

Child feeding practices among working mothers and daycare staff in Jakarta, Indonesia: A mixed-methods study*

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ABSTRACT

Background: Child feeding practices in working mothers and daycare staff play an important role in children's dietary intake. **Objective:** This study aims to compare child-feeding practices between working mothers and daycare staff. Additionally, the study explores the perspectives of working mothers, daycare staff, and management regarding their roles in child feeding practices to the children. **Methods:** Mothers of under-five children ($n=124$) who used daycare facilities in 11 daycares in Ministry/Agencies in Jakarta and the daycare staff ($n=47$) were invited to complete self-administered Child Feeding Practices Questionnaire (CFPQ). Qualitative research utilized WeValue Insitu and Perspective Exploration (PEX) involving working mothers ($n=3$), daycare staff ($n=5$), and daycare management staff ($n=5$). **Results:** The findings indicated higher score amongst working mothers on child control (3.20 vs 2.20, $p<0.001$) and emotion regulation (2.00 vs 1.67, $p<0.001$) subscales than daycare staff. On the other hand, daycare staff had higher scores on pressure to eat (3.75 vs 3.50, $p<0.05$), encourage balance and variety (4.75 vs 4.50, $p<0.001$), modelling (5.00 vs 4.25, $p<0.001$), and restriction (4.20 vs 3.40, $p<0.001$) subscales than the working mothers. The quantitative findings were supported by the qualitative findings regarding the child feeding practices, especially for restriction, encourage balance and variety, and modelling subscales. **Conclusions:** The study highlight complementary roles of mothers and staff in shaping children's eating behaviours and the importance of communication between mothers and daycare staff on the child feeding practices. Nutrition education is needed particularly to strengthen aspects of child feeding which are still low in mothers and daycare staff.

KEY WORDS: child feeding practice; daycare; daycare staff; under-five children; working mothers

INTRODUCTION

Early childhood (0-5 years) is a key period for growth and development [1]. During this period, maintaining a healthy dietary pattern, such as adequate nutrition is important to support optimal health and growth [2]. Working mothers and daycare staff both have a significant impact on children's dietary intake and nutritional status [3]. In Indonesia, women's participation

in the workforce has been increasing. In 2019, female contributed to 40% of labour force among whom 58.5% were employed full-time. This rising participation has led to greater reliance on daycare services, where children may spend up to five full 8-hour days per week [4-6]. Children in full-time daycare services receive one-half to two-thirds of their daily nutritional intake in daycare service, emphasizing the importance of daycare in maintaining children's eating patterns [7-9].

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Several studies have explored parental and caregiver feeding practices, the factors that influence them, and their association with children's eating habits and nutritional outcomes [10-12]. Research reveals that effective feeding techniques by mothers can improve children's nutritional intake [3]. At the same time, daycare staff play a significant role in influencing children's diets [13,14]. Research has shown that staff practices such as supporting children's autonomy, providing scheduled meals, role modelling, and showing encouragement during mealtimes are associated with increased fruit and vegetable consumption among children [15,16]. However, most of this research is from high-income countries, with limited studies conducted in low- and middle-income countries, including Indonesia.

Despite the increasing reliance on daycare, few studies have directly examined the feeding practices of working mothers and daycare workers in the same setting. Previous studies have typically focused on either parents at home or caregivers in daycare, without contrasting the two groups [10,12]. A study conducted in the Netherlands found disparities between parental and daycare eating practices, which were linked to unhealthy behaviors in children [14]. Furthermore, most existing studies focus mainly on quantitative data, whereas qualitative perspectives from mothers, daycare staff, and management are lacking in Indonesia. No previous study has assess feeding practices of both working mothers' and daycare staff's feeding practices using both quantitative and qualitative approaches.

Understanding their perspectives is important, as it provides a more profound understanding of their values and perceived roles in promoting children's diets, which supports quantitative findings. A previous study exploring facilitators and barriers to healthy diet and physical activity in daycare from several perspectives (managers, staff, and parents) discovered that all stakeholders were enthusiastic about encouraging healthy behaviours in daycare [17]. Understanding feeding behaviours in mothers and daycare staff is particularly important for policy and practice, as it can help develop policies for better aligning feeding techniques at home and at daycare. This kind of collaboration is required to maintain appropriate nutritional messages, promote supportive

food environments, and, eventually, enhance children's dietary intake in Indonesia. Therefore, the study aims to investigate child feeding practices in working mothers and daycare staff. Additionally, it explores the perspectives of working mothers, staff, and daycare managers regarding their roles in child feeding practices.

METHODS

Study design and participants

This study, employing a mixed-methods design, was conducted as part of the baseline assessment for Phase 2 of the Early Childhood Care, Nutrition and Education (ECCNE) Daycare project. This study is part of an intervention study which aim to assess the effectiveness of an ECCNE program in improving child care, nutrient intakes, and growth and development of children of working mothers who used daycare facilities. Quantitative (comparative cross-sectional) and qualitative (shared values) data were obtained from 11 daycare centers within 11 Ministries/Agencies in Jakarta, Indonesia, between November 2023 and January 2024. The quantitative component included 124 working mothers and 47 daycare staff. All participants in the ECCNE Daycare Project baseline study completed the Child Feeding Practices Questionnaire (CFPQ) through Google Forms. The sample included all eligible working mothers who registered their children in daycare centres provided by their respective ministries or government agencies (n=124), as well as all staff employed at those daycare centres (n=47). Each mother was assigned to a childcare centre within her institution, and all staff members from each daycare were involved.

Sample size of the intervention study (n= 120 i.e. 60 per group) was calculated based on expected difference in developmental score (BSID-III) of 10 with SD=14, design effect of 2 and dropout rate of 10%. The inclusion criteria in this study were mothers who work in the 11 ministries/agencies, used daycare facilities in their offices and their children were 6 to 59 months of age. Daycare staff and management were required to have worked in the daycare for at least six months. Mothers and staff who provided incomplete responses or were unavailable during data collection were excluded.

For the qualitative component, working mothers were included as the main informants, while daycare staff and management served as key informants. Participants were selected using purposive sampling to ensure the inclusion of individuals with relevant experience and perspectives on child feeding practices and policies. Working mothers and staff were identified from those who had previously completed a Google Form during the quantitative recruitment phase. Selection was based on criteria such as age, education, and income for working mothers, and age, education, and length of employment for daycare staff. To capture variation, two participants were chosen for each criterion (e.g., youngest and oldest by age, highest and lowest by education, income, or length of employment). In contrast, management representatives were selected according to their roles, with heads of daycare schools, general offices, or foundations invited to participate. A total of six individuals were invited from each group (working mothers, staff, and management), yielding 18 participants overall. Of these, 13 attended the workshops, comprising three working mothers, five staff, and five management representatives. Each workshop session was planned to include four to six participants to facilitate meaningful discussion. A previous study using the WeValue Insitu approach found 6–8 groups each with 2–5 participants were sufficient for theoretical saturation of a specific topic [18]. Ethical approval for the ECCNE Daycare study was granted by the Ethical Review Committee of the Faculty of Medicine, Universitas Indonesia (Reference Number: KET-1540/UN2.F1/ETIK/PPM.00.02/2023). Written informed consent was obtained from all participants prior to their involvement in the study.

Measures

Child feeding practice. In the quantitative data collection, working mothers and daycare staff filled out the child feeding practice questionnaire (CFPQ). Working mothers completed the questionnaire via Google Forms due to their busy schedules, while daycare staff were interviewed by enumerators. The child feeding practice questionnaire used was adapted from a previous study conducted in the Netherlands, which tested child feeding practices. This questionnaire was adapted from the validated Child Feeding Practices Questionnaire (CFPQ). This questionnaire was administered to working

mothers and daycare staff in daycare settings across the Netherlands [14]. We adapted the CFPQ into Indonesian context. The adaptation process involved translating the original items and modifying the wording to reflect the local context. A total of 32 questions in the CFPQ were adapted to fit the Indonesian context. The 32-item CFPQ consist of 8 feeding practice subscales, including child control (5 items), pressure to eat (5 items), teaching about nutrition (3 items), emotion regulation (3 items), environment (4 items), encourage balance and variety (4 items), modelling (4 items), and restriction (4 items) to be analyzed later for differences between working mothers and daycare staff. Diet related items were answered using a five-point Likert scale ranging from 'never' to 'always' for questions, and from 'disagree' to 'agree' for the statements.

The reliability test using Cronbach's alpha was carried out with participants from the same target population as the study, namely working mothers and daycare staff, to ensure that the results represented the actual users of the questionnaire. For the pilot test, 30 working mothers and 30 daycare staff were involved, aligning with recommended sample sizes for questionnaire pilot studies (typically 12–35 participants per group) [19]. The analysis of 32 CFPQ items completed by working mothers showed good internal consistency, with Cronbach's alpha values is 0.776. These findings suggest that the questionnaire is reliable for use in working mothers and staff. However, for the staff, the Cronbach's alpha score was 0.505, indicating lower reliability. In general, Cronbach alpha values below 0.5 considered unacceptable, those above 0.6 are considered questionable, those above 0.7 are considered satisfactory and acceptable, those above 0.8 are considered good and those above 0.9 are considered excellent in terms of internal consistency [20]. Despite lower Cronbach alpha for daycare staff, we keep the 32 items in the CFPQ to allow comparability with CFPQ results of the mothers. Sociodemographic data, including age and educational attainment of working mothers and daycare staff, were obtained from the baseline study data.

Qualitative data. The collection of qualitative data in this study was facilitated through Perspective Exploration (PEX) interviews conducted after quantitative

data collection. Perspective Exploration is a methodology akin to Focus Group Discussions (FGDs) and was an integral component of the WeValue Workshop process embedded within the ECCNE daycare project. WeValue is an approach to eliciting values in a group context and connecting those values to concrete and specific actions, feelings or perceptions. Each WeValue Workshop session was projected to have a duration of approximately 1 to 2 hours, and a total of three workshops were planned with each workshop session catering to one of the three primary groups, including: workshop 1 with daycare staff, workshop 2 with daycare management, and workshop 3 with working mothers.

The workshops applied the WeValue InSitu method, which involved several stages before the PEX session: 1) Contextualization, where each group defined its boundaries (e.g., as working mothers or daycare staff); 2) Photo elicitation, a warm-up activity using values-based storytelling through photos; 3) Trigger list, where participants selected and discussed meaningful trigger statements; and 4) Collective exploration, a group discussion phase to develop shared understandings of what made their activities meaningful. After conducting the WeValue In Situ (WVIS) workshop, it was considered important to complement the process with a Focus Group Discussion (FGD) known as Perspectives Exploration (PEX). PEX has been shown to enable participants—having just crystallized their shared values during WVIS—to articulate their perspectives more clearly and in direct relation to those values. In this study, PEX discussions were used to gain deeper insights into the perspectives of working mothers, daycare staff, and daycare management regarding their respective roles in child feeding practices. This approach not only allowed participants to link the cultural themes identified during WV to concrete practices but also ensured that the exploration remained culturally grounded, as demonstrated in earlier applications of PEX [21]. All PEXs and interviews were audio-recorded, translated, and transcribed verbatim for subsequent analysis.

Data analysis

For the quantitative analysis, data were coded, entered, and analyzed using IBM SPSS Statistics for

Windows, version 25.0. The normality of continuous variables was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. Descriptive statistics were expressed as mean \pm standard deviation for normally distributed data and as median (25th–75th percentile) for skewed data. Group comparisons were conducted using independent t-tests or Mann–Whitney U tests, while sociodemographic characteristics were compared using Chi-Square tests. Statistical significance was set at $p < 0.05$ and $p < 0.001$.

For the qualitative analysis, audio recordings from the focus group discussions were transcribed verbatim by the researcher. The transcripts were thoroughly reviewed to ensure accuracy and completeness before analysis. Codes derived from the transcripts of working mothers, daycare staff, and daycare managers were used as the primary data to address the main research question regarding their roles in providing food for children. A three-level coding process was applied to the PEX transcripts, from which the emerging themes were identified.

RESULTS

Characteristics of respondents

The 11 daycare facilities included in this study consisted of six daycares where children brought meals from home and five daycares that provided meals either through catering services or in-house kitchens. In both types of daycares, children ate together during mealtimes under the supervision of daycare staff. One hundred twenty-four mothers of under-five children who used daycare facilities in 11 daycares in Ministry/Agencies in Jakarta and 47 daycare staffs were invited to complete self-administered CFPQ. The majority of working mothers were aged 31–40 years (54%), whereas more than half of the daycare staff were older than 40 years (55.3%). The difference in age distribution between the two groups was not statistically significant ($p = 0.479$). Most working mothers had completed an undergraduate degree (64.5%), while most daycare staff had completed high school (59.6%). No significant difference was found between the two groups in terms of educational attainment ($p = 0.731$) (**Table 1**).

Child feeding practice between working mothers and daycare staff

Quantitative results

The working mothers were found to have had a significantly higher median score in the child control and emotion regulation subscale ($p < 0.001$) than the daycare staff. In contrast, daycare staff were found to have had significantly higher median scores in the pressure to eat ($p < 0.05$), encourage balance and variety, modelling, and restriction ($p < 0.001$) subscales than the working mothers (Table 2).

Qualitative results

In the quantitative results, it was found that the child control and emotion regulation score among

Table 1. Characteristics of working mothers and daycare staff

Characteristics	Working mothers (n=124)		Daycare staff (n=47)		p-value ¹
	n	%	n	%	
Age (years)					0.479
<31 (24-30)	50	40.3	12	25.5	
31-40	67	54	9	19.1	
>40 (41-47)	7	5.6	26	55.3	
Education ²					0.731
Highschool	18	14.5	28	59.6	
Undergraduate	80	64.5	18	38.3	
Post-graduate	26	21	1	2.1	

¹ Chi-Square test; ² Highschool: elementary to senior high school; Undergraduate: diploma to bachelor's degree; Post-graduate: master's to doctoral degree

working mothers was higher compared to staff. This finding was also supported by the qualitative results, which showed that daycare staff closed the room door during mealtimes to help children stay focused and also sat beside them to assist with feeding. On the other hand, working mothers mentioned that their children played a role in deciding what foods they wanted to eat, and they tended to follow the child's requests.

"Yes, my child takes part in deciding, for example, what to eat tomorrow... If he really wants something, he will say it, like asking for pizza." (Working mother, 28 years old)

"In the daycare, when in the dining area, the door is closed so the children can focus on eating. To encourage them, once they finish eating and drinking, they are allowed to go out and play in the hallway, with a teacher supervising." (Management, 40 years old, 21 years of working)

"I sit beside them. They are not allowed to walk around..." (Staff, 26 years old, 5 years of working)

In the quantitative findings, staff had higher median scores for "pressure to eat" than working mothers. Staff statements, which highlighted their efforts to encourage children to eat, supported this finding.

"Some children initially refuse by saying, 'I don't like this,' and I respond by encouraging them to at least try it. I continue to persuade them, recognizing that each child has different eating preferences and may express them by saying, 'I want this' or 'I prefer it this way'" (staff and management).

Table 2. Differences of child feeding practice between working mothers and daycare staff

Category feeding practice	Working mothers (n=124)		Daycare staff (n=47)		p-value ¹
	Mean ± SD		Mean ± SD		
	Median (25th-75th)		Median (25th-75th)		
Child control	3.20 (2.60-3.60)		2.20 (1.80-2.60)		<0.001
Pressure to eat	3.50 (3.00-4.00)		3.75 (3.25-4.25)		0.047
Teaching about nutrition	3.67 (3.00-4.00)		3.67 (3.67-3.67)		0.089
Emotion regulation	2.00 (1.67-2.67)		1.67 (1.00-2.33)		<0.001
Environment	3.75 (3.50-4.00)		4.00 (3.50-4.00)		0.163
Encourage balance and variety	4.50 (4.00-4.75)		4.75 (4.75-5.00)		<0.001
Modelling	4.25 (3.75-5.00)		5.00 (5.00 - 5.00)		<0.001
Restriction	3.40 (3.00-4.00)		4.20 (3.40 - 4.60)		<0.001

¹ Mann-Whitney test

This was further reinforced by working mothers, who expressed feeling hesitant and fearful about offering a variety of foods, as their children often rejected them.

“My main difficulty is that I hesitate to introduce a greater variety of foods, as my child often strongly refuses or closes their mouth, and I am afraid of forcing too much” (Working mother)

Another aspect to consider is the median score for the encourage balance and variety category, which was higher among staff than working mothers. This was consistent with the qualitative findings, where staff were found to actively encourage children to consume balanced and varied meals, either by offering diverse menus in the daycare or by giving suggestions to parents to improve the variety of lunchboxes.

“We try to make sure there is chicken, fish twice a week, eggs, and sometimes some meat. We also provide a variety of fruits. For vegetables, we include leafy greens like spinach and water spinach, but we also switch them up.” (Management, 40 years old, 21 years of working)

“I often remind them that, if possible, the menu should be changed regularly and not remain the same. What matters is variety.” (Management, 28 years old, 2 years of working)

“Sometimes I give information or suggestions to children, for example, asking them to try bringing something different tomorrow or using different ingredients.” (Staff, 29 years old, 11 years of working)

In the quantitative results, the median score for the restriction category was higher among staff compared to working mothers. This was supported by statements from working mothers who admitted having difficulty limiting their child’s tendency to repeatedly consume the same type of food. In contrast, staff members were more restrictive and also give advice to parents to limit consumption of instant foods.

“I find it difficult to introduce other types of dishes because they strongly refuse or shut their mouth, and I hesitate to push too hard. Typically, their appetite decreases if the meal is not fried chicken with rice or is just plain rice.” (Working mothers, 28 years old)

“We advise parents to limit instant products and provide healthier alternatives such as chicken, eggs, fruits, and similar options.” (Management, 65 years old, 8 years of working)

DISCUSSION

This study explored differences in child feeding practices between working mothers and daycare staff within daycare facilities in ministry/agencies in Jakarta. The main finding was that daycare staff demonstrated higher median scores in certain feeding practice categories, particularly restriction and encouraging balance and variety, compared to working mothers. The qualitative findings reinforced these patterns, showing that staff not only supervised children during meals but also actively encouraged dietary variety and restricted the intake of instant foods, whereas mothers often struggled to enforce similar practices at home. These findings align with prior studies showing that structured encouragement at daycare increases children’s vegetable consumption and overall dietary quality [22]. Together, these results highlight the distinct but complementary roles of mothers and daycare staff in shaping children’s dietary habits.

When compared with previous studies, several similarities and differences emerge. Both working mothers and daycare staff in this study had low emotion regulation scores, with a median score of less than 2, a finding consistent with recent research in the Netherlands that also reported an emotion regulation score of less than 2 among parents and daycare staff [14]. Working mothers scored considerably higher on child control, reflecting how they allowed children to regulate their eating habits, which echoes findings in qualitative interviews where mothers admitted serving the same foods repeatedly to avoid food refusal. Conversely, staff scored higher on pressure to eat, balance and variety, modelling, and restriction. These findings were also confirmed qualitatively, where staff described strategies such as persuading children to try foods, role-modelling healthy eating, and limiting instant foods. Prior literature has also emphasized the importance of role modelling, structured encouragement, and restriction practices in shaping children’s eating behaviours [22,23]. Similarly, our results echo findings from the Netherlands, where

daycare staff were reported to score more favorably than parents on feeding practices, likely due to their training in child development and adherence to institutional regulations [14,24]. Nutrition education is needed which specifically target child feeding aspects which need to be strengthened.

An important contextual factor that may have influenced the results is that in some daycare centers, children brought meals from home, while in others, meals were provided by the daycare through catering or in-house kitchens. This variation could have affected feeding practices, particularly in the balance and variety category. Staff in centers that provided meals had more control over the composition and diversity of children's diets, which may have contributed to higher scores on encouragement of balance and variety. In contrast, when children brought lunchboxes from home, staff encouragement was limited to making suggestions or persuading children to eat what was available, reflecting stronger reliance on mothers' food choices. Thus, differences in the source of meals may partly explain why staff feeding practices appeared more structured and why mothers scored higher on child control, since the foods children brought from home reflected maternal decision-making.

The implications of these findings are both practical and theoretical. Practically, they highlight the critical role daycare staff play in shaping children's dietary intake, as their structured and supportive practices often result in children consuming more vegetables and a wider variety of foods. At the same time, working mothers exert significant influence at home by preparing meals and shaping children's taste preferences and long-term eating habits [14]. Previous qualitative research reported that working mothers primarily decided and prepared their child's daily food. They were also involved in providing snacks, milk, and fruit, occasionally purchasing protein-rich foods at grocery stores, and arranging the child's daily menu [25]. Research has demonstrated that poor eating behaviours contribute to suboptimal nutrient intake. Therefore, to prevent malnutrition among Indonesia's young children, feeding habits must be strengthened [26].

The results suggest that fostering consistent communication and collaboration between staff and

mothers is essential to provide children with a coherent feeding environment across settings. Yet, previous studies show that such communication is often hindered by differing dietary goals and limited trust between staff and parents [27,28]. Moreover, incorporating the communication role of nutrition programs through daycare providers could further support healthy eating environments and reinforce positive dietary habits in children [29]. In our study, we also found that daycare staff can provide advice to mothers on improving dietary diversity and limiting unhealthy foods such as instant foods, suggesting the importance of communication between mothers and daycare staff.

This study contributes novel insights by applying a mixed-methods approach and incorporating WeValue InSitu perspectives, providing richer understanding of child feeding dynamics in daycare settings. To the best of our knowledge, this is the first study in Indonesia to directly compare working mothers' and daycare staff's feeding practices using both quantitative and qualitative methods. The strength of the study is using mixed-method study, combining the quantitative and qualitative aspects using shared value. We combined qualitative perspectives with WeValue InSitu insights to support and enrich quantitative findings about child feeding practices. This study represented the first attempt to compare child feeding practices among working mothers and daycare staff in Indonesia, particularly within daycare facilities under governmental ministries/agencies. Beyond methodological novelty, the findings hold strong policy relevance. Specifically, the results could inform the development of structured daycare training modules in Indonesia, focusing on enhancing staff and parental practices in promoting ideal child feeding practices for young children.

However, this study has several limitations. First, we used a subset of 32 items from the original CFPQ, which contains 49 items validated in daycare settings in the Netherlands. Consequently, several subscale categories, including food as a reward, involvement, and monitoring were not assessed, potentially limiting the comprehensiveness of our findings. Second, the internal consistency for some subscales among daycare staff was relatively low, as reflected in the Cronbach's

alpha values, which may have reduced the reliability of certain constructs. Third, the study population was drawn only from daycare facilities under ministries/agencies in Jakarta, which may limit the generalizability of the results to other daycare contexts, such as private or community-based centers.

CONCLUSIONS

This study identified differences in child feeding practices between working mothers and daycare staff. Mothers scored higher on child control and emotion regulation, while staff scored higher on pressure to eat, encouragement of balance and variety, modelling, and restriction. Qualitative findings showed that children often ate better at daycare due to structured staff practices, while mothers struggled with food refusal at home. These results highlight the complementary roles of mothers and staff in shaping children's eating behaviours, and the importance of communication between mothers and daycare staff on the child feeding practices. Nutrition education is needed to enhance awareness, knowledge, attitudes, and practices on child feeding practices among working mothers and daycare staff, particularly to strengthen aspects of child feeding which are still weak in mothers and daycare staff. Strengthening staff training, parent and daycare communication, and nutrition education for both groups is essential to improve child feeding practices.

Declaration of conflicting interests

The authors declare no conflict of interest.

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