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Dietary diversity beliefs and practices among working mothers in Jakarta: a qualitative study

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ABSTRACT

Introduction: Dietary diversity is a global challenge in complementary feeding. Despite more women joining the workforce in developing countries, there are limited studies on the beliefs of working mothers and their experiences in relation to the provision of dietary diversity as recommended by the World Health Organization. **Methods:** This qualitative study explored the behavioural, normative and control beliefs of working mothers on dietary diversity practices, based on the Theory of Planned Behaviour (TPB). A total of 25 mothers of different occupational levels were recruited from workplaces in Jakarta. **Results:** Working mothers at the lower occupational levels showed a lack of understanding of the importance of dietary diversity and reported poor practices. These included the late introduction of animal protein as a food source, and few types of feeding instant foods. Due to their limited knowledge of nutrition, these working mothers tended to accept poor dietary diversity practices as normal. **Conclusion:** Working mothers at the lower occupational levels practised poor dietary diversity owing to work-related factors. Efforts should be undertaken to provide correct nutritional information related to complementary feeding at workplaces, especially to working mothers in the unskilled occupations.

Keywords: Child-feeding, working mothers, unskilled labour, qualitative study, Indonesia, dietary diversity

INTRODUCTION

Dietary diversity has been described as the number of different food groups consumed over a given reference period (Ruel, 2003). It is an important indicator of infant and young child feeding (IYCF) practices for children aged 6-24 months (WHO, 2008). Dietary diversity has been reported to be associated with height-for-age z-scores (HAZ) of young children in developing countries (Chua *et al.*, 2012; Jones *et al.*, 2014). Poor dietary diversity in complementary feeding practice can lead to deficiencies of essential micronutrients, which may lead to impaired immune systems and

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permanent adverse effects on the growth and development of children (Henjum *et al.*, 2015).

According to the World Health Organization (WHO) (2008), complementary feeding may be assessed using the five following indicators: (1) the introduction of solid, semi-solid or soft foods; (2) minimum dietary diversity; (3) minimum meal frequency; (4) minimum acceptable diet and (5) the consumption of iron-rich or iron-fortified foods. Complementary feeding that consists of less than four food groups and the delayed introduction of food variety, especially foods containing animal protein, are some of the significant problems in achieving dietary diversity (Menon, 2012; Zahiruddin *et al.*, 2016).

Most working women are in the reproductive age group (Grzywacz *et al.*, 2010; Singh & Hoge, 2010). The number of women joining the workforce has been on the increase, but this has been mainly at the lower skilled and unskilled levels (ILO, 2006; Cohany & Sok, 2007). This phenomenon is also found in Indonesia. The employment-to-population ratio (EPR) that indicates the percentage of people in employment from the total working age population has increased in female workers by > 5.0% in the last decade, in Indonesia, and is much higher than that for male workers. However, only 0.5% of working women were in leadership and management roles in Indonesia, compared to 1.6% for men (ILO, 2017), indicating that most women are employed in the lower levels of occupation, as unskilled labourers and informal workers. Working women face several challenges in trying to adhere to optimal practices for feeding infants and young children. They were unlikely to follow the recommended practise of exclusive breastfeeding until the child was 6 months and then begin sustained, complementary breastfeeding until the child was 2 years of age (Ong *et al.*, 2005; Baker & Milligan, 2008; Gennetian *et al.*, 2010).

Many working women often do not have sufficient resources in their families or at the workplace for child-care support (Toyama *et al.*, 2001; Du & Dong, 2010; Roshita, Schubert & Whittaker, 2012). The dietary diversity of young children may be affected, either positively through increased economic capacity of the mother to buy a wider variety of foods, or negatively as a result of the reduced time that working mothers have to prepare a variety of foods (Priebe, 2010; Razavi, 2012). This situation underlines the importance of understanding the beliefs and practices of working mothers regarding the provision of optimal dietary diversity.

Studies in developing countries have revealed poor dietary diversity practices among working mothers, although the evidence for this is contradictory in the middle- and high-income countries (Dewey & Adu-Afarwuah, 2008; Faber, Laubscher & Berti, 2014). There are few studies done in developing countries that have investigated dietary diversity challenges among working mothers in lower occupational levels (Vereecken & Maes, 2010; Razavi, 2012). Studies in Southeast Asian countries found poor dietary diversity practices among children aged 6–24 months (Batal, Boulghourjian & Akik, 2010; Senarath *et al.*, 2012).

The aim of this study was to explore dietary diversity practices and its related beliefs among working mothers in Jakarta, Indonesia, as a basis for designing interventions to promote appropriate complementary feeding for working mothers. This qualitative study was undertaken based on the Theory of Planned Behaviour (TPB) to explore the behavioural, normative and control beliefs to dietary diversity practices

among mothers working at different occupation levels (Ajzen & Manstead, 2007).

MATERIALS AND METHODS

Theoretical framework

The TPB model is widely used in the design of behavioural change interventions. The TPB model stipulates that three sets of beliefs mediate behavioural intentions, namely (i) behavioural beliefs, e.g. working mothers' attitudes based on perceived benefits and problems in practicing dietary diversity; (ii) control beliefs, namely perceptions related to control over necessary resources, e.g. capacity to cook and process the food, child-care resources when mother is working, and support to engage in dietary diversity practices; and (iii) normative beliefs e.g. subjective norms determined by perceptions of the views of other working mothers on complementary feeding (Ajzen & Manstead, 2007; Weir *et al.*, 2010).

Recruitment of participants

The International Labour Organization (ILO) categorises occupations into the following broad groups or levels (i) lowest level, unskilled labour; (ii) medium level, skilled labour and (iii) highest level, professional (ILO, 2006; Cohany & Sok, 2007; Vereecken & Maes, 2010). The study was conducted in Jakarta, which was chosen as it was a key urban location, with working mothers employed in different categories of occupations.

Working mothers with at least one child aged 6-23 months of age were recruited from these workplaces. A garment manufacturing factory was selected for the unskilled labour participants, and chemical and food factories for skilled and professional level workers. The participants at highest level were those who worked as managers and professionals, while the medium level or skilled labour were technicians, clerks, and service workers, and those at the lowest level were unskilled labourers. Non-working mothers were also included as a fourth group. They were recruited from among the wives of male workers in the study workplaces as it was convenient to do so.

The present study targeted to recruit a minimum number of 24 subjects for the four groups, based on the recommendations of having 6-10 participants per group to reach saturation (Tashakkori & Teddlie, 2003). A final total of 25 participants were recruited, comprising six working mothers representing unskilled labour, seven representing skilled labour, six professional managers and six non-working mothers. We also visited two houses in each group to interview caregivers (three grandmothers and five babysitters) and families (four husbands), and to observe the child's activities. Three workplace supervisors from each employment group, and two officers from the Mother and Child Health Directorate, Ministry of Health, were also interviewed about policy and health education facility in the workplace.

WHO indicator on dietary diversity

The WHO Minimum Dietary Diversity indicator states that children who are 6–23 months of age should receive foods from four or more out of seven food groups besides breastmilk. The seven food groups are listed as follows: (1) staples, (2) vitamin A–fruits/ vegetables, (3) other fruits and vegetables, (4) animal-source protein (meat/poultry/ fish), (5) milk and milk-related products, (6) plant source protein (legumes) and (7) eggs. The introduction of dietary diversity is recommended from 6 months of age, as breastmilk alone will by then no longer be sufficient to provide the child's nutrient requirements (Jones *et*

Table 1. Information explored in the qualitative study

Information	*Function in the behavioural model*	*Source*	*Participatory techniques*†
1. Value of maintaining child nutrition among working mothers	Behavioural belief	Working mother peer	None
2. Value of dietary diversity importance in child feeding	Behavioural belief	Working mother peer	Activities 1 and 2
3. Knowledge of dietary diversity and timing of giving different types of food	Skill and abilities	Working mother peer	Activities 1 and 2
4. Value of parenting and child feeding among peers of working mothers	Normative belief	Working mother peer	Activity 4
5. Perspective on difficulties in complementary feeding practices	Self-Efficacy/ Control Belief	Working mother peer	Activity 3
6. Extent of dependency on family and child caregiver for child care	Control Belief	Father or caregiver	Activity 4
7. Facilitation and support from employer related to child care and feeding practices (not only exclusive breastfeeding)	Environmental constraint	Employer/ workplace supervisor and Ministry of Health (MoH) officer	Activity 4
8. Perspective on effect of working on child feeding and dietary diversity	Outcome evaluation	Working mother peer, father or caregiver	None
9. Perspective on effect of child feeding on child nutrition status			

al., 2014). Infants can be fed pureed, mashed and semi-solid foods prepared from infant cereals, vegetables, fruits, meat, and other protein-rich foods (Abeshu, Lelisa & Geleta, 2016). The participating women were questioned on the food groups given to their child on the previous day.

In-depth interview

The health belief model adopted from the TPB (Ajzen & Manstead, 2007) provides a useful framework to identify the determinants of feeding practice. These consist of three primary aspects: (i) attitude or behavioural beliefs, (ii) perceived norms concerning performance of the behaviour (normative beliefs, environmental constraints), and (iii) self-efficacy with respect to performing the behaviour (skills, abilities and control beliefs) (Fishbein, Von Haeften & Appleyard, 2001). The questions were targeted at working mothers and verified with caregivers, other family members and employers.

Card-sorting for exploring dietary diversity practice

The researchers also used a participatory technique, namely card-sorting, to stimulate discussions arising from

the responses of mothers on their perspectives and the problems they faced in achieving dietary diversity practices, as well as their contacts with whom they discussed feeding problems. (Neufeld *et al.*, 2004). Card-sorting consisted of four types of activities that were designed to investigate (i) the knowledge of mothers on the introduction of foods to infants, (ii) the timeline of dietary diversity practices, (iii) the problems in implementing complementary feeding practices, and (iv) contacts and channels they sought to obtain information on child feeding problems. The card-sorting activities were designed by the research team, reviewed by two nutrition experts and pretested among five volunteers with similar characteristics as the participants (Kerr, Hilari & Litosseliti, 2010).

Based on a list of food groups prepared by two nutrition experts and another list of commonly consumed foods by children <2 years old (Ferguson *et al.*, 2006), a final list comprising a total of 17 food groups was developed for the qualitative study. These are staples (rice porridge, filtered porridge, soft rice, instant porridge, potatoes and mung bean porridge), plant protein sources [*tempeh* (fermented soybean) and tofu, both from soy], animal protein sources (chicken, chicken liver, fish, egg and meat), vegetables, fruits and beverages (formula milk and sweetened tea). Filtered porridge is rice porridge with finer texture after being filtered while soft rice is Indonesian steam chicken rice or *nasi tim*.

An A3 sheet paper with an age timeline from 0 month to 1.5 years was provided to the mothers. In line with each activity, the mothers used sticky cards to paste pictures of the foods that they had fed to their child according to the age timeline. An example of a card-sorting sheet is shown in Figure 1.

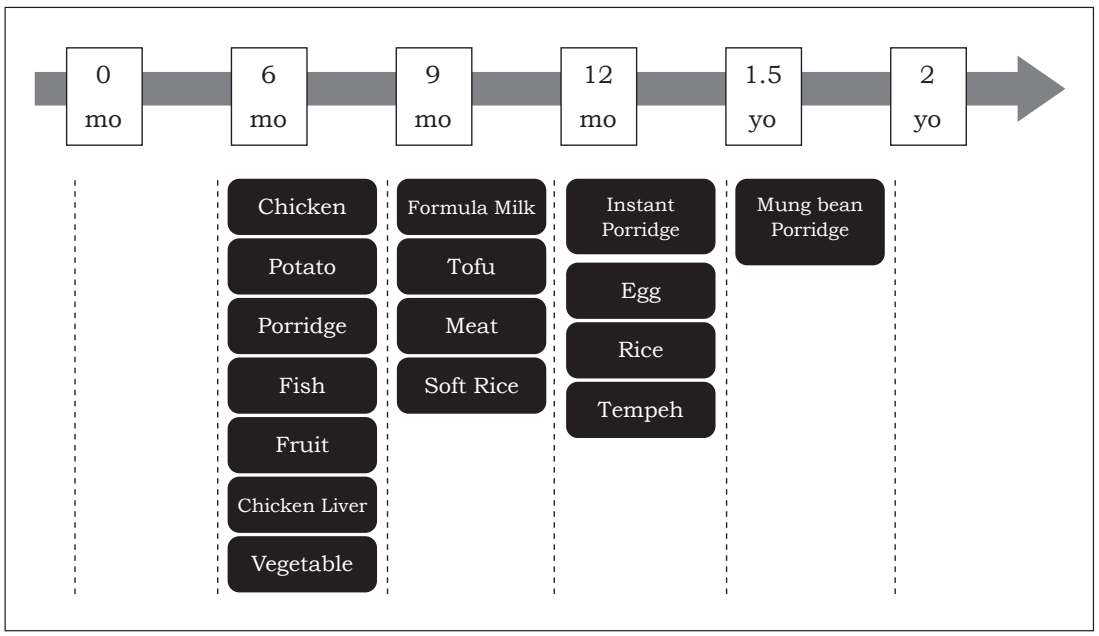


Figure 1. Example of dietary diversity card-sorting sheet. Each sticky note describes different foods that the mother can attach to a specific age of the child (e.g. chicken must be introduced at 6 month old of child age, while mung bean porridge was introduced at 1.5 years old of child age)

Using this card sorting instrument, we could observe how many food groups were given according to the child's age, based on mother's knowledge and experience (Activity 1 and Activity 2). Following this, we explored their related beliefs underlying their dietary diversity practices.

Activity 3 was aimed at assessing problems and challenges experienced by the mothers in providing complementary feeding. Problems were listed based on discussion with the nutrition experts and pretested before including them on the sticky cards (Menon, 2012; Senarath *et al.*, 2012). We asked the mothers to stick the cards in the order from the most to the least troubling.

Activity 4 was aimed at assessing the priority that mothers assigned to the persons with whom they mostly shared information on child-feeding. This is a part of the subjective norms in the Health Belief Model. Three groups, namely, family members, health workers, and other working mothers were on a prepared list from which the participants were requested to select from.

Before data collection, two interviewers were trained so that they had an adequate understanding of the instruments used. All card-sorting activities were audio recorded, its results were photographed. The analysis was conducted based on recorded interviews transcribed in verbatim and from the photographs of the card-sorting activities.

Data collection

Data were collected from August to October 2014 using in-depth interviews of both working and non-working mothers. In-depth interviews were also conducted with fathers, caregivers and employers. Each session began with a brief introduction and description of the purpose of the study. Participants were informed that there were no right or wrong answers and were encouraged to share their views regarding dietary diversity in complementary feeding. In order to obtain a better understanding and avoid bias in the interview process, the researcher conducted the interviews in the Indonesian language. The interviews lasted 45-90 minutes per session and were held in a closed room. Information from the in-depth interviews was validated via cross-checking and the findings were reconfirmed with the subjects.

Qualitative data transcription

All recordings and written notes were converted into transcripts. Two researchers with a background in nutritional education and complementary feeding research read the transcripts independently, and then coded them into descriptive words or phrases. Photographs of card sorting results were coded based on their similarities in practices and knowledge. The coded transcripts were compiled and grouped into themes. The themes that emerged were then reviewed and edited. Key issues were compiled in a matrix so that the comparison of dietary diversity feeding practices among women from different occupations could be undertaken. Saturation was considered when the researcher had reached the point of no new findings or themes. Triangulation of source, method and analysis was explored to ensure the validity of the qualitative data. Information gathered from the peers of the mothers, families and key informants was used to complement information provided by the mothers (Fusch & Ness, 2015).

Ethical considerations

The study procedures were fully approved by the Health Research Ethics Committee of the Faculty of Medicine,

Universitas Indonesia (number 155a/H2.FI/ETIK/2014).

RESULTS

Characteristics of the informants

Characteristics of the informants are shown in Table 2.

Problems in achieving dietary diversity

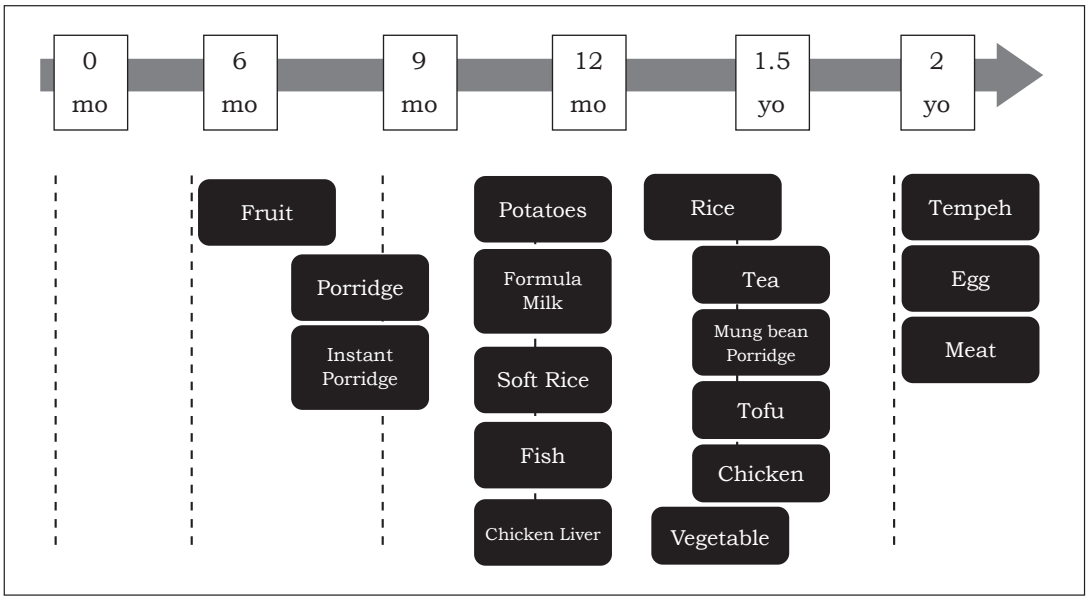
In general, the mothers knew that filtered porridge could be given to children who were < 9 months of age, rice porridge could be introduced at 9 months, and steamed rice at 12 months of age. Based on the in-depth interviews using card sorting, we found that the children of mothers at the lower levels of employment were introduced to the food groups at various ages. Figure 2 shows an example of mothers from unskilled and skilled labour level which indicated the late introduction of foods, compared to another from the professional level, who introduced more diverse foods in a timely manner.

In the former case, the mother only gave staples and soft fruits such as banana at age < 9 months. Animal protein food sources such as chicken, chicken liver or fish were given later when the child was 12 months old. By contrast, the mother from the professional category introduced fish, chicken liver and vegetables beginning at the age of 6 months. Quotes from a

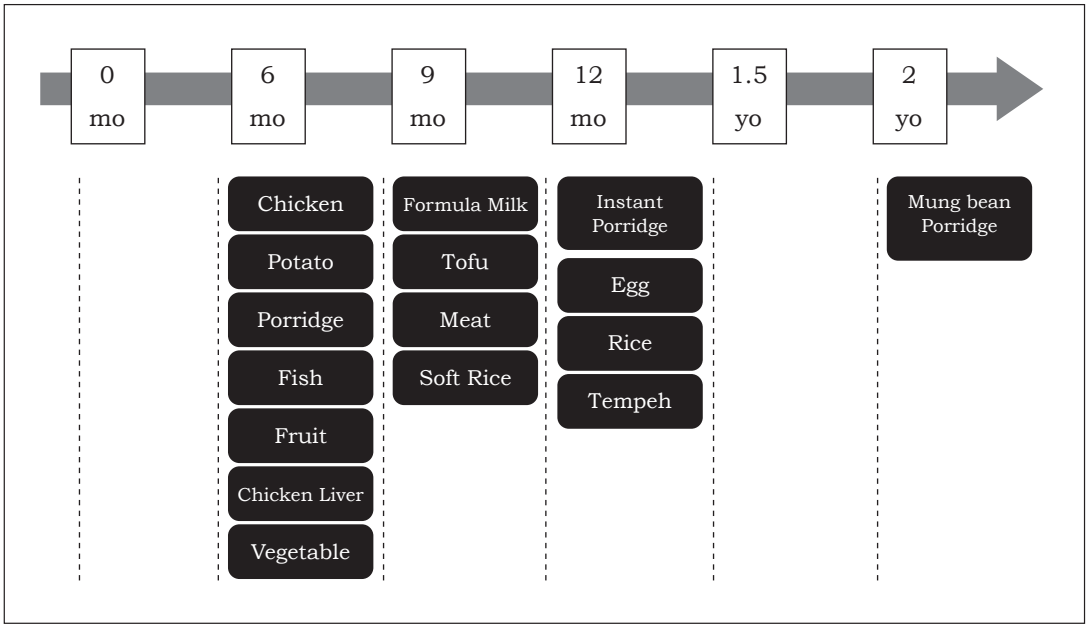
Table 2. Characteristics of the subjects: working and non-working mothers

Characteristics	*Non-working (n=6)*	*Unskilled labour (n=6)*	*Skilled labour (n=7)*	*Professional/ Manager (n=6)*
Child				
Age				
6–11 months	2	2	3	1
12–17 months	2	1	1	4
18–23 months	2	3	3	1
Birth order				
First child	2	3	4	4
Second or older	4	3	3	2
Sex				
Boy	3	4	4	3
Girl	3	2	3	3
Provided Minimal Dietary Diversity (MDD)	4	1	3	4
Mother				
Employment duration				
>5 years	NA	3	3	3
≤5 years	NA	3	4	3
Age				
≥30 years old	4	2	3	3
<30 years old	2	4	4	3
Additional informants in each group				
Caregivers				
Grandmother	1	1	1	0
Babysitter	1	1	1	2
Family (husband)	1	1	1	1

NA=not applicable



(a) Practised by L, 33 years old, mother of 13-month-old boy; L is an administrative staff member and represents the working mothers at the skilled labour level



(b) Practised by ED, 40 years old caregiver of P's 17-month-old girl; P is a 34 years old and represents working mothers at the professional level

Figure 2. Examples of card-sorting activity and timeline for dietary diversity practice. The figures show (a) late introduction and inadequate dietary diversity by a mother at an unskilled labour level; and (b) more diverse complementary foods with timely introduction of animal protein by a mother at a professional level. (mo: months old of child age; yo: years old of child age)

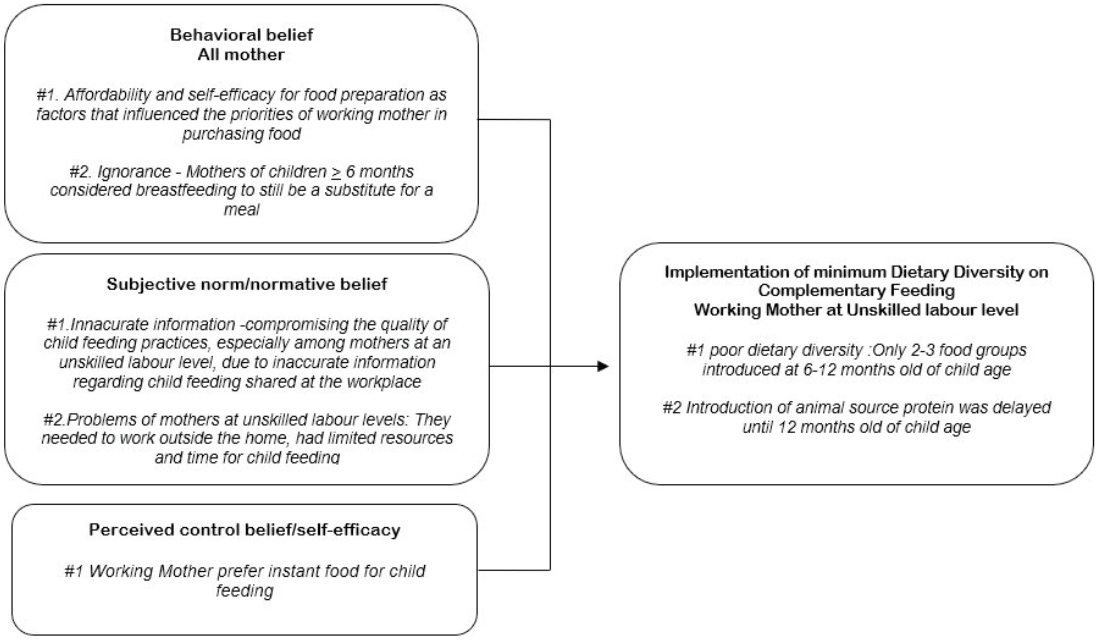


Figure 3. Emerging themes in this qualitative study based on the Health Belief Model

working mother and a caregiver at the lower occupational level were presented as follows.

> *"Porridge with sliced vegetables and probably minced banana or papaya… I think that was the only food that my child can have before one year old…"* (Su, 27 years old, labourer in a garment factory, unskilled labour, mother of a 12-month-old girl)

> *"Why despite knowing that vegetables were important for the child at 9 months of age, yet I gave them at the age of 12 months? I just started with something that she (the child) likes such as chicken porridge and banana"* (Y, 34 years old, paid caregiver of a 15-month-old girl whose mother works as a garment labourer, unskilled labour)

Beliefs regarding dietary diversity

The emerging themes that were identified in the study were used to understand the poor dietary diversity practices that existed especially among working mothers at lower occupational levels. Most mothers considered breastmilk adequate for the child, and did not think that it was necessary to complement it with other foods, especially vegetables, which they considered were unsuitable for young children. The problems that these working mothers mentioned were as follows: (i) inability of the mother to cook, (ii) heavy dependence on a caregiver, (iii) lack of time for food preparation, (iv) children who were highly selective about the foods they eat, (v) children who disliked fruits and vegetables, and (vi) mothers who could not breastfeed. These working mothers preferred instant foods to complementary feeding because less time was required for preparing such foods.

These mothers also preferred to discuss their problems with other mothers and peers. However, the information regarding child feeding that they shared within their network

was found to be mostly inaccurate. Furthermore, mothers at the unskilled labour level were insufficiently exposed to health care information, either at their workplace or from other sources. The emerging themes that were identified based on the behavioural model are described in Figure 3.

Representative viewpoints

The following are examples that have been selected to represent the views of the various categories of employment in this study.

Emerging theme in behavioural belief #1: Affordability and self-efficacy for food preparation as factors that influenced the priorities of working mother in purchasing food

In prioritising food purchases, mothers generally preferred to provide staples with only one or two additional food groups. At an earlier age (6-9 months), fruit was preferred because it could be easily minced, and children, in general, liked the taste of fruits. When the children reached 12-23 months and were introduced to family food, fruits were given less frequently, because of its price. Vegetables were also given less often because the working mother said that they did not have enough time to prepare, and because the children did not like the taste of vegetables.

> *"She likes fruit... but we only buy fruit when we have extra money... Our priority is to buy chicken, tempeh (fermented soybean) followed by vegetables..."* (E, 33 years old, administrative staff member, skilled labour, mother of a 13-month-old boy)

> *"We know that vegetables are important at her age, but it takes time to prepare... it also takes more time for her to chew the vegetable"* (W, 35 years old, professional, mother of an 8-month-old girl)

Emerging theme in behavioural belief #2: Ignorance - mothers of children ≥ 6 months considered breast milk as a substitute for meal

Most working mothers, especially those at the lower occupation levels, said they tried to continue to breastfeed when working, but faced challenges, such as storing milk at their workplace. Some mothers were not aware that breast milk alone was insufficient for children ≥ 6 months of age. Some of these mothers continued breastfeeding the child as long as the child was satisfied, and did not introduce complementary feeding, especially among mothers with children aged 6-10 months.

> *"He is restless and crying when I get home, most of the time, I breastfeed him to make him sleep... And I think that's enough food for him"* (Ra, 27 years old, administrative staff member, mother of an 8-month-old boy)

> *"I give my expressed breast milk to my daughter after work... She enjoys it and then we play together until she falls asleep..."* (Re, 29 years old, manager, mother of a 10-month-old girl)

Emerging theme in normative belief #1: Inaccurate information - compromising the quality of child feeding practices, especially among mothers at an unskilled labour level, due to inaccurate information regarding child-feeding shared at the workplace

Mothers at unskilled labour levels admitted their preference for sharing information and discussing feeding problems with their co-workers at their workplace. Such information presumably gathered from more experienced mothers.

It may have been inaccurate and this could account for the quality of child feeding practices being compromised.

Working mothers at the unskilled labour level seldom received health education about recommended feeding practices, in the workplace or from community health cadres. Most caregivers helping the mothers at the lower levels of occupation did not take the children for routine growth measurements at the integrated community-based health posts (called *Posyandu* in the Indonesian language).

> *"We never had a chance to bring our kid to Posyandu because we work... I am not sure my neighbour (who babysat her child when she works) would take her there"* (N, 28 years old, an unskilled labourer working at a small garment factory, mother of a 15-month-old girl)

> "*I never took her to Posyandu... it's not far ... but for me she's healthy enough... her mom never asked me anyway*" (Id, 28 years old, caregiver, helping Su, an unskilled labourer in a garment factory, mother of a 12-month-old girl)

By contrast, mothers working at higher occupation levels are well informed and reminded by other working mothers or health workers about healthy child feeding practices.

> *"I was advised by Mrs XX (her senior co-worker) to buy ready-to-eat infant porridge... because it is practical, time-saving and yet cheap"* (Su, 27 years old, unskilled labourer in a garment factory, mother of a 12-month-old girl)

> *"I was once influenced by my friend (pointing at her working peer) to buy 'healthy porridge'; but my child had diarrhoea and was admitted to a hospital after consuming porridge from the vendor. I did not know what was wrong with the porridge... it was traumatic... but I had no choice back then, because I could only prepare instant food"* (Ef, 33 years old, administrative staff member, skilled labour, mother of a 13-month-old boy)

> *"I am happy with child care here (pointing at child care facility in the office), the nurse gave me information about how to prepare complementary food... We also have pictures of our children who succeed exclusive breastfeeding and reach 2 years old"* (W, 35 years old, professional, mother of a 8-month-old girl)

> *"Here the moms (referring to her co-workers, who were also working mothers) are quite talkative about breastfeeding and child feeding... I hesitate if I failed to give my child proper feeding... Yes, they often protest if I say anything about instant food (for my child feeding)"* (R, 28 years old, professional, mother of a 15-month-old boy)

Also, mothers working at higher occupation levels had access to breastfeeding rooms, child weighing programmes and education or consultation programmes, that are provided by the companies.

> *"We know that most of our staff here are the new moms... Therefore, we provide a special room for breast milk expression and a nurse to give them information about how to prepare food to their children"* (W, 45 years old, manager of a private company, employer of professionals)

"Our breastfeeding room… with privacy for breast-pumping, refrigerator and health education brochures. But you may see the pictures of staff's children who succeeded with exclusive breastfeeding or who are > 2 years old… It's part of our motivational and education programme" (Re, 29 years old, manager of an international company, professional, mother of a 10-month-old girl)

Emerging theme in subjective norm/ normative belief #2: Problems of mothers at unskilled labour levels: They needed to work outside the home, had limited resources and time for child feeding

Mothers at unskilled labour levels had to work in informal sectors or small companies because their families needed the extra income. Some of them made time at night or in the early morning to prepare food or delegated food preparation to the caregiver. In delegating food preparation, some may have faced additional problems due to limited resources or money to be given to the caregiver.

"I pushed myself to get up earlier in the morning… then I cooked my child's food… it was exhausting… but even though my husband asked me to resign, I am tied to a work contract at my company and my boss did not allow me to leave" (E, 33 years old, administration staff member, mother of a 13-month-old boy)

"She only gave me approximately 10.000 rupiahs daily for her child's food… what do you expect me to do? So, I just buy any food I can with that amount of money… as long as she eats something" (En, child caregiver and neighbour of SL, who worked in a small garment factory, mother of an 18-month-old girl)

"In fact, it's sad to leave my daughter and let my neighbour take care of her (while shedding tears) … feed her… but what can I do… I need to earn… to work… because my husband's income alone is not enough to feed our family…" (N, 28 years old, who worked in a small garment factory, mother of a 15-month-old girl)

Emerging themes in self-efficacy/control belief #1: Working mothers prefer instant foods for child feeding

Most working mothers at the lower occupation levels provided their child with instant foods because they thought such foods were nutritious and did not require much time to prepare. Non-working mothers were more likely to prepare and cook the foods themselves.

"Because I had to get back to work when the child was approximately 3 months old, I mostly prepared instant food from the supermarket" (L, 33 years old, unskilled labourer in garment factory, mother of an 8-month-old boy)

"Nowadays, we can easily buy healthy child noodles from street or legal vendors… they have good variations of sliced meat and vegetables" (N, 25 years old, secretary, mother of a 7-month-old boy)

"Every morning I decide what to cook for my child, based on what he likes, for instance, soft rice nasi tim… We bought the ingredients from the market 2-3 days before" (Si, 22 years old, non-working mother of a 9-month-old boy)

An officer at the Ministry of Health confirmed this issue and said that fortification of instant foods was a strategy in Indonesia to address the lack of nutrient diversity in instant foods.

> *"We are concerned that our diversification strategy may fail, knowing that the SUSENAS (National Indonesian Economy Census) data showed that our people's consumption of instant foods has been increasing… therefore, the strategy of fortification of instant foods has become an unfinished debate" (*AS, officer in the nutrition section at the Ministry of Health Republic of Indonesia)

DISCUSSION

To the best of our knowledge, the present study was the first in Indonesia that used a behavioural model to qualitatively explore the determinants of complementary feeding practices, especially dietary diversity, among working mothers at three occupational levels. By framing the emerging themes into a behavioural model, the study identified behavioural, control and normative beliefs that influence dietary diversity practice

Overall, working mothers faced difficulties in feeding vegetables to infants and young children, and wrongly believed that breast milk could replace complementary food beyond 6 months of age. The challenges in feeding young children vegetables were also noted (Knai *et al.*, 2006). In addition, this study identified poor dietary diversity practices that were specific to working mothers at lower occupational levels, including the late introduction of protein from animal sources, and the provision of staples with only one or two other food groups.

Women who joined the workforce were expected to become more empowered in some of the following ways: i) economically, through income generation and control over finances, ii) socially, through social support, access to health services, in control of own health care and greater mobility, and iii) legally, through better bargaining power (Na *et al.*, 2015). However, in developing countries, there is an increasing number of mothers join at the unskilled labour level. As such, they are said to be in transition in trying to gain empowerment as they continue to struggle with limited resources (Razavi, 2012). The evidence that the empowerment of women improves complementary feeding practice is mixed (Vereecken & Maes, 2010; Malapit *et al.*, 2015). Malapit *et al.* (2015) reported that, in Nepal, women's empowerment in areas such as control over income and reduced workload was positively associated with the improvement of children's diets.

In this study, mothers working at the unskilled levels admitted that they needed to work to financially help their families. However, they experienced a loss of control over child feeding, owing to their dependence on others. By contrast, working mothers at higher levels of the workforce, who often chose to work as an act of self-actualisation, were involved in making decisions regarding child feeding. Thus, the different domains of women's empowerment (control of resources and autonomy, workload and time, and social support) may relate differently to the dietary intake and nutritional status of a child (Cunningham *et al.*, 2015).

Mothers working at the unskilled labour level had a small network of peers whom they relied on to discuss child-feeding problems. However, this study found that they received compromised nutritional advice like the tendency to buy instant foods or the late introduction of animal proteins. Storey & Figueroa (2012) explained that behavioural change was influenced not only by individual thinking related to the benefit of action, but also the perception of others in the community. When the community constantly share inaccurate messages, it might lead to compromised norms of behaviours related to child care and feeding (Devine

et al., 2009). The normative beliefs that lead complementary feeding practices being compromised among unskilled labourers and the sharing of such beliefs among their peers, highlight the need for food literacy education for working mothers, especially among those at the lower occupation levels. Among the mothers at the unskilled work level, exposure to nutrition-related education and child-care support facilities were limited. Breastfeeding rooms and health education services by health professionals were found to be a part of employee facilities only in large companies, but not in unskilled labour workplaces. These working mothers also faced challenges to bring their children to the community health posts (*Posyandu*) for health-care needs. Socially disadvantaged working mothers in United States also experienced a similar situation of exposing their children to potential health and developmental risks (Grzywacs *et al.*, 2010).

Thus, the delivery of nutritional education to improve feeding practices needs to be widely targeted to include health workers, family members and also peers of working mothers. This approach is in line with the initiative that addressed the first 1000 days of life by the Indonesian government, which emphasised the equal importance of breastfeeding and complementary feeding quality. In this regard, complementary feeding education must also be strengthened and balanced with breastfeeding education (Ministry of Welfare GoI, 2013). Since it is known that the workplace has a big contribution in developing the perspectives of mothers on proper child feeding practices, inter-sectoral collaboration among related government agencies such as the Ministry of Health, Ministry of Labour, Ministry of Industry and Ministry of Women Empowerment needs to be intensified. Further studies on effective educational strategies in workplace settings to improve the quality of complementary feeding are much needed.

Limitations of study

As the sample size was small and the coverage was not wide, these findings do not necessarily represent the views of all working mothers in the study area. The participants were selected and stratified based on occupation levels, and the findings may be applicable to other individuals with similar characteristics and context (working mothers in urban areas).

CONCLUSION

The present qualitative study revealed that working mothers at lower occupation levels practised poor dietary diversity owing to several work-related factors. Efforts to provide correct nutrition information related to complementary feeding should be undertaken at workplaces, especially for working mothers, in the lower levels of occupation.

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Authors' contributions

AK, designed the study, conducted data analysis and prepared the first draft of the article; JF, designed the study, supervised data analysis and

contributed to the final draft of the article; MM, designed the study, supervised data analysis and contributed to final draft of the article; AS, designed the study and contributed to the final draft of the article.

Conflict of interest

The authors declare no potential conflicts of interest with respect to the research, authorship or publication of this article.

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