examined whether the CLASS and inCLASS together are a predictor of well-being or involvement, or just one of the two. Finally, Cohen's f^2 is used to determine the effect size of the significant outcomes, with $f^2 \geq .02$ indicating a small effect, $f^2 \geq .15$ indicating a medium effect and $f^2 \geq .35$ indicating a large effect (Cohen, 1988).

Results

The descriptive statistics of the variables of all measures are presented in Table 1.

Table 1

Descriptive Statistics of All Variables, reflecting the Aggregated Classroom Level Information.

	<i>N</i>	<i>M</i>	<i>SD</i>	Range
Presence of babies	151	.21	.4	0-1
Group size	151	8.92	3.2	2.5-16.0
Child-teacher ratio	151	.27	.2	0-1.26
Well-being	151	3.48	.2	2.94-4.00
Involvement	151	2.98	.3	2.27-3.78
CLASS Toddler				
Emotional support	151	5.71	.47	4.4-6.8
Positive climate	151	5.97	.63	4.5-7.0
Negative climate (recoded)	151	6.90	.21	5.75-7.00
Teacher sensitivity	151	5.73	.71	3.5-7.0
Regard for child perspectives	151	4.50	.81	2.25-6.33
Behavior guidance	151	5.46	.75	3-7
Educational support	151	3.38	.70	1.67-5.17
Facilitation of learning and development	151	3.89	.79	1.67-5.67
Quality of feedback	151	2.92	.83	1.25-5.50
Language modeling	151	3.33	.83	1.75-5.50
Total score	151	4.84	.48	3.66-6.03

inCLASS Toddler				
Teacher interactions	151	4.05	.87	1.42-7.00
Positive engagement with teacher	151	4.35	.81	1.67-7.00
Teacher communication	151	3.74	1.02	1.17-7.00
Peer interactions	151	2.82	.72	1.00-4.78
Peer sociability	151	3.74	.72	1.00-5.67
Peer communication	151	2.46	.82	1.00-5.11
Peer assertiveness	151	2.25	.73	1-5

It can be concluded that the means of the CLASS domains of emotional support ($M = 5.71$) and educational support ($M = 3.38$) and the inCLASS domain peer interactions ($M = 2.82$) are average. The average of emotional support tends towards a high score, while the averages of educational support and peer interactions tend towards a low score. The mean of well-being ($M = 3.48$), involvement ($M = 2.98$) and the inCLASS domain teacher interactions ($M = 4.05$) is average.

Table 2 shows the bivariate correlations between all variables. There were moderate correlations between the CLASS dimensions. This also applies to the correlations between the inCLASS dimensions. Lastly, there were also significant correlations between the CLASS dimension positive climate and well-being and between almost all inCLASS dimensions and well-being. However, these correlations were smaller in magnitude.

To test the hypotheses that different aspects of process quality can account for a significant proportion of the variance in well-being and/or involvement, beyond that already accounted for the presence of babies, group size and child-teacher ratio, ten hierarchical multiple regression analyses are employed. These regressions are performed with standardized scores.

Before interpreting the results of all ten regressions, a number of assumptions were tested. Stem-and-leaf plots and boxplots indicated that each variable was normally distributed and free from univariate outliers, except the CLASS dimension Negative Climate (recoded). In this variable, there were a couple of outliers. However, when changing the value of the outliers or deleting them, the descriptive statistics did not dramatically change. For this reason, the outliers are included in the hierarchical multiple regression analyses with this CLASS dimension.

Thereafter, inspection of the normal probability plots of standardized predicted values indicated that the assumptions of normality, linearity and homoscedasticity of residuals were met. Third, relatively high tolerances for all predictors in each analysis indicated that multicollinearity would not interfere with the ability to interpret the regression outcomes.

Table 2

Bivariate Correlations between the CLASS and inCLASS Dimensions, Well-being and Involvement reflecting the Aggregated Classroom Level Information.

	CLASS Toddler								inCLASS Toddler						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CLASS Toddler															
1 Positive climate		.32**	.65**	.26**	.44**	.35**	.26**	.26**	.12	-.01	-.07	-.10	-.08	.17*	.10
2 Negative climate (recoded)			.36**	.11	.32**	.11	.04	.05	.01	-.05	-.01	-.05	-.16 [†]	.03	.06
3 Teacher sensitivity				.53**	.62**	.52**	.39**	.31**	.17*	.12	-.02	-.00	-.05	.07	.05
4 Regard for child perspectives					.41**	.41**	.35**	.20*	.11	.17*	-.06	-.02	-.05	.01	-.01
5 Behavior guidance						.39**	.23**	.28**	.05	.05	.04	.05	.03	.05	.07
6 Facilitation of learning and development							.63**	.63**	.09	.09	-.08	-.07	-.08	-.02	-.04
7 Quality of feedback								.59**	.17*	.14 [†]	-.05	-.03	-.09	-.02	-.09
8 Language modeling									.06	-.03	.02	-.01	-.01	.02	-.06
inCLASS Toddler															
9 Positive engagement with teacher										.82**	.21*	.11	.13	.27**	.06
10 Teacher communication											.28**	.30**	.29**	.19*	-.02
11 Peer sociability												.82**	.81**	.17*	.09
12 Peer communication													.89**	.14 [†]	.08
13 Peer assertiveness														.15 [†]	.12
14 Well-being															.69**
15 Involvement															

* $p < .05$. ** $p < .01$. [†] $p < .10$.

Finally, Mahalanobis distance did exceed the critical χ^2 in all regression models, indicating that there were some multivariate outliers. On the other hand, Cook’s distance for all these cases was far below 1. Therefore, it can be assumed that the impact of the multivariate outliers have on the predictive value of the regression models is negligible.

Well-being

Step 1 was the same for each hierarchical multiple regression. The presence of babies, the group size and the child-teacher ratio accounted for a significant 5.5% of the variance in well-being, $R^2 = .06$, $F(3, 147) = 2.87$, $p = .038$. As can be seen in Table 3, the only significant predictor of well-being, was group size ($sr^2 = .04$). However, child-teacher ratio was also close to significant ($sr^2 = .02$). In Step 2, variables have been added to the control variables. The five different models of step 2 are also displayed in Table 3. According to the results of these five regression models, process quality measured by the CLASS Toddler did not predict the well-being of toddlers in Dutch ECEC. However, process quality measured by the inCLASS Toddler was a predictor of well-being, especially when looking at the teacher interactions as experienced by individual children. The significant outcomes will be further explained.

Table 3
Standardized (β) Regression Coefficients and Squared Semi-Partial Correlations (sr^2) for Each Predictor Variable on the Outcome Variables Well-being and Involvement.

	Well-being		Involvement	
	β [95% CI]	sr^2	β [95% CI]	sr^2
Step 1				
Presence of babies	.03 [-.15, .21]	.00	.01 [-.17, .20]	.00
Group size	-.25 [-.45, -.06]*	.04	-.13 [-.33, .07]	.01
Child-teacher ratio	-.15 [-.34, .03] [†]	.02	-.12 [-.31, .06]	.01
Step 2				
Model 1			Model 6	
Positive climate	.19 [-.02, .40] [†]	.02	.10 [-.12, .32]	.01
Negative climate (recoded)	-.03 [-.21, .15]	.00	.03 [-.15, .21]	.00
Teacher sensitivity	-.02 [-.28, .25]	.00	-.02 [-.29, .25]	.00
Regard for child perspectives	-.05 [-.24, .15]	.00	-.07 [-.27, .13]	.00
Behavior guidance	.01 [-.20, .21]	.00	.07 [-.15, .28]	.00
Model 2			Model 7	
Facilitation of learning and development	-.04 [-.26, .19]	.00	.03 [-.20, .26]	.00
Quality of feedback	-.01 [-.23, .20]	.00	-.09 [-.32, .13]	.00
Language modeling	.04 [-.19, .26]	.00	-.03 [-.25, .20]	.00

Model 3			Model 8		
Positive engagement with teacher	.35 [.08, .62]**	.04	.20 [-.08, .48]		.01
Teacher communication	-.12 [-.39, .15]	.00	-.19 [-.47, .09]		.01
Model 4			Model 9		
Peer sociability	.19 [-.11, .49]	.01	.06 [-.25, .36]		.00
Peer communication	-.08 [-.45, .29]	.00	-.17 [-.55, .21]		.01
Peer assertiveness	.08 [-.28, .44]	.00	.22 [-.15, .59]		.01
Model 5			Model 10		
Total CLASS score	.03 [-.13, .20]	.00	-.02 [-.18, .15]		.00
Teacher interaction	.21 [.05, .37]**	.04	.01 [-.16, .17]		.00

Note. *B* is the same as β , because only standardized scores have been used in all models.

* $p < .05$. ** $p < .01$. † $p < .10$.

In Model 3, the two dimensions of the inCLASS domain were added to the model with the control variables, as is displayed in Table 3. These dimensions accounted for an additional 6.8% of the variance in well-being, $\Delta R^2 = .07$, $\Delta F(2, 145) = 4.06$, $p = .005$. In combination, the five variables explained 12.3% of the variance in well-being, $R^2 = .12$, $F(5, 145) = 8.16$, $p = .002$. According to Cohen (1988), this can be considered as small to medium ($f^2 = .14$). As can be seen in Table 3, the only significant predictor of well-being, next to group size, was positive engagement with teacher ($sr^2 = .04$).

In Model 5, the overall CLASS score and the inCLASS domain teacher interaction have been added stepwise (Table 3). In step 2, the overall CLASS score accounted for an additional 0.1% of the variance in well-being, $\Delta R^2 = .00$, $\Delta F(1, 146) = 0.16$, $p = .686$. In Step 3, the inCLASS domain teacher interaction accounted for an additional 4.3% of the variance in well-being, $\Delta R^2 = .04$, $\Delta F(1, 145) = 6.91$, $p = .01$. In combination, the five variables explained 10% of the variance in well-being, $R^2 = .10$, $F(5, 145) = 3.22$, $p = .009$. According to Cohen (1988), this can be considered as small to medium ($f^2 = .11$). As can be seen in Table 3, the only significant predictor of well-being, next to group size, was teacher interaction ($sr^2 = .04$).

Involvement

Also for the hierarchical multiple regressions on children’s degree of involvement, step 1 was the same for each model. The presence of babies, the group size and the child-teacher ratio accounted for a non-significant 3.5% of the variance in involvement, $R^2 = .04$, $F(3, 147) = .89$, $p = .447$. Step 2, in which variables have been added to the control variables, was in all regression models non-significant. So, according to the results of the five regression models on involvement, process quality measured by the CLASS or inCLASS Toddler was not a predictor of the involvement of toddlers in Dutch ECEC. The outcomes are displayed in Table 3.

Discussion

The present study investigated the relationship between process quality and the well-being and involvement of toddlers in Dutch ECEC, because previous research mainly focused on later outcomes instead of the here and now (e.g. Peisner-Feinberg et al., 2001). In order to get a complete picture of this relationship, different aspects of process quality were taken into account. Process quality was defined as both emotional and educational support. Additionally, this study did not only look at the quality at group level, but also at the individually experienced quality. It was also investigated whether these two levels together can predict well-being and involvement. Furthermore, it was examined whether, in addition to the caregiver, peers also play a role in the well-being and involvement of toddlers.

The results showed that both emotional and educational process quality were unrelated to children's expression of well-being and/or involvement. This did not match the hypothesis, because it was expected that both emotional and educational support would be related to the well-being and involvement of toddlers as previous research showed that there was a relationship between these variables (Copple & Bredekamp, 2008; Love, Schochet, & Meckstroth, 1996). The quality of peer interactions did not appear to play a role in children's well-being and involvement. This also did not match the hypothesis, because it was expected that peers would influence the well-being and involvement of toddlers, since peers have a growing role in the life at this age (Vitiello, Booren, Downer, & Williford, 2012). However, the individually experienced process quality, as measured with the inCLASS Toddler domain, was only related to the well-being of toddlers. This could be explained by the degree of positive engagement with the teacher. Thus, a high degree of positive engagement with the teacher was related to better well-being for toddlers. Together with the individual level of process quality, the group level of process quality was related to the well-being of toddlers in ECEC despite the fact that the overall process quality at group level was not related to both well-being. This was entirely due to the quality of the interactions with the teacher, which have previously proved to be related to well-being. Therefore, the hypothesis that the individual experienced process quality would be related to the well-being of toddlers in ECEC has been accepted. However, it was not expected that the individual experiences process quality was the only relationship confirmed, because this hypothesis is derived from an earlier study that showed that both approaches to process quality are interrelated (Guedes et al., 2020). But, it has been found that positive climate at group level correlates with well-being. An important aspect of a positive climate is showing warmth, joy and respect in the interactions between the caregiver and the children (La Paro, Hamre, & Pianta, 2012). Because positive engagement with teacher turned out to be positively related to well-being, it can be said that the relationship between a toddler and the caregiver is very important for the well-being of toddlers. This is in line

with the earlier mentioned study of Guedes and colleagues (2020) that has shown that emotional support at group level is related to positive interactions with the teachers at child level. To conclude, the only relationship that was expected and is confirmed in the present study is the relationship between the individually experienced quality of the interactions with the teacher and the well-being of toddlers. In addition, it has been found that a positive relationship between the toddlers and their caregiver can contribute to their well-being.

The most contradictory finding was that on an individual level a relationship is found with well-being when looking at the emotional domain, while that turned out not to be the case at group level. A possible explanation for not finding a relation between emotional support at group level and well-being is too little variance of this independent variable. There were no low scores on emotional support in the data set, so that the whole range of possible scores is not represented. Since all scores were close to the average and therefore very similar, it is not surprising that this variable had no influence on well-being. In addition, a correlation between emotional support and well-being has been found, which means that there is indeed a connection. It could be possible that a small variance is the reason that no relationship has been found between emotional support at group level and well-being, despite it being present on individual level. In addition, the average of the emotional scores at this level is considerably lower, while at an individual level the entire range of scores occurs in the data set. It seems that a more precise picture of the emotional quality has emerged at an individual level than at a group level. This may explain why the individually experienced emotional quality was associated with well-being, in contrast to the emotional process quality at group level.

Another finding that is difficult to explain was that peers did not appear to affect the well-being and involvement of toddlers. When looking at this variable in the dataset, it is striking that the scores were very low. The average score was between low and average and there were no scores in the high category. It is possible that a threshold value should have been reached in order to measure a relationship. Because the average score was so low, it is likely that this value has not been reached and this could explain why no relationship has been found between the quality of peer interactions and the well-being and involvement of toddlers.

There also were some limitations to the current study, which may explain why expectations have not been met. Firstly, there was some missing data. Of the 161 locations, 15 locations are not included in this study. It is possible that the sample did not give a valid representation of the population. Another limitation was the use of video recordings for the observations with the inCLASS Toddler and the Leuven Well-being and Involvement Scales. The recordings could have ensured that relevant information for the scoring of these instruments was not revealed. There was another limitation with regard

to the video recordings, namely that the inCLASS Toddler and the Leuven Well-being and Involvement Scales both were taken with the same video, while the CLASS Toddler was taken in real live and in other situations than those that are captured on video. Lastly, the inCLASS Toddler and the Leuven Well-being and Involvement Scales are both a measure on individual level, while the CLASS Toddler is a measure on group level. These limitations could explain why the individual experienced process quality measured with the inCLASS Toddler was related to the well-being of toddlers measured with the Leuven Well-being and Involvement Scales, while the process quality at group level measured with the CLASS Toddler was not.

All these limitations are not the only explanation for rejecting almost all hypotheses. In other studies using the Leuven Well-being and Involvement Scales, there were also not clear connections between process quality and well-being and/or involvement, although this could be expected based on literature (e.g. Declercq et al., 2016). In this respect, the present study was consistent with previous studies. The disagreement between the hypotheses and the results of this study can therefore also be explained by the measuring instrument that is used to measure well-being and involvement, which has not worked properly. If several studies have shown that no relationships are found between well-being and involvement and other constructs, the question is whether this instrument validly measures well-being and involvement or possibly overlooks important matters.

The results of the current study may be valuable for both contemporary studies into quality of ECEC and the ECEC itself. The importance of a good relationship between the caregiver and the toddlers has emerged. In Dutch childcare this can be taken into account by, for example, training caregivers in this in order to optimize the well-being of toddlers. In the field of research, the current study may be important when it comes to the adequacy of measuring instruments. This study has shown that it is possible for an instrument to not always measure the construct well enough to be able to make valid conclusions based on it. It is interesting for follow-up research to investigate whether the relationship between process quality and well-being and involvement might be more valid by means of other measures, or whether the results of the current measures may need to be analyzed differently. In this way, hopefully in the future more knowledge will be gained about what matters in the current ECEC for the well-being and involvement of toddlers, in addition to the relationship with their caregivers.

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