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Exploring children’s well-being in daycare: how do children feel all day?

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ABSTRACT
In an exploratory, intensive case study, we investigated the well-being of young children (0–4 years) with a time-sampling design. The total sample included 940 individual observations for 30 children during four consecutive weeks. Data collection involved external coding of videotaped episodes and caregiver- and parent-reported measures. Well-being was, on average, neutral for most children, but fluctuated significantly throughout the day. The level of well-being was higher during free play and caregiver-led activities, compared to lunch/snack and transitions during the program. Conflicts with other children were related to lower levels of well-being. Elder children had higher levels of well-being. We discuss implications for future research and practice to increase children’s well-being in early childhood education and care.

KEYWORDS
Well-being; sensitivity; childcare; early childhood education and care (ECEC); time-sampling; infant; toddler

Introduction
Well-being is a classic construct in health and social sciences (La Placa et al., 2013; Lewis, 2019). The definition of well-being for children often relates to the emotional, physical and social well-being (Stathum and Chase, 2010). In line with this, the well-being of young children in childcare research is taken to mean the behavior and signals through which children show that they feel safe and at ease and are enjoying the activities they are involved in. Well-being of children in early childhood education and care (ECEC), also referred to as hedonic or subjective well-being, is thus a subjective, positive state of the individual child at the micro-level (see Amerijckx and Humblet, 2014; Eid, 2008). Laevers (2017) indicates that the well-being of young children involves vitality (does the child look energetic and not tired?), relaxation (relaxed posture, no tics), openness (response to stimuli, open to contact with caregivers and children) and enjoyment (cheerful, laughing, quiet enjoyment). Children who do not feel at ease will show signs of discomfort, such as crying, yelling, unfocused attention-seeking behaviors, insecurity or tenseness. It is not necessary for all these signals to be present all the time to constitute well-being, and children can demonstrate these traits in different ways, depending on their age, character or temperament.
The level of well-being tells us how children are thriving socio-emotionally and can be considered an essential indicator of pedagogical quality of ECEC at child level (Laevers and Declercq, 2018). This concept fits in with a process-oriented and child-centered approach towards pedagogical quality (see Laevers, 2017; Laevers and Declercq, 2018; Riksen-Walraven, 2004). Pedagogical quality is thus not defined only by structural characteristics (i.e. group size, caregiver-to-child ratio, educational level of staff) and process quality (i.e. quality of caregiver-children interactions), but also involves the well-being of children in the ‘here and now’ at various moments during the ECEC program.

Previous childcare studies that measured children’s well-being with observation have reported only average scores for individual children (De Kruif et al., 2007; Groeneveld et al., 2010) or aggregated group scores (Declercq et al., 2016); hence, the report of dynamic well-being scores for individual children was not a part of these studies. Recent studies have focused on children’s well-being in very specific contexts. In the context of Norwegian childcare, Sando, Kleppe and Hansen Sandseter (2021) focused on risky play and reported relatively high levels of well-being. In a study of some U.S. centers, Laurin and colleagues (2021) focused on diapering and found that children’s well-being was higher when caregivers provided positive support during this routine.

Sensitivity of the caregiver is an important feature of high-quality environments for infants and toddlers and may also be related to children’s well-being in childcare. Self-regulation and inhibitory control are still developing for infants and toddlers and they cannot regulate yet their emotion-focused coping (Kopp, 2009; Thompson, 1991). Various authors have therefore stressed the importance of trusted caregivers, who may promptly intervene and provide emotional support when children are distressed (Helmerhorst et al., 2014; Laurin et al., 2021; De Schipper et al., 2004; Thompson, 1991). Further, young children may experience stress and discomfort when they have conflicts with peers in the group (Booren et al., 2012; Sandseter and Seland, 2018) and this variable may also influence their well-being.

Due to the aggregation of results at the child or group level from the Dutch and Belgium studies and the focus on a very specific part of the program in two other recent studies (Laurin et al., 2021; Sando et al., 2021), we do not know yet, the level of children’s well-being throughout the day in childcare. This state of affairs is in sharp contrast with the number of time-sampling studies that have provided direct insight into children’s engagement in early childcare. This line of research into children’s engagement in ECEC has shown that there is significant variation in children’s engagement during the day in preschools, which is systematically related to the different activities of the program (Buell et al., 2017; Carbonneau et al., 2020; Coelho et al., 2019; Vitiello et al., 2012). In the study of Vitiello et al. (2012), for example, free play and teacher-led activity were linked to greater engagement of children, while engagement was less during transition and eating situations. Observational research into preschool has also shown corresponding fluctuations of teacher behavior during the program. Meals and routine settings were typically related to low levels of instructional interactions and scaffolded teacher–child interactions compared to settings with free choice for children (see also Cabell et al., 2013; Fuligni et al., 2012). These findings have thus highlighted the significant changes in children’s engagement. Engagement and well-being are conceptually and empirically different variables, however (Laevers, 2017). In fact, two previous studies, published in
Dutch, that combined measures of well-being and engagement, made clear that children’s average level of well-being is relatively high, whereas the level of engagement is, on average, relatively low (Declercq et al., 2016; De Kruif et al., 2007). Hence, new studies should explore which program activities are related to children’s well-being during the day.

**Present study**

A dynamic perspective on children’s individual well-being in ECEC is important to explore whether well-being shows significant changes during the day and which factors are related to this. Little research has focused on child well-being as a vital part of infants’ and toddlers’ daily experiences in ECEC. We do not know of any observational time-sampling study of children’s well-being in childcare and the variability of young children’s well-being during the day is yet unknown, although recent studies suggest significant differences in children’s well-being at specific parts of the program (e.g. relatively low levels during diapering, relatively high levels during risky play).

Fitting in with a process-oriented and child-centered approach towards pedagogical quality (see Laevers, 2017; Laevers and Declercq, 2018; Riksen-Walraven, 2004), the purpose of this study was to investigate the dynamics and predictors of children’s individual well-being in early child care, as defined by Laevers (2017). We explored the relationship between well-being and dynamic variables, including program activities, caregiver behavior and peer conflicts across different parts of the program during the day. We selected these variables because previous studies found relationships with program activities (e.g. Sando et al., 2021), caregiver sensitivity (e.g. Laurin et al., 2021), and peer conflicts (e.g. Sandseter and Seland, 2018). Taking into account possible sources of variation in children’s well-being, we collected observational data in an extensive time-sampling frame, complemented with caregiver- and parent-reported measures, and explored predictors of well-being, including program activities, caregivers’ sensitivity and peer conflicts.

**Method**

**Study design and sample**

In an intensive repeated measurement design, a baby group (0–2 years) and a toddler group (2–4 years) at a daycare center in Amsterdam, the Netherlands, were observed on a daily basis for one month. Our study design included observational measures to chart children’s individual well-being and caregiver sensitivity, complemented with caregiver- and parent-reported questionnaires. The center, which was associated with a large childcare provider, had separate group areas for the baby group and the toddler group. The research location is a regular early childhood education and care center which follows the Dutch regulations for group size, caregiver-to-child ratios and certification of the caregivers. In total, 30 children were observed, including 14 infants and 16 toddlers (see Carbonneau et al., 2020 for a related design); the parents of three children did not give permission, so these children were not included in the study. The sample comprised an equal number of boys and girls. The average age of the children was 29 months,
varying from 2 to 47 months ($SD = 13.8$); in the Netherlands, children attend daycare from an early age (i.e. 2–3 months) to the age of four years. Infants were, on average, 15.6 months, varying from 2 to 24 months, and toddlers were on average 40 months, ranging from 29 to 47 months. The children attended the daycare center between one and five days per week with an average of 3.13 days ($SD = 1.0$).

**Procedure**

A team of observers filmed the children and caregivers with a single camera on every working day of the week except Wednesdays because few children attend daycare centers on that day in the Netherlands. Research assistants filmed the children indoors in four cycles per group. A cycle comprised videotaped observations of all persons (i.e. children and caregivers) in one group. In each cycle, one of the two caregivers was filmed first for 10 minutes, then the first half of the children (2 minutes per child), then the second caregiver (also a 10-minutes video episode), followed by the second half of the children (again 2 minutes per child). In a group with two caregivers and 10 children, for example, a cycle would last about 40 minutes (i.e. $2 \times 10$ minutes for the caregivers, $10 \times 2$ minutes for the children). A cycle generally lasted about 30–40 minutes; there are always two caregivers per group, but group size may vary in Dutch ECEC with smaller group sizes for infant groups (0–2 years) than toddler groups (2–4 years). The order in which the children were filmed was randomized; hence, observations were not related to specific behaviors of children (e.g. laughing, crying or otherwise salient behavior). Research assistants used the video time on the screen to ensure that each observation of a child period lasted for 2 minutes (see also Sando et al., 2021). The assistant then visited the next group and repeated this procedure. Observations typically started in the morning and ended in the afternoon. Sometimes a child was not filmed in a cycle, because he/she arrived later at the daycare center in the morning or was asleep during the day.

On the basis of the filmed episodes, a trained coder assessed children’s well-being; for all observations, research assistants involved in videotaping or coders involved in coding the videotapes were different persons to avoid possible contamination. The coders also indicated in which situation the child was observed, distinguishing between free play, a teacher-led activity, eating and/or drinking or a transition situation. A typical transition is the change in the program from lunch to free play, where all children are allowed to play in different activity centers (e.g. blocks center) in the group. Other transitions involve preparing the children to go outside or the staff making preparations for lunch while the children already sit at the table; these transitions may take a considerable amount of time. Free play is the play of individual children who decide for themselves where to play and with whom. A teacher-led activity involves a group activity which is introduced by the teacher to stimulate children’s development in various domains, including, for example, early literacy or dance. Eating and/or drinking is a regular part of the program when children have a little snack (e.g. fruit) in the morning and eat lunch in the middle of the day.

Finally, they noted whether there was a conflict between children in the filmed episodes, since peer conflicts can be expected to negatively affect well-being (Gevers Deynoot Schaub & Riksen-Walraven, 2006). A different coder, who was blind to
children’s well-being scores, assessed caregiver’s sensitivity (see Measures below) to rule out possible contamination between scores for children and for caregivers. Well-being was assessed by a different coder, who rated children’s well-being based on observation of the individual videotaped episodes (see Measures below).

In total, 940 observations were made in 16 different days (Monday, Thursday, Thursday, Friday) at four consecutive weeks. The average number of observations per child was 32.2 (SD = 13.8, min–max: 8–55); 96.6% of children were observed for more than 10 cycles. In our sample, 62 cycles involved teacher-directed activities (6.6% of all cycles), 286 free play (30.4%), 376 lunch or snack (40.0%) and 216 transitions (23.0%). There were some differences between the program of the infant and the toddler group. In particular, the toddler group had a less free play (18.5 vs. 50.1% of all observations) and more transitions (30.4 vs. 10.7% for the infant and toddler group, respectively). The percentages for teacher-directed activities (8.5 vs. 3.4%) and lunch or snacks (42.6 vs. 35.8%) were relatively similar. The distinguished parts of the program were well represented across children: 21 children (70%) had at least one cycle with a teacher-directed activity; 30 children (100%) with free play; 30 children (100%) with lunch or snack; and 27 children (90%) had at least once cycle with a transition. Three female caregivers worked at the infant group and also three female colleagues worked at the toddler group.

Finally, the parents and caregivers completed questionnaires related to the general well-being of the children in daycare. Parents also completed a brief questionnaire related to feelings of discomfort of their child (see Measures).

All caregivers and parents were informed about the research procedures prior to the study. Only caregivers and parents who agreed with the procedures participated in this study.

**Measures**

Well-being Scale (NCKO, 2008). The evaluation of the well-being of individual children in the daycare center was based on the work of Laevers (2017) and was assessed using an instrument developed by the Dutch Consortium for Childcare Research. The trained coders rated children’s well-being focusing on the following traits: vitality, relaxation, openness and enjoyment. It is not necessary for all these signals to be present all the time to constitute well-being, and children can demonstrate these traits in different ways, depending on their age, character or temperament. Well-being was scored on a 7-point scale, ranging from (1) very low emotional well-being (e.g. crying, screaming) to (7) very high emotional well-being (signs of enjoyment and happiness). A neutral score (score 4) indicates that neither well-being nor discomfort is predominant.

Prior to data collection, coders received a four-day training. The training consisted of four sessions which included a concise theoretical introduction and coding of 25 practice video episodes. Adequate interrater agreement with jury scores was defined for the Well-being scale as an intra-class correlation coefficient value of >.70 (ICC, two-way mixed, absolute agreement).

The well-being measure has been widely used in different studies (e.g. Barandiaran et al., 2015; Groeneveld et al., 2010; Werner et al., 2015). In a validation study, the measure showed adequate inter-observer reliability (see De Kruif et al., 2007; Helmerhorst et al., 2014).
Sensitive Responsivity (Caregiver Interaction Profile scales, De Kruif et al., 2007; Helmerhorst et al., 2014). Sensitive responsivity refers to the degree of sensitivity with which a caregiver responds to signals indicating that the child does not feel well or needs emotional support. Sensitive responsivity requires that caregivers are alert to the child’s condition and signals, know how to interpret them properly, and respond promptly and appropriately (Helmerhorst et al., 2014). A description is provided that starts with a general definition. Next, a brief description is provided distinguishing scores at the high (6, 7), middle (3, 4, 5) and low (1, 2) ranges of the scale.

Prior to data collection, all coders were trained in a four-day training. Adequate inter-rater agreement with jury scores was defined for the CIP scales as an intra-class correlation coefficient value of >.70 (ICC, two-way mixed, absolute agreement).

The CIP scales have been shown to be reliable and valid for use in child care centers for 0–4-year-old children. A validation study (De Kruif et al., 2007; Helmerhorst et al., 2014) showed adequate inter-observer reliability and stability of caregiver behavior as measured with this instrument.

Leiden Inventory for the Child’s Well-being in Day Care (LICW-D, version for parents and caregivers). This questionnaire was developed by De Schipper et al. (2004) to assess the well-being of children in day care, and can be filled in by parents as well as caregivers. The LICW-D consists of 12 items (e.g. ‘This child likes going to the day center’) that are assessed on a 6-point scale. The higher the score, the higher the level of well-being. De Schipper et al. (2004) report good consistency for their measure (α = .81) and the reliability of the scale in this study also proved adequate, both with regard to parents (.79) and caregivers (.89).

Early Childhood Behavior Questionnaire: Discomfort. This subscale of the ECBQ (Putnam, Gartstein, and Rothbart 2006) measures the level of discomfort in young children (e.g. ‘Did the bright light seem to bother your child?; ‘Did the noise trouble your child when he/she was in a noisy environment?’). The questionnaire is filled in by parents. The answers are presented on a seven-point scale, ranging from ‘never’ (score 1) to ‘always’ (score 7). The higher the score, the higher the level of discomfort experienced by the child. The instrument was found to be reliable and valid in the study of Putnam, Gartstein, and Rothbart (2006) and the internal consistency of the scale was also good in this study (α = .87).

Analysis

Taking account of the hierarchical structure of the information gathered, the data were analyzed with MLwiN using a multi-level regression model (see Bryk and Raudenbusch, 2002) with a child level (level 3), a day level (level 2) and a cycle level (level 1; see Laurin et al., 2021; Sando et al., 2021; Vitiello et al., 2012 for similar analytic approaches). Distinguishing these levels allowed an exploration of whether variance in well-being is related to cycles, days or children. A preliminary analysis showed no significant differences between the toddler and baby groups and or between the cycles within one day (see Von Suchodoletz et al., 2014), and, hence, scores were aggregated for statistical analysis. Statistically significant predictors were combined in a regression model with dynamic variables at program and caregiver level (see Model 1 in Table 1). Sensitivity scores for a cycle were paired to all children’s well-being scores within the same cycle. We also
analyzed an additional model with background characteristics at the child level and methodological level (i.e. the four cycles) to check the robustness of our findings (see Model 2).

### Results

Across observation cycles, the well-being of the children was typically neutral with an average score of 4.38 ($SD = 0.88$, min–max: 1–7), that is, slightly above the medium score of the scale. All levels of the seven-point scale were present (see Figure 1), but the median score ‘4’ was observed most frequently (48.8%), followed by the score ‘5’ (33.8%). About 10% (9.4%) of the observations involved low levels of well-being (defined as score $\leq 3$), whereas 41.8% indicated high levels of well-being (defined as scores $\geq 5$). Average well-being scores for the observed individual children ranged from a low 2.40 ($SD = 1.10$) to a high 5.81 ($SD = 0.92$).

Averaged observed well-being was related to parent- or caregiver-reported child well-being in our sample of 30 children, $r_s = .19$, $p = .327$ and .23, $p = .224$ respectively, although correlations are modest. The correlation between parent scores ($M = 4.96$, $SD = 0.64$) and caregiver scores ($M = 5.03$, $SD = 0.62$) was significant, $r_s = .51$, $p = .004$.

Observed well-being showed differences between the distinguished activities of the daycare program: 4.66 ($SD = 0.85$) during teacher-led activities, 4.40 ($SD = 1.04$) during

### Table 1. Multi-level model for the well-being of children in the daycare center.

<table>
<thead>
<tr>
<th>Fixed part</th>
<th>Model 0</th>
<th>Variance</th>
<th>Model 1</th>
<th>‘Explained’ variance Model 0 vs. 0</th>
<th>Model 2</th>
<th>‘Explained’ variance Model 2 vs. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.33*</td>
<td>(0.08)</td>
<td>3.92*** (0.20)</td>
<td>–</td>
<td>3.65*** (0.27)</td>
<td></td>
</tr>
<tr>
<td>Dynamic variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program: Free play</td>
<td>–</td>
<td>0.25*** (0.08)</td>
<td>–</td>
<td>0.26*** (0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program: Teacher-led activity</td>
<td>–</td>
<td>0.27* (0.11)</td>
<td>–</td>
<td>0.26* (0.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program: Lunch/ snack</td>
<td>–</td>
<td>–0.02 (0.07)</td>
<td>–</td>
<td>–0.00 (0.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child-child incident</td>
<td>–</td>
<td>–1.37*** (0.21)</td>
<td>–</td>
<td>–1.36*** (0.21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver Sensitivity</td>
<td>–</td>
<td>–0.07* (0.03)</td>
<td>–</td>
<td>–0.08* (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child variables</td>
<td>Age child (months)</td>
<td>0.02*** (0.01)</td>
<td>–</td>
<td>0.02* (0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (boy)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECBQ: Discomfort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nr. of days childcare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design variables</td>
<td>Cycle 1 (vs. 4)</td>
<td>–0.05 (0.07)</td>
<td>–</td>
<td>–0.05 (0.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycle 2 (vs. 4)</td>
<td>–0.06 (0.07)</td>
<td>–</td>
<td>–0.06 (0.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycle 3 (vs. 4)</td>
<td>–0.00 (0.07)</td>
<td>–</td>
<td>–0.00 (0.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Random part</td>
<td>Child level</td>
<td>0.16*** (0.05)</td>
<td>19.8%</td>
<td>0.11*** (0.03)</td>
<td>31.3%</td>
<td>0.09** (0.03)</td>
</tr>
<tr>
<td>Day level</td>
<td>0.04* (0.02)</td>
<td>4.9%</td>
<td>0.05** (0.02)</td>
<td>0.0%</td>
<td>0.05* (0.02)</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cycle level</td>
<td>0.61*** (0.03)</td>
<td>75.3%</td>
<td>0.55*** (0.03)</td>
<td>9.8%</td>
<td>0.55*** (0.03)</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model fit</th>
<th>$-2 LL (n = 940)$</th>
<th>2308.1</th>
<th>2232.8</th>
<th>$\Delta -2LL: 75.3***$</th>
<th>2229.1</th>
<th>$\Delta -2LL: 3.7$</th>
</tr>
</thead>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$; Program activities are contrasted with transition (reference category).
Well-being during free play was thus related to the highest scores, on average, but also showed the widest variation. Incidents between children, which were generally observed during either free play (6 times) or transitions (7 times), occurred sporadically (14 times in total, 1.5% of the observations).

An exploration of individual children’s well-being across cycles showed three different patterns, based on the range of scores. The large majority of children showed well-being scores ranging from relatively low scores (1, 2) to relatively high scores (6, 7) with an average score around the middle score 4 (see Figure 2, Child 1 as an example). Scores ranged from 1 to 4 for one child and from 2 to 5 for another child, indicating low average levels of well-being (see Child 2, Figure 2 as an example). In contrast, four children showed only relatively high scores (i.e. in the 4–7 range of the well-being measure, see Child 3, Figure 2). The standard deviation of the observed well-being scores was negatively related to the mean scores, $r = -0.41$, $p = 0.025$, which indicates that fluctuations in well-being were generally related to lower average levels of well-being.

The caregiver’s level of sensitivity was, on average, adequate and average sensitivity scores were adequate (scores ≥ 4) for all activities. However, there was variation from low-to-high scores ($M = 4.64$, $SD = 1.12$, min–max: 1–6). Sensitivity was, on average, lower during free play ($M = 4.23$, $SD = 1.27$), compared to mealtimes ($M = 4.69$, $SD = 1.06$), teacher-led activities ($M = 4.86$, $SD = 1.56$) and transitions ($M = 5.06$, $SD = 0.76$).

Figure 1. Distribution of well-being scores. Note: Scores 1–7 indicate levels of children’s well-being: 1 = very low, 2 = low, 3 = somewhat low, 4 = neutral, 5 = somewhat high, 6 = high, 7 = very high.
Child 1: Variation of Well-being in the Low-to-High Range

Child 2: Variation of Well-being in the Low-to-Medium Range

Child 3: Variation of Well-being in the Medium-to-High Range

Figure 2. Well-being Scores per Cycle: Three Cases: Child 1: Variation of well-being in the low-to-high range. Child 2: Variation of well-being in the low-to-medium range. Child 3: Variation of well-being in the medium-to-high range. Note: The dotted lines mark separate days.
The correlation between caregivers’ sensitivity and the observed well-being of the children was positive but weak and only approached statistical significance ($r = .06$, $p = .053$). Further exploration of the data showed that children’s well-being fluctuated from low-to-high levels (e.g. scores between 1 and 6) for all sensitivity scores (scores between 1 and 6), and, hence, caregiver sensitivity explained only little variance of children’s well-being.

**Multi-level model for children’s well-being**

Model 0 from Table 1 presents the variance components for the fully unconditional model without predictors. The largest proportion of the variance in children’s well-being (about 75%) was due to significant fluctuations from cycle to cycle. We found no indication for strong differences between days as the variance at day level was only a small proportion of the total variance (about 5%). The remainder of the variance was related to differences between children (20%).

In Model 1, the well-being variables and caregivers’ sensitivity were included related to the daycare program, controlling for age differences between the children. Well-being showed significant relationships with the different activities of the daycare program. Well-being was, on average, slightly higher during free play (+0.25) and teacher-led activities (+0.27), compared to lunch/snack or transitions; this latter category was the reference category. Conflicts between peers were negatively related to children’s well-being, as expected. In this model, caregiver sensitivity showed a negative relationship with children’s well-being, although the association was rather weak. The statistically significant relations from Model 1 remained statistically significant after controlling for variables at child level (gender, number of days present at the center, parent-reported discomfort of the child) and design-related variables (cycles 1–4) in Model 2; this model did not explain incremental variance compared to Model 1. Discomfort of the child, as measured with the ECBQ, was not related to children’s well-being in our final model.

**Discussion**

In our exploratory study, the well-being of young children in daycare was, on average, neutral without dominant signs of joy or discomfort. This neutral level was also the most often observed level in our small sample. The average level of children’s well-being from this study is in line with previous studies (see De Kruif et al., 2007: 4.3; Barandiarian et al., 2015: mean score 4.4; Groeneveld et al., 2010: 4.3; this study: 4.4). However, our findings highlight that well-being varied significantly across the day. There are occasionally strong peaks and troughs of well-being throughout the day for most children. Well-being is in flux and, to quote the Greek philosopher Heraclitus, the only constant changes. In our small sample, children’s level of well-being typically ranged from very low to very high levels around the medium level. However, the well-being of some children varied from neutral to high levels, whereas other children’s well-being was consistently low throughout the day. However, additional research with large samples is needed to determine profiles for different children with different mean levels and variations in well-being. Previous studies of children’s engagement have found similar levels of variability. In fact, fluctuations throughout the day made
up the majority in variance in children’s engagement (see Vitiello et al., 2012), and this also applies to our study into the well-being of children (see Laurin et al., 2021).

We found a significant relationship between children’s well-being and the program and peer conflicts. Specifically, free play and teacher-led activity in the daycare program were linked to greater enjoyment on the part of the children, while well-being was slightly lower during transition and eating situations. This finding is in line with previous studies into the engagement of preschool children in U.S. studies (see also Buell et al., 2017; Carbonneau et al., 2020; Vitiello et al., 2012). As expected, conflicts between children were related to a decrease in well-being.

At the child level, well-being was related to age: elder children had slightly higher levels of well-being (see also Werner et al., 2015). Infants showed occasionally the lowest levels of well-being (for example, during crying), which were not observed for toddlers. We did not find a strong and positive relation between children’s observed well-being and caregivers’ sensitivity. Previously, Groeneveld et al. (2010) did not find a relationship either between sensitivity and well-being for center-based care, using identical measures. It should, firstly, be noted that there was a time-lapse between the observation of a specific child and the observation of the caregiver in our observation procedure and, hence, there was no synchronous measurement of child and caregiver behavior. This timing seems important because previous studies found significant variation (Laurin et al., 2021; see also Vitiello et al., 2012), whereas early childhood staff support appeared to be relatively stable (Curby et al., 2010) despite some variation during the day, week or season (Buell et al., 2017). Secondly, we observed a contrasting well-being-sensitivity pattern in some of our data. In some instances, a child showed a very low level of well-being, whereas the caregiver, who tried to soothe this child, showed a high level of sensitivity. Our findings, then, make clear that there is no unequivocal relationship between caregiver behavior and the socio-emotional state of children.

Our study further showed a modest relation between children’s well-being, as observed in the daycare center, and caregiver- and parent-reported well-being. This finding may be explained by the fact that these informants have different perspectives, but the modest correlation may also be due to the different measures (questionnaire vs. observation) and, relatedly, different time windows (brief episodes for the child vs. a longer time frame for the questionnaire).

Finally, our results from this Dutch study were found in a program that seems typical for Dutch childcare. Other U.S. studies have also found relatively low levels of active learning in preschool (e.g. Early et al., 2010; Fuligni et al., 2012). The fact is that Dutch daycare, which includes children from about three months to four years, has no obligatory curriculum and is characterized by a historical tradition of free play. Also, the level of instructional support is relatively low in Dutch early childhood education and care (Slot et al., 2017), although it should be noted that this is observed in most other countries as well (see Perlman et al., 2016).

**Limitations of the study**

This exploratory study has several limitations. First, only a small sample of children was included. A larger sample of children and caregivers from several groups is
needed to study relationships between children’s well-being and characteristics of the child and their childcare environment. Relatedly, the statistical power of some of our analyses was modest.

Second, our design did not allow an in-depth analysis of the relationship between caregiver sensitivity and children’s well-being. This may require a different observation and coding procedure where the caregiver and the child are observed closer in time or even simultaneously, particularly because the well-being of a child may change relatively fast. Application of cross-lagged autoregressive models, preferably in a larger sample, may reveal relationships between caregiver behavior and children’s behavior with more accuracy (see Curby et al. 2014).

Our observational study does not provide a broad picture of caregiver’s interaction skills. Sensitive responsivity of the caregiver was evaluated in this study, because previous research has shown a relationship between this interaction skill and children’s well-being (De Kruif et al., 2007). However, other interaction skills, like classroom management and instructional support, may be related to the well-being of children as well.

**Implications and future research**

Our findings obviously need replication in a larger sample to extend the evidence base related to the well-being of young children in childcare. However, some of our more robust findings may point to possible implications for childcare practice. Our study shows that children’s well-being is often neutral, but shows significant fluctuation throughout the day. Even although the children in our study generally had neutral-to-positive well-being, the level of well-being was low in 10% of our observations. The dynamic nature of well-being requires caregivers who are highly sensitive to the fast-changing socio-emotional needs of infants and toddlers. It is important that professional caregivers care about how infants and toddlers feel throughout the day in ECEC as this indicates the socio-emotional needs of young children. Caregivers should not only be sensitive to children’s discomfort and they should also interact in a responsive manner with children with neutral or higher levels of well-being. Based on our study, it seems that caregivers do not need to be overly concerned if children in their group often show neutral levels of well-being, as this was frequently observed in our study in various parts of the program.

Our findings further suggest that free play and teacher-led activity promote children’s well-being. In line with findings from studies into children’s engagement, it seems interesting to explore how the time for mealtime and transitions can be minimized to create more time for free play and teacher-led activities. Taking into account the challenges of classroom organization with very young children, it seems important to include more activities that promote children’s engagement and well-being. Our study also showed that children’s well-being during free play is not only higher but also more variable; a corresponding pattern was found for caregiver’s sensitivity. It is, therefore, vital to gain more insight into the factors that promote or lower well-being during free play, which make up a significant part of the day in Dutch daycare but are also important parts of ECEC in different countries. Finally, future studies should provide more insight into the occurrence of relatively low and high levels of well-being and, even more challenging, how well-being can be promoted.
Disclosure statement

No potential conflict of interest was reported by the author(s).

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