A Survey of Infant and Young Child Feeding in Hong Kong:

Parental Perceptions and Practices

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And

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Content

Executive Summary

The first five years of life is the period when eating habits become established. The most important influence on children's eating behaviours is their parents' feeding practices. To facilitate children to eat an appropriate amount of a healthy diet, the optimal practice should involve a division of responsibility between parents and children. Parents are responsible for providing a supportive eating context and a wide array of nutritious foods to the child while the child is responsible for deciding what and how much to eat. The objective of the present study was to examine the feeding practices of Hong Kong parents with young children.

Methods

This was a cross-sectional survey. The target population was Chinese parents of children aged 6 months to 48 months living in Hong Kong. The source population were parents whose children had registered with Maternal and Child Health Centres (MCHCs), which covered more than 90% of children born to local parents. Parents with children aged 6 months, 9 months, 12 months, 18 months, 24 months and 48 months were recruited. The inclusion criteria were: (i) both parents being Hong Kong Chinese citizens; and (ii) the child being born full-term. Children with congenital abnormalities, chronic illnesses or developmental abnormalities were excluded. Participants were selected through simple random sampling with the MCHC register as the sampling frame. Parents were requested to complete a self-report questionnaire on perception and practices of feeding young children. Body weight and height/length were measured according to standard procedures.

Results

The Sample

Among 2849 parents sampled, 1893 were contactable and among them, 1474 participated. The participation and response rate were 51.7% and 77.9% respectively. Compared with the 2006 by-census, non-local born parents, parents with low educational attainment and low income, as well as older fathers were under-represented in the present sample. Local-born parents and parents with tertiary education were over-represented. Income level of our sample tended to crowd towards the middle range (i.e., between HK$20,000 and HK$39,999). There were more parents who were not married in our sample.

Children's Weight Status

Based on the WHO Child Growth Standard (2006), there was a higher percentage of overweight/obese children in the 24-month (4.7%) and 48-month (3.9%) group than expected (2.3%).

The Carer

In the majority of families, mothers were the main carers, responsible for making decisions about food purchase and cooking method, the actual cooking and feeding the child, followed by grandparents and domestic helpers.

Providing a Conducive Eating Environment

The majority of our parents set a fixed meal schedule, provided a suitable chair, talked with and encouraged their children during meal times. However, a fair proportion of parents allowed distractions such as playing with toys and television viewing during meal time, whereas only half of the 18 to 24-month-olds were dining with their family members.

Facilitating Children's Self-feeding Skills

A fair proportion of parents were over-concerned about cleanliness such as not allowing their children to grab food or frequently cleaning their faces during meals. Though the majority of 9-month-olds were able to grab food to eat, only a quarter of 12-month-olds were able to use a training cup, and a fifth of 18-month-olds could use spoon tidily.

Providing a Variety of Food

Preparing children's meals out of the family food basket was not a common practice among parents, with only a quarter of parents of 9-month-old children doing so, increasing to about 40% among parents of 18-month-olds. Most parents reported that they provided a variety of foods and used healthy cooking methods. Parents of older children were more likely to let their children eat junk and processed food. Over 80% of parents stored junk food at home but had them hidden away.

Respecting Children's Self-regulation

While most of the parents claimed they could tell whether their children were hungry or full, about half believed they should decide how much their children should eat. In practice, a substantial proportion never granted their children autonomy, either by limiting the portion size or demanding them to finish up their meals.

Worrying about Children's Over/Under Weight and Over/Under Eating

Parents tended to under-estimate their children's weight, and worry about their children becoming underweight or not eating enough. Their worries were more strongly associated with their perception of children's weight (which tended to be an under-estimation) rather than their actual weight. Parental worries about under-weight and under-eating were associated with parental beliefs about children's self-regulation and controlling feeding practices.

Association between Parental Feeding Practices and Children's Avoidant Eating Behaviour

Picky eating and slowness in eating in children were associated with parental controlling feeding practices such as chasing the child to feed him, but not associated with under-weight status.

There was a higher percentage of children in the 24 and 48 months groups who were described by their parents as having difficulty in trying new food. Though most parents claimed to repeatedly introduce new food to children, only 20% made more than 10 attempts. About 50% of parents reported they would model eating new foods in front of their children.

Strengths and Limitations

This is the first large scale survey of feeding practices of parents of preschool children in Hong Kong.

The sampling frame was the registry of MCHC users, which covered over 90% of babies born to local parents. Probability sampling was used to obtain a representative sample. Compared with the 2006 by-census, non-local born parents, parents with low educational attainment and low income, as well as older fathers were under-represented in the present sample. There were more parents who were not married in our sample.

The development of the questionnaires was based on literature and views of local parents. Though the content validity of both sets of questionnaires was ensured through literature review and focus group discussion with parents, criterion validity and measurement properties were only investigated for the questionnaire of the 24- and 48-month groups.

The collection of data on feeding practices was based on parental report rather than actual observation of children's eating behaviour or parent-child interaction.

This was originally designed as a cross-sectional descriptive study to provide an overall picture of the beliefs, attitudes and feeding practices of parents of preschool children. No sub-group analysis (e.g., differences between socioeconomic groups) was conducted. Associations between variables should not be interpreted as causal relationships, and could only be considered as exploratory, though the results were consistent with the literature. Age trends could be due to differences between groups of parents, rather than actual age differences.

Conclusions and Recommendations

Feeding of young children does not only serve a biological function to meet the nutrient requirements of children for daily activities and growth, but also a social function that involves complex parent-child interaction in the context of the home environment. In the present study, parental over-concern about their children being under-weight and not eating enough was associated with various controlling feeding practices which might result in a negative eating atmosphere and avoidant eating behaviours. In turn, these behaviours might drive parents to use more controlling strategies, thus creating a vicious spiral. To foster the consumption of a healthy diet and the establishment of developmentally and socially appropriate eating behaviour in children, parents are encouraged to follow these recommendations:

1. Scheduling meals
    1.1. While young infants should be fed on demand to meet their biological needs, they should gradually be socialized to follow family meal routines.
    1.2. By about 12 months, children should be provided with three main meals and two or three snacks per day.
2. Providing a conducive environment
    2.1. Children should eat with the family where parents could interact with them and model desirable eating behaviours.
    2.2. Children should be provided with a regular and comfortable seat at the family dining table.
    2.3. Parents should try to minimise distraction during meal times, e.g. removing

toys and tablet computers and turning off the television.

3. Facilitating the intake of an appropriate amount of a varied diet: a division of responsibility between parent and child
   3.1. The prime responsibility of parents is to provide a variety of nutritious foods in different combinations of colours, tastes and textures.
   3.2. The child is responsible for deciding whether to eat a particular food and how much.
   3.3. When feeding a child, parents should be sensitive to the child's hunger and satiety cues, feed patiently and encourage the child to eat without pressure.
   3.4. To increase food acceptance, parents should use effective strategies, such as repeated exposure and modelling.
4. Fostering independence
   4.1. During transitional feeding, children should gradually move from being totally fed by parents (before 6 months), through parallel feeding, to eating independently by 24 months.
   4.2. Parents should facilitate the development of self-feeding skills in children, through encouragement and provision of suitable feeding utensils.
5. Maintaining standards of behaviour
   5.1. Parents should set rules and limits to facilitate the development of appropriate meal time behaviours.
   5.2. Parents should use appropriate strategies and take prompt actions to prevent behaviour problems.

Chapter 1: Introduction

The first five years of life is the period when eating habits become established[1,2,3]. A systematic review of longitudinal studies indicates that overweight or obese children are more likely to become overweight or obese adults[4]. The probability of adult obesity (BMI > 30) for boys and girls with BMI at the 95th percentile (cut-off for childhood obesity in the US) was 20% to 40%[5]. The most important influence on children's eating behaviours is their parents' feeding practices. Children from birth through the preschool years vary greatly in their nutritional and developmental needs. Parental concerns and parent-child interactions at mealtime also differ with children's stages of development. Optimal practice should involve a division of responsibility between parents and children. Parents are responsible for providing a supportive eating context and a wide array of nutritious foods to children while children are responsible for deciding what and how much to eat. Below is a review of the literature on young children's diet and nutrition and evidence-based strategies that parents could use to facilitate optimal eating in their children.

1. Diet and Nutrition of Infants and Young Children

1.1. Breastfeeding (0-6 months)

In the first 6 months, infants rely on a milk-based diet, and should preferably be exclusively breastfed or fed infant formula if breastfeeding is not opted for[6].

1.2. Transitional feeding (6-24 months)

Around 6 months of age, complementary feeding should be introduced to provide adequate nutrients, notably iron, zinc, vitamin A and other micronutrients[2].

To prevent sensitization and development of atopic diseases, such as atopic dermatitis, the different types of foods should be introduced no earlier than 4 months or 17 weeks of age, one at a time[3]. The practice of avoidance or delaying the introduction of potentially allergenic foods, such as eggs, fish, nuts and sea-foods till after 6 months was not supported by findings in cohort studies[3,7].

To ensure that nutrient needs are met, meat, poultry, fish or eggs should be eaten as often as possible, preferably daily[8], as they are rich in the key micronutrients such as iron, zinc, vitamin B6. The diet should also include vegetables and fruits which provide children with folate, vitamin A, and vitamin C. Consuming vitamin C rich vegetables or fruits enhances the absorption of iron from the diet, particularly that from legumes and green leafy vegetables. Both meats and legumes provide vitamin B. It is notable that green leafy vegetables are also additional source of iron and calcium[8,9].

As milk intake decreases during the course of transition to eating a family diet, fat or oil added in solid foods is required to provide essential fatty acids as well as to enhance dietary energy density[8,9].

There is evidence of association between early salt intake and high blood pressure. Salt intake is recommended to be limited to less than 1 g a day[10]. Use of salt in complementary food is generally not recommended[9]. Sugary and soft drinks should be limited if not avoided as it provides calories but little nutrients[8,9].

1.3. Eating a Family Diet (>2 years)

For children aged 2 years and older, they should be eating a variety of foods from the 5 main food groups daily in a balanced way[9,11]. Grains should be eaten most, then vegetables and fruits. Foods in the meat group should be eaten moderately. Milk and milk products or other calcium-rich foods should be eaten to provide calcium. Parents should use little oil in cooking and limit salt in seasoning. Foods high in salt, sugar and fat, in particular saturated fat, should be avoided. Lean meat, reduced fat or skimmed milk should be used instead. Consumption of foods with higher dietary fibre is recommended, thus whole fruits is preferred to juice[12].

2. Self-regulation

There is evidence to show that children have the ability to self-regulate the amount of food intake for daily activities and growth. In an early study where infants and toddlers in an orphanage were allowed to self-select the amount of food, the average daily energy intake was within the child's age standard and they all had normal growth and health[13]. Another study[14] found that infants were responsive to the energy density of formula milk consumed earlier and adjusted their subsequent intake accordingly. In a later study[15], preschool children were given food of different caloric density and they were subsequently allowed to eat ad libitum. It was found that children ate greater amount subsequent to an earlier intake of a food lower caloric density and vice versa. Further, a negative association was observed between energy density, and portion size among infants 11 months and younger, as well as eating frequency and portion size in all age groups 4 to 24 months[16]. This self-regulation could be within meals or across meals, which resulted in a fairly constant average daily energy intake, though larger variations between individual meals were observed[17,18,19,20]. These provided clear evidence for children's self-regulation of intake over a longer period of time, which suggested that coercive feeding strategy, commonly adopted by parents, is not warranted.

Children who are given no control in determining the amount of food they eat may not learn to regulate their own appetites and may be at a greater risk for later obesity. Persistent feeding of an excessive amount of food may hinder the child's development of natural response to internal hunger and satiety cues, and weaken the self-regulatory system of food intake[21]. The early experience of eating according to external cues puts children at risk of becoming overweight or obese. For example, when children were rewarded for cleaning their plates or reminded of the amount of food left, they ate more as their responsiveness to food energy intake diminished[22,23]. Furthermore, when children were given larger portions, there was an increase in energy intake and bite size[24,25]. Consequently, children may habitually consume larger amount of food than they need, which fosters the development of obesity.

3. Parental Concern About Children's Weight

There was a general tendency for parents to under-estimate their children's weight. For example, only 21% of overweight preschool children (24 months to 59 months) were perceived by their parents as over-weight[26]. In another study, 46% of over-weight children were perceived by their parents as of normal weight. Among children with normal weight, 24% were perceived by their parents as under-weight[27].

Parents' perception of children's weight, rather than their actual weight status, was associated with their concern about children's weight[27]. These perceptions/concerns, instead of the actual weight status, were in turn associated with their feeding practices. For example, pressure to eat was associated with parental concern about under-weight whereas food restriction was associated with concern about over-weight[28]. Mothers who were concerned about their children being over-weight were less likely to pressure them to eat but they were more likely to restrict their children's intake of selected food[26]. However, these strategies were not associated with children's actual weight status.

4. Responsive Feeding

It is well-established that responsive parenting is associated with secure attachment in infancy, which influences subsequent social, cognitive and language development [29, 30]. Responsive parenting behaviours include being "prompt, emotionally supportive, contingent and developmentally appropriate"[31]. When applied to feeding, responsive parenting is manifested in three different aspects, (i) providing a pleasant feeding context free from distractions, comfortable seating with the child and carer facing each other, clear communication of expectations, and healthy and developmentally appropriate food offered according to a predictable schedule; (ii) responding to the child's hunger and satiety signals; and (iii) prompt and contingent response to the child in an emotionally supportive and developmentally appropriately manner.

A systematic review indicated that there was an association between nonresponsive feeding practices (e.g. controlling, restrictive, indulgent, uninvolved) and children's weight[32]. However, most were cross-sectional studies using self-report questionnaires. For example, in a cross-sectional study, indulgent practices which are neither contingent nor developmentally appropriate, were found to be associated with higher Body Mass Index (BMI) in the children[33]. In a longitudinal study[34], the pattern of weight gain in the first year of life was found to be moderated by observed maternal control during feeding at 6 months. With moderate or low maternal control, infants with rapid early weight gain slowed down between 6 and 12 months and vice versa, suggesting that infants might regulate their own weight gain in the presence of low maternal control. On the other hand, this self-regulation of weight gain was absent in the case of high maternal control. In another longitudinal study not included in the abovementioned systematic review, maternal restriction of the amount and type of food at 5 years predicted more eating in the absence of hunger at 7 and 9 among girls[35]. In a developing country with a prevalence of under-nutrition, a cluster randomized controlled trial indicated that with a 6-session education programme on child self-feeding and maternal responsiveness, there was a decrease in child refusal to eat at post-intervention and an increase in child self-feeding at follow-up in the intervention group, compared with the control group[36], and children in the intervention group gained more weight than those in the control group at follow-up[37].

5. Avoidant Eating Behaviour

Avoidant eating behaviour includes pickiness, slowness in eating, emotional under-eating and satiety responsiveness[38].

Pickiness is defined differently in different studies. In one study[39] pickiness was defined as limited food choices, unwillingness to try new things, avoidance of some food groups and strong food preferences. In another study[40], pickiness was defined as "rejection of a large proportion of familiar (as well as novel) food" resulting in habitual "consumption of a low variety of food". Others[41] reported that the most common pickiness behaviours were "eating a limited variety of food", and "preferring drinks to food". As a result of the lack of agreement on the definition and measurement of pickiness, the prevalence of pickiness in overseas literature varied from 8% to 54% in various age groups[39,41,42,43]. Pickiness, however, had no significant effect on the adequacy of nutrient intake or growth[39,41,42,43].

Food neophobia was considered as a subset of picky eating and defined as "the rejection of foods that are novel or unknown". It is regarded as "an evolutionarily beneficial survival mechanism to help children avoid ingesting noxious or toxic chemicals" when they become mobile. This phenomenon is low at weaning, but peaks between 2 and 6 years, and then decreases[40]. Inappropriate management such as pressure to eat may aggravate the problem.

In a study of children aged 3 to 6 years old, it was found that avoidant eating behaviour was associated with maternal feeding practices such as pressure to eat, restriction of food intake for health reasons, and not providing balanced and varied food intake[38]. In another study of primary school children, pickiness was found to be positively associated with restriction, and negatively with eating enjoyment. The degree of eating enjoyment mediated the effect of pressure to eat on pickiness[44]. Pressure to eat and restriction are associated with parental beliefs on self-regulation. Parents who believe that they should decide the type and amount of food their children should eat are more likely to use these controlling practices[45]. The above findings are based on cross-sectional studies where causal relationship cannot be established. However, the associations are likely to be bi-directional, resulting in a vicious spiral.

Strategies to reduce avoidant eating behaviour include repeated exposure with neutral prompts, parental modelling, provision of a variety of food and a pleasant eating environment. Involvement of children in the preparation or cooking of food has also been found to decrease pickiness[44] as this provides exposure to food and children enjoy hands-on experiences. Provision of food in smaller quantity can be less overwhelming for the child whereas limiting the provision of food only to those accepted by the child is not regarded as a good strategy as it will limit the exposure to food[46]. Controlling practices such as pressure to eat and restriction should be avoided.

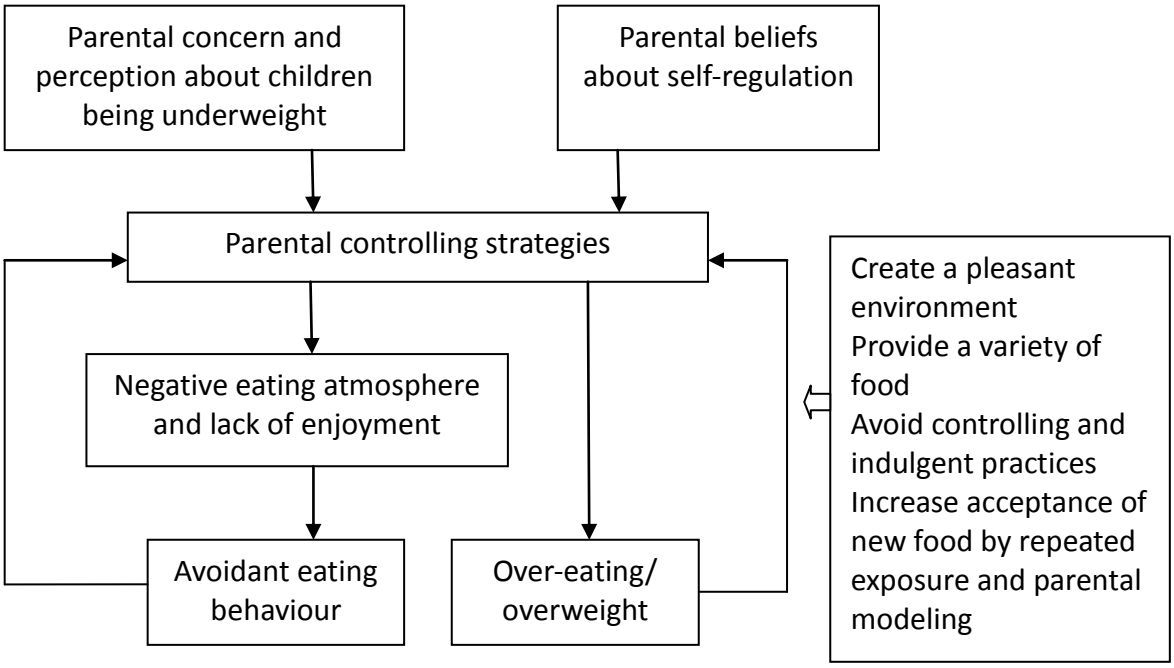

Figure 1: Associations between parental perception, parental feeding practices and child eating behaviours

6. Effective Strategies to Increase Acceptance of Food

6.1. Breastfeeding and acceptance of food variety during transitional feeding

Breastfeeding and the provision of a variety of food early in the transitional feeding period were found to be associated with acceptance of a wider variety of food later on[47,48], including new food[49]. Furthermore, breastfeeding was found to be associated with higher fruit intake among preschool children in a cross-sectional study[50] and predictive of consuming a higher variety of fruits among primary school children in a longitudinal study[51]. It is the exposure of the infant to the flavour of the food the mother eats during lactation that facilitates the initial acceptance of a food[52].

6.2. Repeated exposure

Repeated exposure to an unfamiliar or non-preferred food for 8 days or more, at home or at school, was found to increase acceptance of the target food[53,54,55], even disliked food[56]. A recent study indicated the use of tangible reward (sticker) associated with food exposure could increase consumption of the disliked food. The effect was maintained after the reward had been withdrawn[57].

It was suggested that parents should continue to present the food based on the child's willingness to eat instead of perceived liking, as mothers' rating of their children's liking of food might not tally with their children's actual food acceptance[53].

6.3. Modelling

Modelling is another effective means to increase food acceptance. It was found that children's food acceptance and intake were enhanced with a model eating the same food with the children[58]. In a review[59] on determinants of fruit and vegetable intake among school aged children, parent consumption was found to be one of the determining factors.

7. Undesirable Feeding Strategies

7.1. Using junk food as reward

When a food reward was given for consumption of a target food, the preference for the target food was found to decrease[60]. On the other hand, there was an increase in preference for the food that was used as the reward[60,61]. This suggested that using junk food to encourage eating of non-preferred food would not increase the preference for the non-preferred food. Rather, it would further reinforce preference for junk food.

7.2. Restriction

Prohibition of a food was found to increase the desire for the food. Intake of the forbidden food would increase when the prohibition was not in force[62]. Refraining from storing junk food at home can minimize the need for prohibition, thus reducing the desire for it.

7.3. Television viewing

Experimental studies involving adults[63] and preschool children[64] indicated that television viewing during eating might interfere with self-regulation and satiety cues. This suggests that television viewing while eating may lead to over-eating.

7.4. Using food to regulate emotion and manage behaviour

In an experimental study, preschool children whose parents used food for emotion regulation ate more snacks in a negative mood condition than those whose parents were less likely to use food for emotion regulation[65]. Another experimental study[61] showed that preschool children's preference for food was enhanced by presenting it in a social-affective context such as offering as a reward or in association with adult attention. These suggest that the common practices of giving unhealthy palatable food to children as reward or for emotion regulation by parents and teachers may unintentionally promote children's preference for unhealthy food[1].

8. Self-feeding

One of the major developmental tasks during the early childhood period is the achievement of self-feeding skills. To be able to self-feed effectively, the child needs to be able to sit without or with minimal support, be able to grasp food or eating utensils, and bring them towards the mouth. At the same time, oral-motor skills such as the co-ordination of movement of lips and tongue, chewing and swallowing are also important. To achieve self-feeding, the child has to be developmentally ready and be given opportunities to practice these skills at appropriate times. Below is a summary of the major developmental milestones for self-feeding reported by two overseas studies[66,67].

Table 1: Developmental milestones for eating associated gross and fine motor skills[66,67]

Gross and Fine Motor Skills	Achieved by 50%	Achieved by 85%
Sit without help	5.5 months	7 to 8 months
Eat finger food	7 months	9.2 months
Eat finger food without gagging	8.4 months	10 months
Use fingers to self-feed	13.5 months	16 months
Remove food from spoon by upper lip	7.7 months	9 to 11 months
Scoop pudding and bring to mouth	17 months	19 to 24 months
Self-feed with spoon well without much spillage		19 to 24 months
Drink from sippy cup without help		12 to 14 months
Use regular cup	19 to 24 months	
Drink with a small straw	16 months	
Drink with a large straw	24 months	

Table 2: Developmental milestones for eating associated oral-motor skills[66 (p.90)]

Oral-motor Skills	**Mean age (+/-SD) months**
Opens mouth when spoon approaches/touches lips	4.46 (+/- 1.37)
Tongue moves gently back and forth as food enters mouth	4.85 (+/- 1.58)
Tongue used to move food to back of mouth to swallow	4.95 (+/- 1.27)
Keeps food in mouth and is not re-fed	5.72 (+/- 1.58)
Uses tongue and mouth to explore shapes and textures of food	6.29 (+/- 1.44)
Brings top lip down on spoon to remove food	7.73 (+/- 2.23)
Eats food with tiny lumps without gagging	8.70 (+/- 2.03)
Chews softer foods, keeps most in mouth	9.42 (+/- 1.79)
Chews firmer foods, keeps most in mouth	10.53 (+/- 2.10)
Chews and swallows firmer foods without choking	12.17 (+/- 2.28)
Chews foods that produce juice	15.28 (+/- 3.25)

9. Recommendations from professional bodies

A number of professional organizations have set out guidelines or recommendations on optimal feeding practices for parents of preschool children[68,69,70,71] These include:

1. Setting meal time routines
2. Serving 3 main meals and 2 to 3 snacks a day for toddlers and above
3. Providing a balanced diet with variety, right portion and choices
4. Ensuring an appropriate physical environment free of distractions
5. Facilitating family meal times to promote social interaction and to model eating behaviour
6. Practising responsive feeding
7. Using appropriate behaviour management strategies

10. Objective of the Study

The objective of the present study was to examine the feeding practices of parents with young children. A parallel study on dietary intake of children of these parents was also conducted and the results were reported separately.

Chapter 2: Methodology

1. Design

This study was a cross-sectional survey.

2. Participants

We aimed to study Chinese parents of children aged 6 months to 48 months living in Hong Kong. Six distinct age groups were identified for inclusion in the present study: 6 months (children beginning the transition to adult diet); 9 months, 12 months and 18 months (children transitioning to adult diet); 24 months and 48 months (children capable of eating an adult diet independently).

The sampling frame was the registry of Maternal and Child Health Centres (MCHCs) users. Over 90% of babies born to local parents are registered with MCHCs which provide free child health services to children aged 0 to 5. The 10% not registered with MCHCs are likely to have used private health services. The original design was to use the MCHC registry as the main sampling frame to recruit 90% of the participants while the rest were to be recruited from the child health clinic of two private hospitals. However, due to resource constraint, this was not feasible. Therefore, children who have not registered with the MCHCs were not represented in the study.

The computerized client register of 29 out of 31 MCHCs (excluding two remote MCHCs, Cheung Chau and Mui Wo) was used as the sampling frame. Parents with children from six age groups were recruited, namely, 6 months, 9 months, 12 months, 18 months, 24 months and 48 months. The inclusion criteria were: (i) both parents being Chinese (based on surname); Hong Kong citizens, defined as holders of Hong Kong Identity Card; Cantonese-speaking; and (ii) the child being born at a gestational age of at least 37 weeks. Children with congenital abnormalities, chronic illnesses or developmental abnormalities were excluded.

This study of parental practices was conducted in conjunction with a dietary survey of their children. The sample size estimation was based on the average daily energy intake reported in a dietary survey of a cohort of children aged under 7 years in Hong Kong[72] (Leung SSF et. al. 2000). The sample size for each age group was estimated with a 95% confidence interval of 10% of average daily energy intake value. The estimated total sample size for all age groups was 1200.

For the parental practices study, with a sample size of 200 per age group, the 95% confidence interval would vary between 0.08 and 0.14 for proportions of 0.1 and 0.5 respectively.

Based on the assumption of a contact rate of 66% and an allowance for 30% non-response, the total number required was about 2600.

3. Procedures

Simple random sampling was used to obtain a representative sample. Random numbers were generated through SPSS version 16.0

An invitation letter was sent to the selected parents, with a follow-up telephone call 2 weeks afterwards. Parents who agreed to participate were asked to choose from a range of interview time slots at respective MCHCs. To increase the participation rate, interviews were arranged to coincide with health services scheduled for the children. Either or both parents were requested to attend the

interview personally, and to bring along the carer responsible for feeding the child where the parents were not the main carer. A confirmation letter and a consent form were then sent to the parents.

Non-contactable parents were defined as those who could not be contacted after repeated attempts at different times. The non-responders were those who either declined to participate, or consented but failed to find a suitable interview slot.

To unify the interviewing practice, a manual was produced to explain the purpose and content of the study, administration procedures and coding method. Briefing sessions for interviewers were provided by the investigators and practice trials were conducted.

The questionnaires were administered to parents by interviewers at MCHCs. Participants could choose to have the questionnaires read to them or they could complete the questionnaires by themselves. Over 98% chose to have the questionnaires administered by interviewers. Completion of the questionnaire took about 15 to 20 minutes.

The recruitment and data collection were conducted between January and September 2010.

4. Measures

4.1. Parental perception and feeding practices

A parent self-report questionnaire was developed to cover the following areas:

- Parental Perception and Feeding Practices – There were two sets of questionnaires, one for 6 to 18 months, and another for 24 and 48 months. To ensure content validity, the questionnaires were developed based on (1) literature review as outlined in Chapter 1, and (2) themes identified through a qualitative study (interviews with parents) in 2008. Validation of the 24 and 48 months questionnaire was conducted through a two-staged pilot study, with 337 and 347 participants respectively. Rasch analysis was used to ensure that the questionnaire items fulfilled the unidimensionality requirement, and the participants could meaningfully differentiate between the response categories. In terms of criterion validity, the questionnaire correlated with parental stress (r = -0.27), indicating that undesirable child feeding behaviour/practices were associated with higher parenting stress.
- Age at introduction of complementary food and self-feeding - Parents of children of younger age groups were asked to recall the age when the child was first introduced to complementary food and has eaten food from various food groups (6, 9 and 12 months), and the child's ability to self-feed using fingers, spoon or cup (9, 12 and 18 months).
- Demographic information - These included the child's age and gender, number of siblings, and main caregiver; as well as both parents' age, education level, employment status, monthly household income, and marital status.

4.2. Body weight and height/length

The measurement of body weight and height/length was performed according to standard procedures. The body weight of children below 18 months was measured by Tanita BD-585 to the nearest 0.01kg and that of children 18 months or above was measured by Seca electronic scale to the nearest 0.1 kg. Supine length was measured for children below 24 months of age using the measuring mat with graduation of 0.5 cm. Standing height was measured to the nearest 0.1 cm for children 24 months or above by Seca 242 measuring rod.

4. Data Analysis

Descriptive statistics such as frequency, proportion, central tendency and dispersion were calculated. Independent t test was used for comparing means. Multiple regression, multiple logistic regression and Chi-squared test were conducted to explore association and trend, where appropriate. SPSS (version 19) was used for data analysis.

Chapter 3: Main Findings

1. The Sample

Among 2849 parents sampled, 1893 were contactable and among them, 1474 participated. The overall participation rate and response rate were 51.7% (1474/2849) and 77.9% (1474/1893) respectively (see Figure 2). The 48-month-old group had the lowest participation rate (37.6%) whereas the 9-month-old group had the highest participation rate (58.8%). For response rate, the lowest was the 24-month-old group (72.4%) and the highest was the 18-month-old group (84.7%).

The demographic characteristics of the participants are shown in Table 3.

1.1 Comparing the sample with Census information

To assess the representativeness of the present sample, Chi squared test was used to examine differences between the sample and Chinese parents in households with children aged 0 to 5 years in the 2006 by-census. Due to the large sample size, only p levels <0.001 were considered statistically significant. Non-local born parents, parents with low educational attainment and low income, as well as older fathers were under-represented in the present sample. Local-born parents and parents with tertiary education were over-represented. Income level of our sample tended to crowd towards the middle range (i.e., between HK$20,000 and HK$39,999). There were more parents who were not married in our sample. The details are in Table 4.

1. 2 Comparing participants with non-participants

The non-participants (n = 1375) included those who were not contactable (n = 956) and the non-responders (n= 419).

Chi-squared test was used to examine demographic difference between the participants and non-participants. The information was that provided by parents at the first registration with MCHCs, and might not represent the current status of the families. After adjustment for multiple comparisons, there was no statistically significant difference between the two groups, except there were more boys among the participants (50.9%) than non-participants (45%). The details are in Table 5.

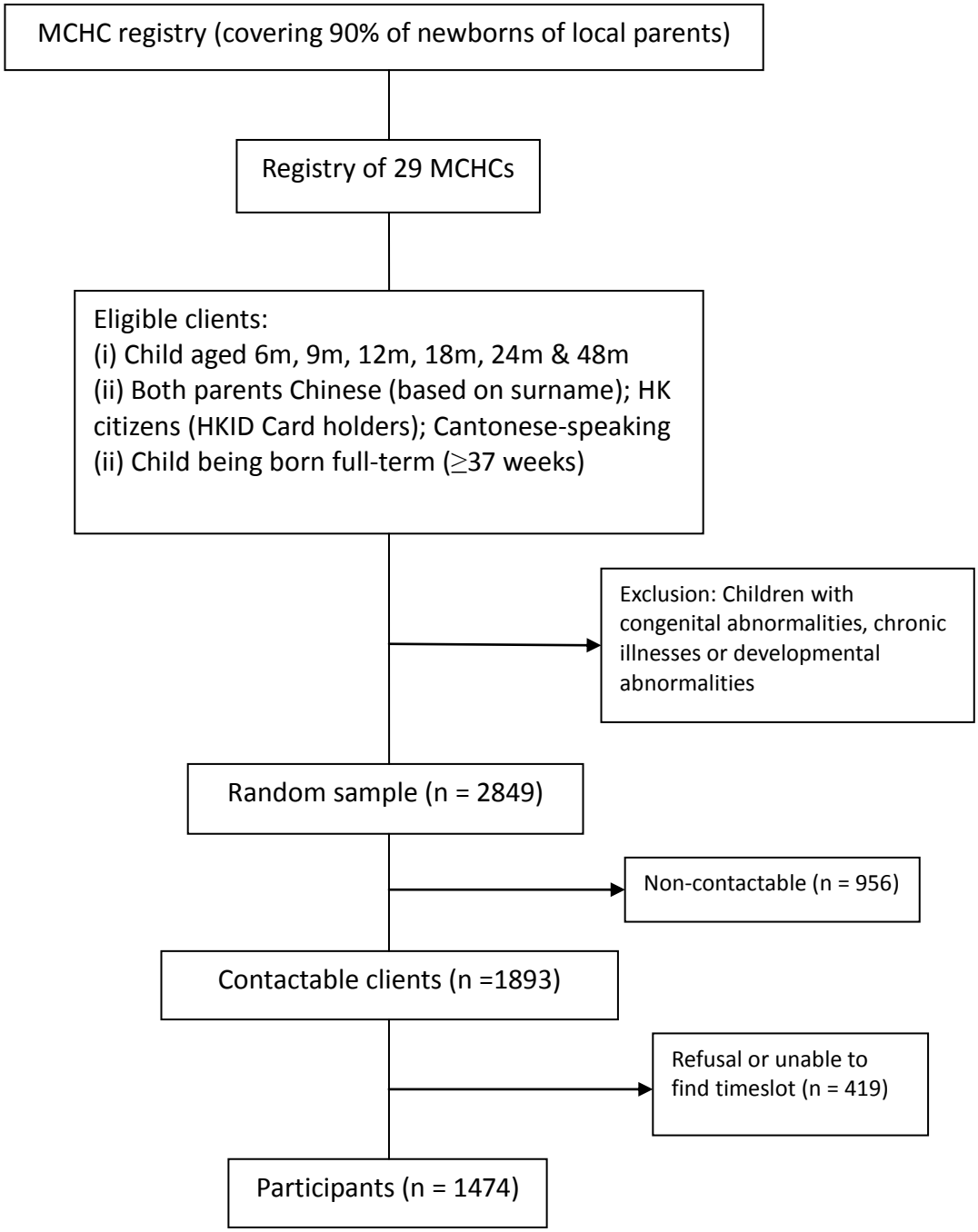

Figure 2: Selection of participants

Table 3: Demographic characteristics of participants

	6-month (n = 194)	9-month (n = 213)	12-month (n = 194)	18-month (n = 277)	24-month (n = 378)	48-month (n = 218)	Overall (n = 1474)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Child's age in month (SD)	6.34 (0.19)	9.39 (0.31)	12.03 (0.26)	18.46 (0.30)	24.56 (0.44)	49.36 (0.65)	NA
Child's weight in kg (SD)	7.88 (0.90)	8.62 (1.00)	9.33 (1.03)	10.58 (1.15)	11.94 (1.30)	16.19 (2.17)	NA
Child's BMI (SD)	17.29 (1.48)	16.83 (1.46)	16.48 (1.39)	16.22 (1.29)	16.18 (1.33)	15.55 (1.32)	NA
	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)
Child's sex							
Female	96 (49.5%)	106 (49.8%)	95 (49%)	165 (59.6%)	155 (41%)	105 (48.2%)	722 (49%)
Male	98 (50.5%)	107 (50.2%)	99 (51%)	112 (40.4%)	223 (59%)	113 (51.8%)	752 (51%)
First born child	101 (52.1%)	122 (57.3%)	107 (55.2%)	157 (56.7%)	212 (56.8%)	123 (56.7%)	822 (55.8%)
Parent interviewed							
Mother	178 (91.8%)	192 (90.1%)	178 (91.8%)	250 (90.3%)	351 (92.9%)	198 (90.8%)	1347 (91.4%)
Father	16 (8.2%)	21 (9.9%)	16 (8.2%)	27 (9.7%)	27 (7.1%)	20 (9.2%)	127 (8.6%)
Mother's age in year							
<30	41 (21.1%)	44 (20.7%)	37 (19.1%)	53 (19.1%)	58 (15.3%)	14 (6.4%)	247 (16.8%)
30-34	76 (39.2%)	79 (37.1%)	78 (40.2%)	101 (36.5%)	121 (32%)	48 (22%)	503 (34.1%)
35-39	63 (32.5%)	79 (37.1%)	64 (33%)	98 (35.4%)	147 (38.9%)	101 (46.3%)	552 (37.4%)
>=40	14 (7.2%)	11 (5.2%)	15 (7.7%)	25 (9%)	52 (13.8%)	55 (25.3%)	172 (11.7%)
Mother's education level							
Form 3 or lower	26 (13.4%)	28 (13.2%)	33 (17%)	38 (13.7%)	65 (17.2%)	36 (16.5%)	226 (15.3%)
Form 4-7	93 (47.9%)	98 (46%)	80 (41.1%)	123 (44.4%)	181 (47.9%)	108 (49.5%)	683 (46.3%)
Tertiary or higher	75 (38.7%)	87 (40.8%)	81 (41.8%)	116 (41.9%)	132 (34.9%)	74 (33.9%)	565 (38.3%)

	6-month (n = 194)	9-month (n = 213)	12-month (n = 194)	18-month (n = 277)	24-month (n = 378)	48-month (n = 218)	Overall (n = 1474)
	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)	Frequency(%)
Mother has full-time employment	116 (59.8%)	118 (55.4%)	119 (61.3%)	158 (57%)	219 (57.9%)	132 (60.6%)	862 (58.5%)
Mother born in Hong Kong	134 (69.1%)	143 (67.1%)	139 (71.7%)	201 (72.6%)	262 (69.3%)	154 (70.6%)	1033 (70.1%)
Father's age in year							
<30	20 (10.3%)	19 (8.9%)	21 (10.8%)	25 (9%)	32 (8.5%)	7 (3.2%)	124 (8.4%)
30-34	65 (33.5%)	58 (27.2%)	66 (34%)	70 (25.3%)	83 (22%)	25 (11.5%)	367 (24.9%)
35-39	63 (32.5%)	76 (35.7%)	50 (25.8%)	106 (38.3%)	143 (37.8%)	95 (43.6%)	533 (36.2%)
>=40	46 (23.7%)	60 (28.2%)	57 (29.4%)	76 (27.5%)	120 (31.7%)	91 (41.7%)	450 (30.5%)
Father's education level (%)							
Form 3 or lower	38 (19.6%)	33 (15.5%)	42 (21.6%)	51 (18.4%)	76 (20.1%)	40 (18.3%)	280 (19%)
Form 4-7	75 (38.7%)	94 (44.1%)	71 (36.6%)	108 (39%)	165 (43.7%)	92 (42.2%)	605 (41%)
Tertiary or higher	81 (41.8%)	86 (40.4%)	81 (41.8%)	118 (42.6%)	137 (36.2%)	86 (39.4%)	589 (40%)
Father has full-time employment (%)	179 (92.3%)	203 (95.3%)	188 (96.9%)	271 (97.8%)	366 (96.8%)	207 (95%)	1414 (95.9%)
Father born in Hong Kong (%)	153 (78.9%)	171 (80%)	162 (83.5%)	228 (82.3%)	299 (79.1%)	177 (81.2%)	1190 (80.7%)
Monthly household income (%)							
<HK$20,000	69 (35.6%)	65 (30.7%)	56 (28.9%)	75 (27.5%)	122 (32.7%)	62 (28.6%)	449 (30.5%)
K$20,000-39,999	65 (33.5%)	78 (36.6%)	81 (41.7%)	112 (41%)	148 (39.7%)	93 (42.9%)	577 (39.1%)
>=HK$40,000	60 (30.9%)	69 (32%)	57 (29.4%)	86 (31.5%)	103 (27.6%)	62 (28.6%)	437 (29.6%)
Parents are married (%)	187 (96.4%)	207 (97.2%)	190 (97.9%)	272 (98.2%)	363 (96%)	207 (95%)	1426 (96.7%)

Table 4: Comparison of demographic characteristics between participants and Chinese parents in households with children 0-5 years of 2006 by-census

	Participants (n = 1474)		2006 by-census		Significance
	n	%	n	%	
Mother's age in year					
Less than 25	38	2.6	5066	2.7	$\chi^2(3) = 7.89$,
25-34	678	46.3	86522	46.4	$p = .048$
35-44	730	49.8	90377	48.5	
45 or above	19	1.3	4449	2.4	
Mother's education level					
Form 3 or lower	250	17.1	54459	29.2	$\chi^2(2) = 125.06$,
Form 4-7	665	45.5	80450	43.2	$p < .001$
Tertiary or higher	547	37.4	51505	27.6	
Mother' length of residence in HK					
Born in HK	1033	70.2	107931	57.9	$\chi^2(2) = 109.93$,
Not born in HK, resided HK >7	284	19.3	41201	22.1	$p < .001$
Not born in HK, resided in HK ≤7 y	154	10.5	37282	20.0	
Father's age in year					
Less than 25	19	1.3	1850	1.0	$\chi^2(3) = 40.89$,
25-34	465	31.7	46417	25.4	$p < .001$
35-44	790	53.9	102684	56.1	
45 or above	193	13.2	31948	17.5	
Father's education level					
Form 3 or lower	301	20.7	59769	32.7	$\chi^2(2) = 94.86$,
Form 4-7	569	39.2	62734	34.3	$p < .001$
Tertiary or higher	582	40.1	60396	33.0	
Father's residency in HK					
Born in HK	1191	80.8	130555	71.4	$\chi^2(2) = 66.01$, $p < .001$
Not born in HK, resided HK >7	252	17.1	48201	26.4	
Not born in HK, resided in HK ≤7 y	31	2.1	4143	2.3	
Parents are married	1426	96.7	361898*	98.0	$\chi^2(1) = 11.80$, $p < .001$
Monthly household income					
<HK$20,000	448	37.3	77 316	41.1	$\chi^2(2) = 25.10$,
HK$20,000-39,999	445	37.1	57 209	30.4	$p < .001$
>=HK$40,000	307	25.6	53 601	28.5	

*In the 2006 by-census, each father and mother had to respond to this question separately and the figure included responses from mothers and fathers. In the present study, the response was for the household.

Table 5: Comparison of demographics between participants and non-participants at first registration with MCHCs

	Participants (n = 1474)		Non-participants (n= 1375)		Significance
	n	%	n	%	
Sex of target child					
Male	751	50.9	619	45.0	$\chi^2(1) = 10.027$,
Female	723	49.1	756	55.0	$p = .002$
Mother's age in year					
Less than 25	94	6.4	104	7.6	$\chi^2(2) = 6.46$,
25-34	903	61.4	885	64.4	$p = .040$
35 or above	474	32.2	386	28.1	
Mother's education level					
Form 3 or lower	246	16.9	232	16.9	$\chi^2(2) = .160$,
Form 4-7	658	45.2	609	44.5	$p = .923$
Tertiary or higher	553	38.0	529	38.6	
Mother's residency status in HK					
Permanent resident	1293	87.9	1211	88.1	$\chi^2(1) = .020$,
Non permanent resident	178	12.1	164	11.9	$p = .887$
Father's age in year					
Less than 25	39	2.7	43	3.2	$\chi^2(3) = 6.530$,
25-34	677	46.1	623	45.6	$p = .088$
35-44	628	42.8	615	45.1	
45 or above	124	8.4	84	6.2	
Father's education level					
Form 3 or lower	296	20.4	284	20.8	$\chi^2(2) = .870$,
Form 4-7	569	39.3	554	40.6	$p = .647$
Tertiary or higher	583	40.3	526	38.6	
Father's residency status in HK					
Permanent resident	1432	97.4	1332	96.9	$\chi^2(2) = .578$,
Non permanent resident	38	2.6	42	3.10	$p = .447$
Parents are married					
Married	1128	98.2	996	98.3	$\chi^2(2) = .133$,
Cohabited	10	0.8	8	0.8	$p = .936$
Others	13	1.0	9	0.9	
Monthly household income					
<HK$20,000	451	37.4	355	36.6	$\chi^2(2) = 3.919$,
HK$20,000-39,999	447	37.1	332	34.2	$p = .141$
>=HK$40,000	308	25.5	283	29.2	

2. Weight Status of Children

The children's BMI were calculated and compared with the WHO Child Growth Standard[73]. Those with z score between -2 and +2 were classified as normal, whereas those with z scores less than -2 were classified as underweight, while those with z score above 2 were classified as overweight or obese. Overall, 1.5% of the children were classified as underweight and 3.0% were classified as overweight or obese (See Table 6).

Table 6: Weight status of children (n= 1344)

	6-month (n = 184) n (%)	9-month (n = 181) n (%)	12-month (n = 176) n (%)	18-month (n = 258) n (%)	24-month (n = 342) n (%)	48-month (n = 203) n (%)	Overall (N = 1344) n (%)
Underweight	4 (2.2)	5 (2.8)	3 (1.7)	3 (1.2)	4 (1.2)	1 (0.5)	20 (1.5)
Normal	175 (95.1)	172 (95.0)	172 (97.7)	249 (96.5)	322 (94.2)	194 (95.6)	1284 (95.5)
Overweight or obese	5 (2.7)	4 (2.2)	1 (0.6)	6 (2.3)	16 (4.7)	8 (3.9)	40 (3.0)

Note:

Underweight: BMI z score < -2.001

Normal: BMI z score $\geq$ -2 and $\leq$ 2

Overweight or obese: BMI z score > 2.001

3. The Carer

Across all age groups, around 90% of children lived with either or both parents at least 5 days a week, and around 30% lived with their grandparents. Overall, 40% of households had a living-in domestic helper.

Table 7: Proportion of children living with various family members at least 5 days a week

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)	Overall (N = 1474) n (%)
Mother	184 (94.9)	190 (89.2)	179 (92.3)	255 (92.1)	346 (91.5)	209 (95.9)	1362 (92.5)
Father	182 (93.8)	190 (88.7)	176 (90.7)	250 (90.3)	330 (87.5)	200 (91.7)	1328 (90.2)
Grandparent	66 (34.0)	57 (26.8)	62 (32.0)	79 (28.5)	122 (32.4)	49 (22.5)	435 (29.5)
Sibling	89 (45.9)	78 (36.6)	79 (40.7)	117 (42.2)	157 (41.6)	132 (60.6)	652 (44.3)
Domestic helper	60 (30.9)	79 (37.1)	83 (42.8)	113 (40.8)	158 (41.9)	100 (45.9)	593 (40.2)
Others	10 (5.2)	14 (6.6)	16 (8.2)	15 (5.4)	24 (6.4)	8 (3.7)	87 (5.9)

The mother was the main child carer during daytime and night time as well as the main person responsible for feeding the child, followed by the domestic helper and the grandparents. The summary findings are in Table 8. The details by age group are in Appendices 1 to 3.

Table 8: Persons responsible for child care

	Child Care		Feeding
	Day time (N = 1474) n (%)	Night time (N = 1474) n (%)	(N = 1474) n (%)
Mother	539 (36.6)	1067 (72.4)	588 (39.9)
Father	24 (1.6)	54 (3.7)	30 (2)
Grandparent	372 (25.2)	159 (10.8)	338 (22.9)
Domestic helpers	478 (32.4)	174 (11.8)	480 (32.6)
Others	61 (4.1)	20 (1.4)	38 (2.6)

Overall, around 65% of mothers were responsible for choosing food for the child or making decisions on cooking method for the child's meals, followed by grandparents. Domestic helpers were only responsible for choosing food or deciding on cooking method for less than 10% of children 24 months or below. However, the percentage increased to 12% and 15% respectively for choosing food and making decision on cooking method in the 48-month-olds (see details in Appendices 4 to 6). When it came to the actual cooking, the responsibility was more equally divided among mothers, grandparents and domestic helpers. The summary findings are in Table 9.

Table 9: Persons responsible for choosing food, deciding cooking method and actual cooking

	Choosing food (n = 1461) n (%)	Deciding cooking method (n = 1460) n (%)	Actual cooking (n = 1461) n (%)
Mother	972 (66.5%)	941 (64.5%)	530 (36.3%)
Father	41 (2.8%)	39 (2.7%)	31 (2.1%)
Grandparent	322 (22.0%)	332 (22.7%)	354 (24.2%)
Domestic helpers	90 (6.2%)	109 (7.5%)	505 (34.6%)
Others	36 (2.5%)	39 (2.7%)	41 (2.8%)

4. Parental Perceptions and Practices

As described in Chapter 1, parents are responsible for ensuring an appropriate feeding context, with scheduling of meals and creating a conducive feeding environment; providing a diet of variety and quality; responding to the child's hunger and satiety cues; maintaining a reasonable standard of behaviour; as well as facilitating independence, whereas the child is expected to decide how much and what to eat, and to move from being fed by the parents to self-feeding, with "parallel feeding" during the transition period.

4.1. Feeding routine

4.1.1. Scheduling meals

During young infancy, feeding on demand is necessary to meet the child's biological needs, but by early childhood, children are socialized to follow a family routine with scheduled main meals and snacks. In our study, around half of parents of 6-month-old children were providing milk to their children at fixed times. For those with children 9 months or older, fixed feeding schedule was a common practice and over 80% adopted a fixed schedule in providing milk and main meals to their children. Furthermore, among parents with children 12 months or older, over 50% regularly provided snacks between main meals.

Table 10: Schedule of feeding

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Milk at fixed time	106 (54.6)	183 (85.9)	171 (88.1)	239 (86.3)	NA	NA
Main meal at fixed time	NA	189 (88.7)	174 (89.7)	252 (91.0)	338 (89.4)	208 (95.4)
Snacks between meals	NA	58 (27.2)	104 (53.6)	187 (67.5)	245 (64.8)	146 (67.0)

Note: The above figures referred to parents who indicated that they always engaged in the respective practices

4.1.2. Provision of a conducive environment

A conducive environment includes eating with family members, minimization of distraction, provision of a regular and comfortable seat and suitable eating utensil, as well as parents talking with their children.

4.1.2.1. Eating with family members

It is expected that by 18 to 24 months, children could dine with family members at family meal times. In our study, only half of the children in these age groups were reported to be doing so. Among the 48-month-olds, there were still 12% who almost never dined with their family members.

Table 11: My child eats dinner with most of the family members [我的孩子和大部分家人同吃晚飯]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	34 (16.0)	64 (33.2)	141 (50.9)	195 (51.6)	152 (69.7)
Sometimes	35 (16.4)	34 (17.6)	71 (25.6)	79 (20.9)	41 (18.8)
Almost never	144 (67.6)	95 (49.2)	65 (23.5)	104 (27.5)	25 (11.5)

4.1.2.2. Provision of a suitable chair and talking with children

Over 60% of parents reported that they would talk, praise and encourage their children while having meals, and they would also provide a chair for their children.

Table 12: I always (a) have the child sit on a chair [我讓孩子坐在椅子上進食] and (b) praise / encourage the child during meal time [吃飯時，我讚賞孩子、說鼓勵他的話]

	6-month (n = 181) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Child sitting on a chair	109 (60.2)	157 (73.7)	140 (72.2)	215 (77.6)
Encouraging child	NA	139 (65.3)	136 (70.1)	223 (80.5)

4.1.2.3. Minimizing distraction

A fair proportion of parents allowed distractions during meal time. For example, over 30% of parents with children aged 12 months or older always allowed them to watch television during meal times and there was a trend for parents of older children to engage more in such practice (χ^2_{trend} (1) = 26.89, $p < 0.001$). Furthermore, 20% to 30% of parents with children aged 9 months to 24 months always let their children play with toys while eating.

Table 13: I always let my child watch television/play toys while having meals [我常常讓我的孩子一邊看電視/玩玩具一邊吃飯]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Watch TV	19 (9.8)	51 (23.9)	66 (34.2)	106 (38.3)	180 (47.6)	80 (36.7)
Play toys	NA	43 (20.2)	75 (38.7)	71 (25.6)	100 (26.5)	34 (15.6)

4.1.2.4. Maintaining standards of behaviour by setting rules and limits

Toddlers and young children have short attention span and limited gastric size, thus requiring frequent but small meals. Most eat well and get what they need in the first 20 minutes[74]. Prolonging a meal may be a sign of struggling to coax the child to eat more than necessary. By 24 months, it is expected that children should finish their meals within a reasonable time, after which the parents should remove the food and no more food should be offered until the next main meal. However, slightly more than 50% of our parents almost never practiced as such.

Table 14: I will put away the food and utensils if my child cannot finish the main meal within an appropriate period of time [若我的孩子不能在適當時間內把正餐吃完，我會把所有食物碗筷收起]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	97 (25.7)	49 (22.5)
Sometimes	72 (19.0)	52 (23.9)
Almost never	209 (55.3)	117 (53.7)

4.2. Type and amount of food provided

Children should preferably be breastfed from birth until around 6 months. Thereafter, parents are responsible for providing a variety of nutritious foods presented in appropriate forms to their children.

4.2.1. Breastfeeding

A decreasing trend was observed in the proportion of children never been breastfed, from 36% among the 48-month-olds to 18.6% among the 6-month-olds (χ^2_{trend} (1) = 24.54, $p < 0.001$). This is consistent with the results of the biennial breastfeeding survey of the Department of Health where the percent ever-breastfed increased from 68.9% in the 2004 birth cohort to 77.1% in the 2010 birth cohort.

Table 15: Breastfeeding status

	6-month (n = 194) n (%)I	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Never	36 (18.60)	46 (21.6)	36 (18.6)	77 (27.8)	115 (30.4)	79 (36.2)
Currently	39 (20.1)	38 (17.8)	16 (8.2)	10 (3.6)	1 (0.3)	0 (0.0)

4.2.2. Transitional feeding

4.2.2.1. Timing of introduction of various food groups

When the child is 6 to 12 months, parents should introduce a variety of foods. It is recommended that children should start by eating pureed food (grains, vegetables and fruits, fish and meat). In our sample, most (around 80% or more) parents indicated that their children had been introduced to grains by 6 months, vegetables and fruits by 7 months, fish and meat by 8 months, egg yolks by 9 months, poultry, egg white and bean by 10 months or later.

4.2.2.2. Types of food provided

Separate purchase of a small amount of different kinds of complementary foods for a young child is tedious and uneconomical; a likely consequence would be the compromise of variety. A more convenient way to provide a variety of complementary foods for young children is to prepare them from the same food basket for the rest of the family. This practice was only adopted regularly by 25% of parents of 9-month-olds and 40% of the 18-month-old group.

Table 16: I use the same ingredients to prepare meals for children and adult members of my family [我用同樣的食材來烹調孩子的食物和家中成年人的正餐]

	9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)
Always	57 (26.8)	59 (30.6)	118 (42.6)
Sometimes	47 (22.1)	35 (18.1)	73 (26.4)
Almost never	109 (51.2)	99 (51.3)	86 (31.0)

In terms of the type of food, the majority of parents reported that they would provide meat/legume and vegetables twice a day, and fruits at least once a day. Only up to 15% of parents let their children consume juice/sweetened beverage at least once a day.

Table 17: Frequency of providing different types of food

		12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Vegetable	Once a day	25 (12.9)	42 (15.2)	64 (16.9)	33 (15.1)
	Twice a day or more	146 (75.3)	211 (76.2)	281 (74.3)	171 (78.4)
Meat/legume	Once a day	30 (15.5)	41 (14.8)	53 (14.0)	33 (15.1)
	Twice a day or more	140 (72.2)	215 (77.6)	296 (78.3)	168 (77.1)
Fruit	Once a day	100 (51.5)	154 (55.6)	200 (52.9)	105 (48.2)
	Twice a day or more	26 (13.4)	64 (23.1)	79 (20.9)	59 (27.1)
Juice/ sweetened beverage	Once a day	19 (9.8)	40 (14.4)	61 (16.1)	24 (11.0)
	Twice a day or more	1 (0.5)	7 (2.5)	9 (2.4)	7 (3.2)

Around 90% of the parents tended to make the taste plainer when preparing food for children. There was a trend in terms of provision of salty and fatty food with over 90% of parents with children aged 12 months or below indicating that they never did so, but the percentage decreased to between 50% and 70% for those with children aged 18 and 24 months. The percentage dropped to 25% and 48% for the 48-month-olds.

Table 18: The food I prepare for my child tastes blander than that for adults [我弄給孩子吃的食物，味道比家中成年人吃的清淡]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	206 (96.7)	188 (96.9)	241 (87.0)
Sometimes	4 (1.9)	3 (1.5)	17 (6.1)
Almost never	2 (1.4)	3 (1.5)	19 (6.9)

Table 19: I almost never let my child eat food with high salt / fat content [我幾乎完全不讓孩子食高鹽份/高脂肪的食物]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Salty	207 (97.2)	180 (92.8)	217 (78.3)	263 (69.6)	104 (47.7)
Fatty	208 (97.7)	177 (91.2)	212 (76.5)	196 (51.9)	54 (24.8)

Note: Salty food: χ^2_{trend} (1) = 197.35, p < 0.001 Fatty food: χ^2_{trend} (1) = 308.06, p < 0.001

By the time the children were eating family foods (i.e. in the 24 and 48 months age group), over 50% of the parents reported that they provided more vegetables than meat, used oil and salt sparingly in cooking, and chose healthy food while eating out. Parents also claimed that they seldom used frying. However, parents of 4-year-olds were more likely to provide processed food to their children.

Table 20: Healthy eating and cooking practices

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
I deliberately choose healthy food when eating out with my child [我和孩子上食肆時會刻意選擇較健康的食物]	231 (61.1)	118 (54.1)
The meals I prepare for my child contain more vegetables than meat [我為孩子準備的飯餸是多菜少肉]	198 (52.4)	127 (58.3)
I deliberately use little oil to cook [我烹食時刻意少落油]	263 (69.6)	151 (69.3)
I deliberately use little salt to cook [我烹食時刻意少落鹽]	270 (71.4)	148 (67.9)
I almost never use high-salt processed food as ingredients to prepare meals for my child [我幾乎完全不用高鹽的加工食材來給孩子煮食]	229 (60.6)	65 (29.8)
I almost never fry/deep fry [我烹食時幾乎完全不用煎炸的方法]	247 (65.3)	109 (50.0)

In terms of junk food, there was a significant age trend where parents of older children were more likely to let their children eat junk food ($\chi^2_{Linear}(1) = 81.63$, $p < 0.001$). Among the 2-year-olds and 4-year-olds, over 80% of the parents stored junk food at home. The majority of parents hid junk food in places beyond the reach of their children.

Table 21: Provision and management of junk food

		9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
I let my child eat junk food [我給孩子吃零食]	Always	2 (0.9)	28 (14.5)	43 (15.5)	53 (14.0)	34 (15.6)
	Sometimes	18 (8.5)	94 (48.7)	144 (52.0)	215 (56.9)	135 (61.9)
	Almost never	193 (90.6)	71 (36.8)	90 (32.5)	110 (29.1)	49 (22.5)
I store junk food at home [我在家中儲存零食]	Always	-	-	-	199 (52.6)	122 (56.0)
	Sometimes	-	-	-	127 (33.6)	67 (30.7)
	Almost never	-	-	-	52 (13.8)	29 (13.3)
I put junk food beyond my child's reach [我把零食放在孩子接觸不到的地方]	Always	-	-	-	309 (81.7)	150 (68.8)
	Sometimes	-	-	-	20 (5.3)	17 (7.8)
	Almost never	-	-	-	49 (13.0)	51 (23.4)

4.3. Self-regulation

4.3.1. Parental belief about child's self-regulation

While around 90% of the parents claimed that they could tell whether their children were hungry or full, 40% hesitated to let their children decide how much to eat lest they would not be eating enough. Further, around 50% of the parents believed that they should decide how much their children should eat.

Table 22: I can clearly tell whether my child is hungry [我清楚知道孩子是否肚餓了]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)
Disagree	22 (11.3)	18 (8.5)	12 (6.2)	23 (8.4)
Agree	151 (77.8)	175 (82.2)	170 (87.6)	235 (86.1)
Strongly agree	21 (10.8)	19 (8.9)	12 (6.2)	15 (5.5)

Table 23: I can clearly tell whether my child is full [我清楚知道孩子是否吃飽了]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Disagree	14 (7.2)	7 (3.3)	13 (6.7)	19 (7.0)
Agree	161 (83.0)	191 (89.7)	167 (86.1)	239 (87.5)
Strongly agree	19 (9.8)	15 (7.0)	14 (7.2)	15 (5.5)

Table 24: I am worried my child may not have enough if I let him decide how much to eat [任他吃多少，我會擔心他吃不夠]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	3 (1.5)	3 (1.4)	3 (1.5)	6 (2.2)
Disagree	106 (54.6)	140 (65.7)	120 (61.9)	160 (58.6)
Agree	81 (41.8)	67 (31.5)	69 (35.6)	101 (37.0)
Strongly agree	4 (2.1)	3 (1.4)	2 (1.0)	6 (2.2)

Table 25: Parents should decide how much a child eats [孩子吃多少應該由父母決定]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	6 (3.1)	4 (1.9)	0 (0.0)	4 (1.5)
Disagree	82 (42.3)	92 (43.2)	71 (36.6)	135 (49.5)
Agree	99 (51.0)	115 (54.0)	118 (60.8)	131 (48.0)
Strongly agree	7 (3.6)	2 (0.9)	5 (2.6)	3 (1.1)

4.3.2. Parental practices in granting autonomy

Between 20% and 30% of the parents never let their children decide how much to eat (Table 26). Around 30% to 40% of the parents always limited the amount their children ate at meal times (Table 27). From 20% to 66% of parents always demanded their children to finish their meals (Table 28). There was a clear age trend where parents were less likely to grant children autonomy in deciding the amount of food to eat as they grew older. Parents of older children were more likely to demand their children to finish their meals (χ^2_{trend} (1) = 116.52, $p < 0.001$), limit the amount their children eat (χ^2_{trend} (1) = 6.013, $p = 0.014$), and they were less likely to let their children decide how much to eat (χ^2_{trend} (1) = 35.50, $p < 0.001$).

Table 26: At meal time, I let my child decide how much he eats [吃飯時我讓孩子自己決定吃多少]

	6-month (n = 174) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	96 (55.2)	115 (54.0)	116 (60.1)	176 (63.5)	170 (45.0)	77 (35.3)
Sometimes	43 (24.7)	45 (21.1)	31 (16.1)	41 (14.8)	89 (23.5)	58 (26.6)
Almost never	35 (20.1)	53 (24.9)	46 (23.8)	60 (21.7)	119 (31.5)	83 (38.1)

Table 27: I limit the amount my child eats at meal times [我限制孩子吃飯餸的份量]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	52 (29.9)	74 (34.7)	74 (38.3)	96 (34.7)	130 (34.4)	97 (44.5)
Sometimes	21 (12.1)	35 (16.4)	19 (9.8)	32 (11.6)	61 (16.1)	21 (9.6)
Almost never	101 (58.0)	104 (48.8)	100 (51.8)	149 (53.8)	187 (49.5)	100 (45.9)

Table 28: I demand my child to finish up his meal [我要孩子完全吃光我給他的飯餸]

	6-month (n = 174) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	45 (25.9)	40 (18.8)	76 (39.4)	97 (35.0)	176 (46.6)	143 (65.6)
Sometimes	38 (21.8)	49 (23.0)	31 (16.1)	64 (23.1)	85 (22.5)	35 (16.1)
Almost never	91 (52.3)	124 (58.2)	86 (44.6)	116 (41.9)	117 (31.0)	40 (18.3)

4.3.3. Use of strategies to make the child meet parent expectations

In order to make their children eat the amount decided by the parents, parents employed a variety of strategies, including distracting, urging and force feeding etc. For example, 30% to 40% of parents of 9-month-old and 18-month-old children considered letting their children watch TV or play with toys good ways to make children finish their meals. It is also noted that a fair proportion of parents did allow their children to watch TV/play with toys while eating (see Table 13 in section 4.1.2.3)

Table 29: Letting my child watch television is a good way to make him finish up his meal co-operatively [讓孩子看電視是令他合作地吃完一餐的好方法]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	33 (17.0)	28 (13.1)	20 (10.3)	17 (6.2)
Disagree	138 (71.1)	125 (59.7)	94 (48.5)	142 (52.0)
Agree	21 (10.8)	58 (27.2)	78 (40.2)	109 (39.9)
Strongly agree	2 (1.0)	2 (0.9)	2 (1.0)	5 (1.8)

Table 30: I can smoothly finish feeding my child his meal if I allow him to play with toys while eating [讓孩子一邊吃一邊玩玩具，我便能順利餵完一餐]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	21 (10.8)	16 (7.5)	8 (4.1)	10 (3.7)
Disagree	131 (67.5)	119 (55.9)	80 (41.2)	144 (52.7)
Agree	41 (21.1)	77 (36.1)	101 (52.1)	118 (43.2)
Strongly agree	1 (0.5)	1 (0.5)	5 (2.6)	1 (0.4)

When children slowed down in their eating, which might be a sign of fullness, parents would prompt their children to eat more quickly, or push food into their children's mouths. They would also repeatedly urge their children to eat more. There was an age trend for parents to hurry their children to eat (χ^2_{trend} (1) = 15.321, $p < .001$), and to urge them to eat more (χ^2_{trend} (1) = 4.904, $p < .027$), with parents of older children doing these more frequently than those of younger children. In order to make their children finish up their meals, parents would chase after their children to feed them (χ^2_{trend} (1) = 4.306, $p = .038$), or feed them in order to make them finish up the meal (χ^2 (1) = 58.72, $p < .001$), though this was less frequent among the older age groups. Furthermore, about 20% of parents would always give children food in between meals when they felt that their children were not eating enough during main meals.

Table 31: I hurry my child when he slows down in eating his meals [孩子吃飯慢下來時，我會催促他吃]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	29 (13.6)	42 (21.6)	59 (21.3)
Sometimes	62 (29.1)	50 (25.8)	114 (41.2)
Almost never	122 (57.3)	102 (52.6)	104 (37.5)

Table 32: I push food into my child's mouth when he slows down [孩子慢下來時，我會將食物弄進他的口]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	12 (5.6)	19 (9.8)	21 (7.6)
Sometimes	58 (27.2)	34 (17.5)	62 (22.4)
Almost never	143 (67.1)	141 (72.7)	194 (70.0)

Table 33: I repeatedly urge my child to eat more [我重重覆覆地勸孩子多吃一點]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	53 (24.9)	54 (27.8)	84 (30.3)
Sometimes	66 (31.0)	46 (23.7)	96 (34.7)
Almost never	94 (44.1)	94 (48.5)	97 (35.0)

Table 34: I need to chase after my child to feed him to make him finish his meal [我需要追孩子餵食才可令他吃完一餐飯]

	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	46 (16.6)	68 (18.0)	22 (10.1)
Sometimes	62 (22.4)	98 (25.9)	55 (25.2)
Almost never	169 (61.0)	212 (56.1)	141 (64.7)

Table 35: My child needs to be fed in order to finish his main meals [吃正餐時，我的孩子需要餵才吃得完]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	254 (67.2)	77 (35.3)
Sometimes	86 (22.8)	87 (39.9)
Almost never	38 (10.1)	54 (24.8)

Table 36: If my child does not eat enough during main meals, I supplement him with milk or other food afterwards [孩子正餐吃得少，我在餐後給他補奶或其他食物]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	60 (28.2)	51 (26.3)	66 (23.8)
Sometimes	68 (31.9)	39 (20.1)	87 (31.4)
Almost never	85 (39.9)	104 (53.6)	124 (44.8)

4.4. Parental perception of children's weight and parental feeding practices

4.4.1. Parental perception of children's weight and actual weight status

There was a tendency for parents to underestimate their children's weight status as evidenced by Table 37 which shows parent perception versus the actual weight status of children. Among children who were actually overweight, 52.5% were considered by their parents as within the normal range or underweight. Among children of normal weight, 23.4% were considered by their parents to be underweight. On the contrary, 25.0% of underweight children were considered by their parents to be within normal range and 8.9% of children with normal weight were considered by their parents to be overweight. On the whole, 23.9% (n = 321) parents underestimated their children's weight while 8.9% (n = 119) overestimated their children's weight.

Table 37: Parent perception versus the actual weight status of children (n = 1342)

Perception / Actual weight*	Overweight n (%)	Normal n (%)	Underweight n (%)
Underweight	0 (0%)	5 (25.0%)	15 (75.0%)
Normal	114 (8.9%)	868 (67.7%)	300 (23.4%)
Overweight	19 (47.5%)	20 (50.0%)	1 (2.5%)

*Children's BMI compared to WHO child growth standard (2006)[69] and classified as follows:

Overweight = z score > 2, Underweight = z score < -2, Normal = $-2 \leq$ z score ≤ 2

4.4.2. Parental worry about children becoming overweight/underweight and actual/perceived weight status

Parents tended to worry about their children becoming underweight. Overall, 34.6% (n = 463) were worried about their children becoming underweight and 18.5% (n = 248) were worried about their children becoming overweight. Among children who were overweight, only 50.0% of their parents were worried that they would become overweight, whereas 68.4% of the parents of underweight children were worried that their children **would become underweight**. Among children who were of normal weight or underweight (n = 1300), 17.5% (n = 228) of the parents were worried that their children would become overweight, but 34.1% (n = 450) of the parents of children of normal weight or overweight (n = 1321) were worried that their children **would become underweight**.

Table 38: Parental worry about children becoming over-weight and children's actual weight (n = 1340)

Actual weight	Not worried at all / Not worried n (%)	Worried / Very worried n (%)
Underweight	17 (89.5)	2 (10.5)
Normal	1055 (82.4)	226 (17.6)
Overweight	20 (50.0)	20 (50.0)

Table 39: Parental worry about under-weight and children's actual weight (n = 1340)

Actual weight	Not worried at all / Not worried n (%)	Worried / Very worried n (%)
Underweight	6 (31.6)	13 (68.4)
Normal	838 (65.4)	443 (34.6)
Overweight	33 (82.5)	7 (17.5)

Table 40: Parental worry about over-weight and parental perception of children's weight (n = 1468)

Perceived weight	Not worried at all / Not worried n (%)	Worried / Very worried n (%)
Underweight	328 (94.5)	19 (5.5)
Normal	813 (82.8)	169 (17.2)
Overweight	56 (40.3)	83 (59.7)

Table 41: Parental worry about under-weight and parental perception of children's weight (n = 1468)

Perceived weight	Not worried at all / Not worried n (%)	Worried / Very worried n (%)
Underweight	95 (27.4)	252 (72.6)
Normal	754 (76.8)	228 (23.2)
Overweight	118 (84.9)	21 (15.1)

Logistic regression was used to examine the association between parental worry about children's weight and children's actual weight status or parental perception of children's weight. The dependent variables were parental worry about children becoming overweight or underweight and the independent variables were actual weight status and parent perception of children's weight. For worry about becoming overweight, the regression was significant, χ^2 (2) = 157.813, p < .001. Parental worry was significantly associated with parental perception of children's weight (*OR*= 5.375, 95%CI: 3.942, 7.327, *p* < .001), but not actual weight (*OR*= 1.847, 95%CI: 0.940, 3.628, *p* = 0.075). For worry about becoming underweight, the regression was significant, χ^2 (2) = 246.545, p < .001. Parental worry was significantly associated with parent perception of child weight (*OR*= 0.165, 95%CI: 0.121, 0.213, *p* < .001) but not actual weight (*OR*= 0.783, 95%CI: 0.393, 1.560, *p* = 0.487).

4.4.3. Parental worry about children over-eating/under-eating and children's actual/perceived weight status

Parents were more worried about their children not eating enough rather than eating too much, even if their children were of normal weight or overweight. Overall, 9.7% (n = 130) were worried about over-eating and 30.7% (n = 412) were worried about under-eating. Among overweight children, only 27.5% of their parents were worried about overeating and 17.5% were worried about under-eating. Among underweight children, 63.2% of their parents were worried about under-eating and none was worried about over-eating.

Table 42: Parental worry about over-eating and children's actual weight (n = 1340)

Actual weight	Not worried at all / Not worried	Worried / Very worried
	n (%)	n (%)
Underweight	19 (100.0)	0 (0)
Normal	1162 (90.7)	119 (9.3)
Overweight	29 (72.5)	11 (27.5)

Table 43: Parental worry about under-eating and children's actual weight (n = 1340)

Actual weight	Not worried at all / Not worried	Worried / Very worried
	n (%)	n (%)
Underweight	7 (36.8)	12 (63.2)
Normal	888 (69.3)	393 (30.7)
Overweight	33 (82.5)	7 (17.5)

Table 44: Parental worry about over-eating and parental perception of children's weight (n = 1468)

Perceived weight	Not worried at all / Not worried	Worried / Very worried
	n (%)	n (%)
Underweight	336 (96.8)	11 (3.2)
Normal	887 (90.3)	95 (9.7)
Overweight	101 (72.7)	38 (27.3)

Table 45: Parental worry about under-eating and parental perception of children's weight (n = 1468)

Perceived weight	Not worried at all / Not worried	Worried / Very worried
	n (%)	n (%)
Underweight	134 (38.6)	213 (61.4)
Normal	760 (77.4)	222 (22.6)
Overweight	119 (85.6)	20 (14.4)

Logistic regression was used to examine the association between parental worry about children's over-/under-eating and children's actual weight status or parental perception of children's weight. The dependent variables were parental worry about children over-eating or under-eating while the independent variables were children's actual weight status and parental perception of children's weight. For worry about over-eating, the regression was significant, χ^2 (2) = 59.096, p < .001. Parental perception of children's weight (*OR*= 3.285, 95%CI: 2.305, 4.682, *p* < .001) and children's actual weight status, (*OR*= 2.090, 95%CI: 1.003, 4.357, *p* = .049) were

both associated with worry about over-eating. For worry about under-eating, the regression was significant, χ^2 (2) = 153.268, p < .001. Only the association between parental perception of children's weight (*OR*= 0.251, 95%CI: 0.197, 0.319, *p* < .001) and worry about under-eating was significant, but not children's actual weight (*OR*= 0.739, 95%CI: 0.377, 1.448, *p* = .378).

4.4.4. Parental perception of children's weight, worry about children's weight and over-/under-eating and feeding beliefs and practices

To explore the association between parental feeding beliefs and practices (as in sections 4.3.1, 4.3.2 and 4.3.3) (dependent variables) and parental worry about children being over or underweight, parental worry about child over-/under- eating, parental perception of children's weight, and children's actual weight (independent variables), a series of multiple regression analyses were conducted. Parental worry about under-eating was most frequently associated with parental beliefs about self-regulation, practices in granting children the autonomy to exercise self-regulation in eating and parental controlling feeding practices, while actual weight had little association with these. The details are shown in Table 46.

Table 46: Association between parental worry about over-/under-eating, parental worry about over-/under-weight, parental perception of children's weight, children's actual weight and parental feeding beliefs and practices

Dependent variables	Independent variables						F value and significance
	Worry about over-eating	Worry about under-eating	Worry about over-weight	Worry about under-weight	Parental weight perception	Children's actual weight	
Worrying that child might not eat enough if allowed to decide how much he eats	-0.04	0.39***	-0.01	0.08*	0.00	-0.02	*F* (6, 786) = 30.50, *p* < .001
Letting child play with toys is a good way to make him finish his meals	0.12**	0.02	0.00	0.10*	-0.07	0.02	*F* (6, 786) = 4.47, *p* < 0.001
Letting child watch television is a good way to make him finish his meals	0.08*	0.04	0.04	-0.04	-0.08	0.06	*F* (6, 786) = 1.98, *p* = 0.066
My child eats slowly	-0.12***	0.27***	-0.05	0.08**	-0.06*	0.01	*F* (6, 1330) = 37.91, *p* <.001
Limiting the amount my child eats at meal times	0.09**	-0.04	0.03	-0.00	0.02	0.01	*F* (6, 1311) = 3.91, *p* = 0.001
Letting child decide how much he eats	-0.00	-0.03	-0.02	0.03	0.09**	0.01	*F* (6, 1311) = 1.88, *p* = 0.081
Pushing food into child's mouth when he slows down	-0.07	0.16***	0.02	-0.04	0.01	-0.02	*F* (6, 602) = 2.42, *p* = 0.026
Repeatedly urging child to eat more	-0.07	0.24***	0.04	0.06	-0.13**	0.00	*F* (6, 602) = 13.99, *p* < 0.001
Supplementing with food if child does not eat enough at main meals	-0.06	0.21***	0.02	0.03	-0.01	0.01	*F* (6, 602) = 5.64, *p* < 0.001
Urging child to eat when he slows down	-0.03	0.10*	-0.02	0.07	-0.03	0.05	*F* (6, 602) = 2.48, *p* = 0.022
Letting child play with toys while eating	0.06	0.08*	-0.03	0.15***	-0.00	-0.07*	*F* (6, 1147) = 6.58, *p* < .001
Having to chase after the child to feed to finish meals	-0.07*	0.15***	-0.02	0.09*	-0.00	0.03	*F* (6, 792) = 7.53, *p* < 0.001

* P ≤ .05

** P ≤ .01

*** P ≤ .001

4.5. Avoidant Eating Behaviour

4.5.1. Trying new food

There was a trend of increasing difficulties with age in making children try new food (χ^2_{trend} (1) = 102.601, p < .001). Whereas 0.5% of parents of 9-month-old children had great difficulties in making their children try new food, this percentage increased to 5.6% and 9.6% among parents of 24 and 48-month old children. The increase in difficulty with new food was consistent with the literature where neophobia[40] was found to peak between 2 and 6 years.

For specific food groups, there was a trend of increasing difficulties with age in making children eat vegetables (χ^2_{trend} (1) = 50.98, p < .001), and fish/meat (χ^2_{trend} (1) = 17.84, p < .001). For vegetables, 0.5% of parents of 9-month old children reported having great difficulties whereas 5% of parents of 48-month-old children reported great difficulties. The corresponding percentages for fish/meat were 1.9% and 2.3%. For drinking water, the trend was in the opposite direction (χ^2_{trend} (1) = 34.94, p < .001) and the figures for 9-month old children and 48-month old children were 8.9% and 2.8% respectively. There was no age trend for difficulties in getting children to eat fruit, with between 0.7% and 3.2% of parents reporting great difficulties across the age groups.

Table 47: It is difficult to make my child try new food [要令孩子嘗試吃新食物是困難的]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Great	1 (0.5)	4 (2.1)	3 (1.1)	21 (5.6)	21 (9.6)
Some	39 (18.3)	28 (14.4)	55 (19.9)	129 (34.1)	95 (43.6)
No	173 (81.2)	162 (83.5)	219 (79.1)	228 (60.3)	102 (46.8)

Table 48: It is difficult to make my child eat vegetables [要令孩子吃蔬菜是困難的]

	9-month (n = 209) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Great	1 (0.5)	1 (0.5)	8 (2.9)	23 (6.1)	11 (5.0)
Some	11 (5.3)	9 (4.6)	25 (9.0)	71 (18.8)	51 (23.4)
No	197 (94.3)	184 (94.8)	244 (88.1)	284 (75.1)	156 (71.6)

Table 49: It is difficult to make my child eat fruits [要令孩子吃水果是困難的]

	9-month (n = 210) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Great	4 (1.9)	4 (2.1)	2 (0.7)	12 (3.2)	5 (2.3)
Some	18 (8.6)	20 (10.3)	29 (10.5)	56 (14.8)	26 (11.9)
No	188 (89.5)	170 (87.6)	246 (88.8)	310 (82.0)	187 (85.8)

Table 50: It is difficult to make my child eat meat or fish [要令孩子吃魚/肉類是困難的]

	9-month (n = 208) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Great	4 (1.9)	2 (1.0)	6 (2.2)	7 (1.9)	5 (2.3)
Some	18 (8.7)	10 (5.2)	42 (15.2)	76 (20.1)	47 (21.6)
No	186 (89.4)	182 (93.8)	229 (82.7)	295 (78.0)	166 (76.1)

Table 51: It is difficult to make my child drink water [要令孩子飲清水是困難的]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Great	19 (8.9)	19 (9.8)	16 (5.8)	14 (3.7)	6 (2.8)
Some	83 (39.0)	56 (28.9)	64 (23.1)	60 (15.9)	40 (18.3)
No	111 (52.1)	119 (61.3)	197 (71.1)	304 (80.4)	172 (78.9)

4.5.2 Picky eating

About 20% of parents of 24-month-old and 48-month-old children reported that their children were always picky eaters. There was no significant association between picky eating and weight status, $\chi^2(4) = 2.66$, $p = 0.615$.

Multiple regression was used to examine the association between parental feeding beliefs/practices and picky eating. The independent variables were letting children play with toys while eating, chasing children to feed, limiting the amount children eat, letting children decide how much they eat, and watching television while eating. The dependent variable was picky eating. The regression was significant, $F(5, 590) = 12.46$, $p < .001$. Picky eating was positively associated with chasing children to feed ($\beta = 0.25$, $t = 6.23$, $p < .001$) and negatively with limiting the amount children eat ($\beta = -0.15$, $t = -3.72$, $p < .001$).

Table 52: My child is a picky eater [我的孩子揀飲擇食]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	81 (21.4)	46 (21.1)
Sometimes	139 (36.8)	92 (42.2)
Almost never	158 (41.8)	80 (36.7)

4.5.3 Slowness in eating

Another manifestation of food avoidance is slowness in eating. There was a significant age trend, $\chi^2_{trend}(1) = 65.58$, $p < .001$, with a higher percentage of children in the 24 and 48 months group described by their parents as being slow in eating. However, there was no significant association between slowness in eating and weight status, $\chi^2(4) = 6.865$, $p = 0.143$.

Multiple regression was used to examine the association between parental feeding beliefs/practices and slowness in eating. The regression was significant, $F(12, 260) = 12.29$, $p < .001$. Slowness in eating was positively associated with a number of feeding practices, including letting children play with toys while eating ($\beta = 0.16$, $t = 2.68$, $p = .008$), chasing children to feed ($\beta = 0.14$, $t = 2.66$, $p = .008$),

pushing food into children's mouths (β = 0.21, t = 4.01, p < .001), repeatedly urging children to eat more (β = 0.31, t = 5.54, p < .001), and worrying that children might not eat enough if they were allowed to decide how much they eat (β = 0.18, t = 3.41, p = .001).

Table 53: My child eats slowly [我的孩子吃飯慢吞吞]

	6-month (n = 194)	9-month (n = 213)	12-month (n = 194)	18-month (n = 277)	24-month (n = 377)	48-month (n = 218)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Always	27 (13.9)	10 (4.7)	15 (7.7)	42 (15.2)	79 (21.0)	74 (33.9)
Sometimes	66 (34.0)	71 (33.3)	58 (29.9)	96 (34.7)	121 (32.1)	68 (31.2)
Almost never	101 (52.1)	132 (62.0)	121 (62.4)	139 (50.2)	177 (46.9)	76 (34.9)

4.6. Strategies to increase acceptance of food

4.6.1. Desirable strategies

4.6.1.1. Exposure to new/non-preferred food

One of the evidence-based strategies is repeated exposure of children to the new/refused food. Over 80% of parents in all age groups claimed that although their children did not like certain foods, they would still let them try again. In cases where children did not accept the new food in the first place, about 50% to 68% of parents would give up after three trials or fewer. Only 15% to 24% of parents would try more than 10 times. Over 90% of the parents agreed/strongly agreed that they would let children try food that they themselves did not like.

Table 54: Although my child does not like certain food, I would still let him try [雖然有些食物孩子不喜歡吃，我仍會給孩子嘗試]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)
Disagree	11 (5.7)	18 (8.5)	21 (10.8)	30 (11.0)
Agree	169 (87.1)	181 (85.0)	170 (87.6)	228 (83.5)
Strongly agree	14 (7.2)	13 (6.1)	3 (1.5)	15 (5.5)

Table 55: Parents who made repeated attempts to introduce new food

	6-month (n = 92*) n (%)	9-month (n = 123*) n (%)	12-month (n = 116*) n (%)	18-month (n = 188*) n (%)
1-3 attempts before giving up	53 (57.6%)	83 (67.5%)	63 (54.4%)	97 (51.6%)
4 - 9 attempts before giving up	18 (19.6%)	21 (17.1%)	25 (21.6%)	48 (25.5%)
≥10 attempts before giving up	21 (22.8%)	19 (15.4%)	28 (24.1%)	43 (22.9%)

*Excluding children who never refused new food

Table 56: Although I do not like certain food, I would still let my child try [儘管有些食物我自己不喜歡吃，我仍會給孩子嘗試]

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 273) n (%)
Strongly disagree	0 (0.0)	1 (0.5)	0 (0.0)	2 (0.7)
Disagree	5 (2.6)	10 (4.7)	13 (6.7)	14 (5.1)
Agree	162 (82.5)	175 (82.2)	175 (90.2)	235 (86.1)
Strongly agree	27 (13.9)	27 (12.7)	6 (3.1)	22 (8.1)

4.6.1.2. Parental modelling

Another effective strategy is modelling where parents eat the new food in front of the child. However, between 40% and 50% of the parents reported that they had almost never done so. While close to 98% of the parents reported that they always or sometimes ate vegetables or fruit in front of their children, between 50% and 60% of parents always or sometimes ate junk food in front of their children. This practice may encourage unhealthy eating habits.

Table 57: When introducing new food to my child, I would demonstrate eating in front of him [介紹新食物給孩子吃時，我會在他面前嘗嘗示範]

	9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)
Always	61 (28.6)	51 (26.4)	103 (37.2)
Sometimes	51 (23.9)	38 (19.7)	60 (21.7)
Almost never	101 (47.4)	104 (53.9)	114 (41.2)

Table 58: I eat vegetables and fruits in front of my child [我在孩子面前吃蔬菜和水果]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	331 (87.6)	197 (90.4)
Sometimes	41 (10.8)	18 (8.3)
Almost never	6 (1.6)	3 (1.4)

Table 59: I eat junk food in front of my child [我在孩子面前吃零食]

	9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	28 (13.1)	40 (20.7)	40 (14.4)	42 (11.1)	29 (13.3)
Sometimes	108 (50.7)	72 (37.3)	105 (37.9)	178 (47.1)	110 (50.5)
Almost never	77 (36.2)	81 (42.0)	132 (47.7)	158 (41.8)	79 (36.2)

4.6.2. Undesirable feeding strategies

A proportion of parents, however, dealt with picky eating in a number of undesirable ways. Using junk food to encourage eating healthy food will result in increased preference for the junk food and decreased preference for the healthy food, but about 30% of parents reported that they always/sometimes used this strategy. Providing other food to replace the refused food was always/sometimes practiced by

19% to 37% of parents. This can be considered an indulgent practice. This also deprives the children of the opportunity to be exposed to the undesired food which is known to be effective in facilitating children to accept the food. Instead, parents should provide a variety of food in each of the food groups, including food that children like and dislike, and foster the acceptance of the disliked food through appropriate strategies.

Table 60: I use junk food to encourage my child to eat healthy food [我用零食鼓勵他吃有益健康的食物]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	39 (10.3)	17 (7.8)
Sometimes	80 (21.2)	61 (28.0)
Almost never	259 (68.5)	140 (64.2)

Table 61: I provide my child with other food if he dislikes the food on the table [當孩子不喜歡檯上的食物時，我給他別的食物]

	24-month (n = 378) n (%)	48-month (n = 218) n (%)
Always	43 (11.4)	10 (4.6)
Sometimes	98 (25.9)	32 (14.7)
Almost never	237 (62.7)	176 (80.7)

Furthermore, between 54% and 78% parents always/sometimes used food as a means to manage children's behaviour, including making children behave, rewarding good behaviour, or managing emotions or behaviour problems. If parents are using unhealthy food to manage children's behaviour, this might reinforce the desire for such unhealthy food.

Table 62: Using child's favourite food to manage child behaviour

		24-month (n = 378) n (%)	48-month (n = 218) n (%)
Making child behave [我用孩子喜歡的食物來令他行為良好]	Always	66 (17.5)	35 (16.1)
	Sometimes	139 (36.8)	102 (46.8)
Rewarding good behaviour [我用孩子喜歡的食物來獎賞他的好行為]	Always	81 (21.4)	53 (24.3)
	Sometimes	147 (38.9)	117 (53.7)
Managing child emotion or behaviour problem [當孩子扭計或唔開心，我會給他食物去安慰他]	Always	73 (19.3)	28 (12.8)
	Sometimes	182 (48.1)	105 (48.2)

4.7. Facilitating self-feeding

During this transition period (6 to 24 months), children move from being fed by parents, through parallel feeding, to independent self-feeding. Parents' responsibility includes the provision of learning opportunities, suitable utensils, as well as encouragement.

4.7.1. Children's eating skills

Over 70% of 9-month-old children were able to grab food to eat. However, it was remarkable that 11% of the parents did not allow their children to grab food.

Although 84% of 18-month-old children were able to use a spoon, only 21% were able to use it tidily. Two-thirds of parents of 9-month-old children, 50% of parents of 12-month-old children, and 4% of parents of 18-month-old children did not allow their children to use a spoon.

For the use of cup, 68% of parents of 6-month-old children did not allow their children to use a cup or they had not let their children try. This percentage decreased to 43% for parents of 9-month-old children, 27% for parents of 12-month-old children and 9% for parents of 18-month-old children. Among 18-month-old children, only 43.5% could independently use a training cup or a regular cup.

Table 63: Grabbing food to eat

	9-month (n = 212) n (%)	12-month (n = 194) n (%)	18-month (n = 275) n (%)
Not allowed to grab food	23 (10.8)	4 (2.1)	1 (0.4)
Unable to grab food	26 (12.2)	6 (3.1)	2 (0.7)
Able to grab food	163 (76.5)	184 (94.8)	272 (98.9)

Table 64: Using spoon

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 275) n (%)
Not allowed to use spoon	142 (66.7)	95 (49.0)	11 (4.0)
Unable to use spoon	59 (27.7)	63 (32.5)	33 (12.0)
Able to use spoon, but with food dripping	9 (4.2)	33 (17.0)	173 (62.9)
Able to use spoon tidily	1 (0.5)	3 (1.5)	58 (21.1)

Table 65: Drinking with cup

	6-month (n = 194) n (%)	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 275) n (%)
Not allowed to use cup / have not tried yet	132 (68.0)	91 (42.7)	52 (26.8)	24 (8.7)
Unable to use cup	19 (9.8)	30 (14.1)	26 (13.4)	16 (5.8)
Able to use training cup with assistance	25 (12.9)	39 (18.3)	30 (15.5)	19 (6.9)
Able to use regular cup with assistance	16 (9.8)	17 (8.0)	28 (14.4)	69 (25.1)
Able to use training cup	0 (0.0)	32 (15.0)	45 (23.2)	72 (26.2)
Able to use regular cup	0 (0.0)	3 (1.4)	13 (6.7)	75 (27.3)

4.7.2. Parent behaviour

Among the 9-month-old and 18-month-old children, around 23% and 13% of parents did not allow their children to grab food to eat during meals, while around 40% of parents of 9-month-old and 12-month-old children were over-concerned about cleanliness during meal time, by frequently cleaning children's faces and

mouths. However, there was no statistically significant association between these parental behaviours and child feeding skills.

Table 66: I hold my child's hand to prevent him from grabbing food [我捉住孩子的手，以避免他抓食物]

	9-month (n = 213) n (%)	12-month (n = 194) n (%)	18-month (n = 277) n (%)
Always	48 (22.5)	38 (19.6)	37 (13.4)
Sometimes	54 (25.4)	43 (22.2)	59 (21.3)
Almost never	111 (52.1)	113 (58.2)	181 (65.3)

Table 67: I clean my child's face and mouth frequently when he is eating [在進餐期間，我頻密地清潔孩子的臉和嘴]

	9-month (n = 213) n (%)	12-month (n = 193) n (%)	18-month (n = 277) n (%)
Always	85 (39.9)	78 (40.4)	78 (28.2)
Sometimes	64 (30.0)	47 (24.4)	81 (29.2)
Almost never	64 (30.0)	68 (35.2)	118 (42.6)

Chapter 4: Discussion

In the majority of families, mother was the main person making decisions about food purchase and cooking method, cooking and feeding, followed by grandparent and domestic helper. As 60% of the mothers were working full-time, grandparents and domestic helpers were also involved in caregiving. Whereas more grandparents were involved in decision making matters such as food purchase and cooking method, more domestic helpers were involved in hands-on cooking and feeding. Health education activities should therefore not only target parents, but also grandparents and domestic helpers.

1. Conducive eating environment

To promote healthy eating habits and prevent meal time behaviour problems, a conducive eating environment including fixed meal schedule, eating with family members, suitable chair and eating utensils, minimization of distraction, and pleasant interactions should be provided. The majority of our parents set a fixed meal schedule, provided a suitable chair for their children, talked and encouraged their children during meal times. However, a fair proportion of parents allowed distractions such as toys (20% to 30% of parents with children between 9 months and 24 months) and television (30% or above for parents with children 12 months old or above) during meal time. Studies have shown that distractions during meal time, such as television viewing, were associated with over-eating[64]. Dining with family members provides opportunities for socialization and role modelling, but only half of the 18 to 24-month-olds were dining with their family members. Parents should be made aware of the importance of family meal times and the implications of meal time distractions such as television and toys.

2. Providing a variety of food

Preparing children's meals out of the family food basket would make it easier to provide a diet of variety for young children, but this was not a common practice among parents. Only a quarter of parents of 9-month-old children did so, increasing to about 40% among parents of 18-month-old children.

Nonetheless, most parents reported that they provided a variety of foods (e.g. meat, vegetables and fruit) to their children, and they adopted healthy cooking methods, such as using little salt and oil. This survey, however, did not include detailed information on the actual type and amount of food consumed, which can be found in the concurrent dietary survey.

Parents of older children were more likely to let their children eat junk food and processed food, probably because of the increasing influence of the external environment. Over 80% of parents stored junk food at home but hid them away from the children. This practice might actually make the junk food more attractive to them.

3. Self-regulation

While it is the responsibility of the parents to provide a variety of nutritious foods for their children, children should be allowed to decide what and how much to eat. In our study, whereas most of the parents claimed that they could tell whether

their children were hungry or full, about half of the parents believed that they should decide how much their children should eat. In practice, a substantial proportion of parents never granted their children autonomy, either by limiting the portion size or demanding them to finish up their meals. Children's experience of eating according to external cues at this early age would put them at greater risk of becoming overweight or obese.

4. Parental perception about child eating and weight

Similar to previous findings on parental weight perception[26,27], parents in our survey tended to under-estimate their children's weight. They also tended to worry about their children becoming underweight and under-eating. Their worries were more strongly associated with their perception of children's weight (which tended to be an under-estimation) rather than their actual weight.

Consistent with results of a recent study[28], parental worries about under-weight and under-eating were associated with parental attitudes towards children's self-regulation (e.g. worrying that the child might not eat enough if allowed to make own decision, letting the child decide how much to eat), and parental controlling feeding strategies (e.g. repeatedly urging the child to eat more; pushing food into the child's mouths; chasing after the child to feed; allowing the child to play with toys while eating). These practices may either lead to over-feeding or meal time behaviour problems, depending on the child's temperament. Those who comply are likely to be over-fed while the more determined ones may make meal time a struggle.

5. Children's weight status

There was a higher percentage of overweight/obese children in the 24- (4.7%) and 48-month-old (3.9%) group than expected, assuming that BMI is normally distributed (2.28% of the population lie beyond 2 standard deviations). The prevalence of overweight /obesity among 4-year-old children was comparable to another sample of 1033 4-year-olds in an unpublished 2007 survey carried out in MCHCs, where the prevalence was 4.4%. This finding may be of concern as it is known that a significant proportion of child obesity will track into adulthood.

6. Food avoidant behaviour

According to Figure 1 in Chapter 1, a negative eating atmosphere and lack of enjoyment mediate the link between parental controlling strategies and avoidant eating behaviour[44]. In our study, slowness in eating was found to be associated with parental practices such as chasing the child to feed, pushing food into the child's mouth, and repeatedly telling the child to eat more, etc. Being a cross-sectional study, it is not possible to draw conclusions about cause-effect relationships. While these parental practices could lead to slowness in eating, it is also plausible that parents respond to slowness in eating by these practices.

About a quarter of parents of 24-month-olds and 48-month-olds reported their children as being picky eaters. Picky eating was positively associated with chasing the child to feed and negatively with limiting the child's food portions. Again, the causal-relationship between parental controlling feeding practices and picky eating could be bi-directional.

Picky eating or slowness in eating was not associated with under-weight status in our study. This finding is compatible with previous findings[39,41,42,43].

Consistent with literature that neophobia peaks between 2 and 6 years[40], there was a higher percentage of children in the 24 and 48 months groups who were described by their parents as having difficulty in trying new food. Inappropriate management such as pressure to eat might aggravate the problem. Evidenced-based strategies to increase food acceptance include modelling and repeated exposure. Though most parents claimed to repeatedly introduce new food to children, only 20% made more than 10 attempts. About 50% of parents reported that they would model eating new foods in front of their children. However, about half of the parents also ate junk food in front of them. As modelling is one of the effective strategies to increase food acceptance, parents should wisely make use of modelling to encourage desirable eating habits. It is known that using junk food to encourage eating of non-preferred food or manage behaviour will increase preference for the junk food. In the present survey, this was a common practice among a fair proportion of parents of 24-month-olds and 48-month-olds, and should be discouraged.

7. Learning to self-feed

During the period of transitional feeding, children are expected to gradually take over the responsibility of feeding themselves while the parents should facilitate the development of these skills. The majority of children should be able to handle finger food by 9 months, drink from a regular cup independently and self-feed with spoon well by 19 to 24 months. In our study, though the majority of 9-month-old children were able to grab food to eat, only a quarter of 18-month-olds were able to use a regular cup, and only a fifth could use spoon tidily. Parents' excessive concern about cleanliness during mealtime might have deprived their children of the opportunity to experiment with self-feeding.

8. Strengths and limitations

This is the first large scale survey of feeding practices of parents of preschool children in Hong Kong.

8.1 The design

This was a cross-sectional study. Age trends could be due to differences between groups of parents, rather than actual age differences. Furthermore, inferences on causal relationships should only be regarded as hypotheses to be further investigated.

8.2 The sample

The sampling frame for the present study was the registry of MCHC users and children who have not registered with the MCHCs were not represented in the study. The overall participation rate was about 52%, and the participation rate of 48-month-old group was 38%. The low participation rate was largely due to non-contactable parents. However, the response rate among the contactable parents was as high as 78%. There was no statistically significant difference between the participants and non-participants, except there were more boys among

the participants (50.9%) than non-participants (45%).

Compared with the 2006 by-census, non-local born parents, parents with low educational attainment and low income, as well as older fathers were under-represented in the present sample. Local-born parents and parents with tertiary education were over-represented. There were more parents who were not married in our sample. Income level of our sample tended to crowd towards the middle range (i.e., between HK$20,000 and HK$39,999). Furthermore, the sample included only Cantonese-speaking Chinese parents. Non-Cantonese speaking and non-Chinese parents were not represented.

8.3 The instrument

The parent feeding practices in this study was based on parent report rather than actual observation of child feeding or parent-child interaction.

Though the content validity of both sets of questionnaires was ensured through literature review and focus group discussion with parents, criterion validity and measurement properties were only investigated for the 24 and 48 month questionnaire in the pilot studies, using a summary score to represent an underlying construct. As the focus of the main study was to describe parents' attitudes and behaviours, the summary score was not used.

8.4 Data analysis

This was originally designed as a descriptive study to provide an overall picture of the beliefs, attitudes and feeding practices of parents of preschool children. No sub-group analysis (e.g., differences between socioeconomic groups) was therefore conducted. Moreover, analyses on associations between variables could only be considered as exploratory, though the results were consistent with the literature (e.g. association between parental weight perception and feeding practices[28].

Chapter 5: Conclusions

Feeding of young children does not only serve a biological function to meet the nutrient requirements of children for daily activities and growth, but also a social function that involves complex parent-child interaction in the context of the home environment. In the present study, parent over-concern about their children being under-weight and not eating enough was associated with various controlling feeding practices (e.g. pressure to eat) which might result in a negative eating atmosphere and avoidant eating behaviours, or over-eating and over-weight. In turn, these behaviours might drive parents to use more controlling strategies, thus creating a vicious spiral. To create a pleasant eating environment for children, parents are encouraged to follow these recommendations:

1 Scheduling meals
   - 1.1 While young infants should be fed on demand to meet their biological needs, they should gradually be socialized to follow family meal routines.
   - 1.2 By about 12 months, children should be provided with three main meals and two or three snacks per day.

2 Providing a conducive environment
   - 2.1 Children should eat with the family where parents could interact with them and model desirable eating behaviours.
   - 2.2 Children should be provided with a regular and comfortable seat at the family dining table.
   - 2.3 Parents should try to minimise distraction during meal times, e.g. removing toys and tablet computers and turning off the television.

3 Facilitating the intake of an appropriate amount of a varied diet: a division of responsibility between parent and child
   - 3.1 The prime responsibility of parents is to provide a variety of nutritious foods in different combinations of colours, tastes and textures.
   - 3.2 The child is responsible for deciding whether to eat a particular food and how much.
   - 3.3 When feeding a child, parents should be sensitive to the child's hunger and satiety cues, feed patiently and encourage the child to eat without pressure.
   - 3.4 To increase food acceptance, parents should use effective strategies, such as repeated exposure and modelling.

4 Fostering independence
   - 4.1 During transitional feeding, children should gradually move from being totally fed by parents (before 6 months), through parallel feeding, to eating independently by 24 months.
   - 4.2 Parents should facilitate the development of self-feeding skills in children, through encouragement and provision of suitable feeding utensils.

5 Maintaining standards of behaviour
   - 5.1 Parents should set rules and limits to facilitate the development of appropriate meal time behaviours.
   - 5.2 Parents should use appropriate strategies and take prompt actions to prevent behaviour problems.

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Appendix: Questionnaires

問卷： 共用部分 - 孩子及家長資料

A.

1. 你是孩子的 ☐1 父 ☐2 母

2. 孩子性別： ☐1 男 ☐2 女

3. 孩子的出生日期：_____年 _____月 _____日

4. 他/她這是你第_____個孩子，包括他在內，你有_____孩子

5. 孩子父親的年齡：_____

☐1 17 或以下 ☐2 18-24 ☐3 25-29 ☐4 30-34 ☐5 35-39 ☐6 40-44 ☐7 45 或以上

父親的教育程度：

☐1 小學或以下 ☐2 小學畢業 ☐3 中一至中三 ☐4 中四至中五
☐5 中六至中七 ☐6 專上教育(文憑/證書課程/副學士課程) ☐7 專上教育 (學位課程)

父親的職業是：☐1 全職 ☐2 兼職 ☐3 退休人仕 ☐4 待業

父親在香港出生嗎？ ☐1 是 ☐2 不是 (請答下一題)

父親在香港居住的年期爲： ☐1 少於 2 年 ☐2 2 至 7 年 ☐3 7 年以上

孩子母親的年齡：_____

☐1 17 或以下 ☐2 18-24 ☐3 25-29 ☐4 30-34 ☐5 35-39 ☐6 40-44 ☐7 45 或以上

母親的教育程度：

☐1 小學或以下 ☐2 小學畢業 ☐3 中一至中三 ☐4 中四至中五
☐5 中六至中七 ☐6 專上教育(文憑/證書課程/副學士課程) ☐7 專上教育 (學位課程)

母親的職業是： ☐1 全職 ☐2 兼職 ☐3 家庭主婦 ☐4 退休人仕 ☐5 待業

母親在香港出生嗎？ ☐1 是 ☐2 不是 (請答下一題)

母親在香港居住的年期爲： ☐1 少於 2 年 ☐2 2 至 7 年 ☐3 7 年以上

請問你家庭上月的總入息是？(包括所有工作獲得的收入)

☐1 少過 $5000 ☐2 $5000 - $9999 ☐3 $10000 - $19999 ☐4 $20000 - $29999
☐5 $30000 - $39999 ☐6 多過或者等於 $40000

6. 你與孩子父/母親的婚姻狀況：☐1 已婚 ☐2 同居 ☐3 分居/離婚 ☐4 died 其他_____

7. a. 平均一星期，孩子跟誰同住至少五天？

☐1 父 ☐2 母 ☐3 (外)祖父母 ☐4 兄弟姐妹
☐5 家傭 ☐6 其他 _____

b. 平均一個星期，你與孩子同住 _____天

B.

1a. 在 日間 時間，孩子主要是由誰負責照顧？ (只選一個)

☐1 孩子的父親 ☐3 家傭 ☐5 其他親戚 ☐7 其他：_____
☐2 孩子的母親 ☐4 (外)祖父母 ☐6 褓姆

1b.

在 晚上 時間，孩子主要是由誰負責照顧？ (只選一個)

☐1 孩子的父親 ☐3 家傭 ☐5 其他親戚 ☐7 其他：_____
☐2 孩子的母親 ☐4 (外)祖父母 ☐6 褓姆

2a 平均一個星期來說，誰最經常負責照顧孩子飲食 (餵奶和固體食物)？ (只選一個)

☐1 孩子的父親 ☐3 家傭 ☐5 其他親戚 ☐7 其他：_____
☐2 孩子的母親 ☐4 (外)祖父母 ☐6 褓姆

2b 平均一個星期來說，有多少天是由你負責照顧小孩飲食？ _____天

問卷：有關嬰幼兒餵養之部分 - 嬰兒組(6 個月大)

C. 孩子現在是否仍以母乳餵哺

☐$_1$ 是

有沒有飲奶粉： ☐$_1$ 有 ☐$_2$ 無

☐$_2$ 不是

☐$_1$ 在孩子_____月大時停止餵哺母乳

☐$_2$ 從來沒有

D. 我認爲我孩子的體重

☐$_1$ 過重 ☐$_2$ 略重 ☐$_3$ 適中 ☐$_4$ 略輕 ☐$_5$ 過輕

E.

1. 你的孩子有沒有嘗試過食固體食物？ ☐$_1$ 有 ☐$_2$ 沒有 (跳去 E8)

2. 你的孩子初次嘗試吃以下食物的年紀是：

食物 / 年齡	小於 4 個月	5 個月	6 個月	還未嘗試過
1. 五穀類的食物，包括粥 / 米糊	☐$_1$	☐$_2$	☐$_3$	☐$_4$
2. 瓜菜	☐$_1$	☐$_2$	☐$_3$	☐$_4$
3. 水果	☐$_1$	☐$_2$	☐$_3$	☐$_4$
4. 魚	☐$_1$	☐$_2$	☐$_3$	☐$_4$
5. 肉類：包括牛、豬、羊	☐$_1$	☐$_2$	☐$_3$	☐$_4$
6. 家禽：雞鴨鵝	☐$_1$	☐$_2$	☐$_3$	☐$_4$
7. 豆、豆類製成品	☐$_1$	☐$_2$	☐$_3$	☐$_4$
8. 蛋黃	☐$_1$	☐$_2$	☐$_3$	☐$_4$

3a 平均一個星期來說，誰最經常負責決定孩子吃什麼固體食物？ (只選一個)

☐$_1$ 孩子的父親 ☐$_3$ 家傭 ☐$_5$ 其他親戚 ☐$_7$ 其他：_____

☐$_2$ 孩子的母親 ☐$_4$ (外)祖父母 ☐$_6$ 褓姆

3b 平均一個星期來說，有多少天是你負責決定孩子吃什麼固體食物？ _____天

4a 平均一個星期來說，誰最經常負責決定孩子食的固體食物的烹調方法？ (只選一個)

☐1 孩子的父親 ☐3 家傭 ☐5 其他親戚 ☐7 其他：_____

☐2 孩子的母親 ☐4 (外)祖父母 ☐6 褓姆

4b 平均一個星期來說，有多少天是你負責決定孩子食的固體食物的烹調方法？_____天

5. 平均一個星期來說，誰最經常負責烹調孩子食的固體食物？ (只選一個)

☐1 孩子的父親 ☐3 家傭 ☐5 其他親戚 ☐7 其他：_____

☐2 孩子的母親 ☐4 (外)祖父母 ☐6 褓姆

6. 進食糊仔/固體食物，你 _____ 讓孩子坐在椅子(或嬰兒車)上。
(注意： 不包括坐大腿)

☐3 常常

☐2 有時候

☐1 幾乎完全不

7. 當你給孩子嘗試新食物時，如果孩子拒絕或不肯接受，你會嘗試多少餐才放棄？

☐1 孩子從不拒絕

☐2 1 至 3 餐

☐3 4 至 6 餐

☐4 7 至 4 餐

☐5 10 餐以上

8. 你的孩子現在用杯飲水的情況

☐1 在協助下，能用普通水杯飲水

☐2 在協助下，能用訓練杯飲水

☐3 未能用杯飲水

☐4 我還未讓孩子嘗試用杯或訓練杯

☐5 不知道

F. 下列是 過去一個月，我 餵孩子進食的情況。

1.	我 _____ 跟從固定的時間表給孩子吃奶。(例如未到餵奶時間，不會給孩子吃奶。到了餵奶時間，就要給孩子吃奶。) ☐3 常常 ☐2 有時候 ☐1 幾乎完全不

2.	我 _____ 讓我的孩子一邊看電視一邊吃奶 /固體食物 。 □3 常常 □2 有時候 □1 幾乎完全不
3.	吃奶/固體食物時，我 _____ 對他說話。 □3 常常 □2 有時候 □1 幾乎完全不
4.	我的孩子吃奶 _____ 是慢吞吞的。 □3 常常 □2 有時候 □1 幾乎完全不 如答常常/有時候 → 每次吃奶需時約 _____ 分鐘。
5.	孩子吃奶慢下來時，我 _____ 用各種方法來催促他。 □3 常常 □2 有時候 □1 幾乎完全不 如答常常/有時候 → 用什麼方法催促他? □ 以說話催他吃 □刺激他的口 □ 其他：_____

- 如有飲奶粉，請繼續答第 6 至 9 題。
- 如只吃母乳，請跳到 G 段。

6.	我 _____ 要孩子完全吃光我給他的奶。 □3 常常 □2 有時候 □1 幾乎完全不
7.	我 _____ 限制孩子吃奶的份量。 □3 常常 □2 有時候 □1 幾乎完全不
8.	我的孩子 _____ 能夠吃光我給他的奶。 □3 常常 □2 有時候 □1 幾乎完全不

9.	吃奶時，我 _____ 讓孩子自己決定吃多少。(例如他要吃多些，我會加給他；吃不完也不迫他) □3 常常 □2 有時候 □1 幾乎完全不

G. 下列的描述是我對孩子飲食的想法。	極不同意 1	不同意 2	同意 3	極同意 4
1. 儘管有些食物我自己不喜歡吃，我仍會給孩子嘗試。				
2. 雖然有些食物孩子不喜歡吃，我仍會給孩子嘗試。				
3. 我清楚知道孩子是否肚餓了。				
4. 我清楚知道孩子是否吃飽了。				
5. 任他吃多少，我會擔心他吃不夠。				
6. 孩子吃幾多(多少)，應該由父母/餵他的人決定。				
7. 讓孩子看電視，是令他合作地吃完一餐的好方法。				
8. 讓孩子一邊吃一邊玩玩具，我便能順利餵完一餐。				
9. 我的孩子未長出牙齒前，我只讓他吃糊仔/流質的食物。				
	完全不擔心 1	不擔心 2	擔心 3	非常擔心 4
10. 總括所有固體食物及奶，我擔心我的孩子吃得太多。				
11. 總括所有固體食物及奶，我擔心我的孩子吃得不夠。				
12. 我擔心我的孩子將來的體重會變得過重。				
13. 我擔心我的孩子將來的體重會變得過輕。				

問卷：有關嬰幼兒餵養之部分 (9 個月大)

C. 孩子現在是否仍以母乳餵哺

☐1 是

☐2 不是

☐1 在孩子_____月大時停止餵哺母乳

☐2 從來沒有

D. 我認爲我孩子的體重

☐1 過重 ☐2 略重 ☐3 適中 ☐4 略輕 ☐5 過輕

E. 下列是 過去一個月，我 餵孩子進食的情況。

1.	我 _____ 定時給孩子吃正餐 (早餐、午餐、晚餐) 。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
2.	我 _____ 定時給孩子吃奶。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
3.	正餐之間，我 _____ 爲孩子安排小食(茶點)。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
4.	我 _____ 讓孩子坐在椅子(或嬰兒車)上進食。(注意：不包括坐大腿) ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
5.	我 _____ 讓我的孩子一邊看電視一邊吃飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
6.	我 _____ 讓我的孩子一邊玩玩具(包括看圖書)一邊吃飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不

7.	我的孩子 _____ 和大部份家人同枱吃晚飯。 □3 常常 □2 有時候 □1 幾乎完全不
7a	我 _____ 先讓孩子吃飽(完晚飯)，家中成年人才吃晚飯。 □3 常常 □2 有時候 □1 幾乎完全不
8.	孩子吃飯時，我 _____ 捉住孩子的手，以避免他抓着食物。 □3 常常 □2 有時候 □1 幾乎完全不
9.	在進餐期間，我 _____ 頻密地清潔孩子的臉和嘴。 □3 常常 □2 有時候 □1 幾乎完全不
10.	介紹新食物給孩子吃時，我 _____ 會在他面前嘗嘗示範。 □3 常常 □2 有時候 □1 幾乎完全不
11.	吃飯時，我 _____ 讓孩子抓住食物或拿匙羹。 □3 常常 □2 有時候 □1 幾乎完全不
12.	吃飯時，我 _____ 讚賞孩子、說鼓勵他的話。 □3 常常 □2 有時候 □1 幾乎完全不
13.	吃飯時，我 _____ 跟孩子談笑。 □3 常常 □2 有時候 □1 幾乎完全不
14.	孩子吃飯慢下來時，我 _____ 會催促他吃。(對他說：快點食啦！) □3 常常 □2 有時候 □1 幾乎完全不

15.	我的孩子吃飯 _____ 是慢吞吞的。 □3 常常 □2 有時候 □1 幾乎完全不 如選常常/有時候 → 每次吃飯需時約 _____ 分鐘。
16.	吃飯時，孩子慢下來時，我 _____ 會將食物弄進他的口。(推入他的口) □3 常常 □2 有時候 □1 幾乎完全不
17.	我 _____ 要孩子完全吃光我給他的飯餸。 □3 常常 □2 有時候 □1 幾乎完全不
18.	我 _____ 重重覆覆地勸孩子多吃一點。(例如：食多啖啦) □3 常常 □2 有時候 □1 幾乎完全不
19.	孩子正餐吃得少，我 _____ 在餐後給他補奶或其他食物。 □3 常常 □2 有時候 □1 幾乎完全不
20.	我 _____ 限制孩子吃飯餸的份量。 □3 常常 □2 有時候 □1 幾乎完全不
21.	我的孩子 _____ 能夠吃光給他的飯餸。 □3 常常 □2 有時候 □1 幾乎完全不
22.	吃飯時，我 _____ 讓孩子自己決定吃多少。(例如他要吃多些，我會加給他；吃不完也不迫他) □3 常常 □2 有時候 □1 幾乎完全不

23.	我 _____ 給孩子食零食。(例如糖果、薯片，不包括餅乾) □3 常常 □2 有時候 □1 幾乎完全不
24.	我 _____ 用同樣的食材來烹調孩子的固體食物和家中成年人的正餐。 □3 常常 □2 有時候 □1 幾乎完全不
25.	我 _____ 讓孩子吃高鹽份的食物。(例如零食、火腿香腸、罐頭、醃製食物、芝士) □3 常常 □2 有時候 □1 幾乎完全不
26.	我 _____ 讓孩子食高脂肪的食物。 □3 常常 □2 有時候 □1 幾乎完全不
27.	我 _____ 讓孩子用餸汁伴飯(撈飯)吃。 □3 常常 □2 有時候 □1 幾乎完全不
28.	我弄給孩子吃的食物，味道 _____ 比家中成年人吃的清淡。 □3 常常 □2 有時候 □1 幾乎完全不
29.	我 _____ 給他喝果汁/甜味包裝飲品。 □3 常常 □2 有時候 □1 幾乎完全不
30.	我 _____ 在孩子面前吃零食。 □3 常常 □2 有時候 □1 幾乎完全不
31.	要令我的孩子嘗試吃新食物是： □3 極困難 □2 有些困難 □1 完全沒有困難

32. 要我的孩子吃以下食物有沒有困難？

a). 蔬菜	b). 水果	c). 魚/肉類	d). 清水
□3 極困難	□3 極困難	□3 極困難	□3 極困難
□2 有些困難	□2 有些困難	□2 有些困難	□2 有些困難
□1 完全沒有困難	□1 完全沒有困難	□1 完全沒有困難	□1 完全沒有困難

F. 下列的描述是我對孩子飲食的想法。	極不同意 1	不同意 2	同意 3	極同意 4
1. 儘管有些食物我自己不喜歡吃，我仍會給孩子嘗試。				
2. 雖然有些食物孩子不喜歡吃，我仍會給孩子嘗試。				
3. 我清楚知道孩子是否肚餓了。				
4. 我清楚知道孩子是否吃飽了。				
5. 任他吃多少，我會擔心他吃不夠。				
6. 孩子吃幾多(多少)，應該由父母/餵他的人決定。				
7. 讓孩子看電視，是令他合作地吃完一餐的好方法。				
8. 讓孩子一邊吃一邊玩玩具，我便能順利餵完一餐。				
9. 我的孩子未長出牙齒前，我只讓他吃糊狀/流質的食物。				
	完全不擔心 1	不擔心 2	擔心 3	非常擔心 4
10. 總括正餐、小食及奶，我擔心我的孩子吃得太多。				
11. 總括正餐、小食及奶，我擔心我的孩子吃得不夠。				
12. 我擔心我的孩子將來的體重會變得過重。				
13. 我擔心我的孩子將來的體重會變得過輕。				

G.

1. 我的孩子初次嘗試吃以下食物的年紀是：

食物 \ 年齡	小於 4 個月	5 個月	6 個月	7 個月	8 個月	9 個月	還未嘗試過
9. 五穀類的食物，包括粥 / 米糊	☐1	☐2	☐3	☐4	☐5	☐6	☐7
10. 瓜菜	☐1	☐2	☐3	☐4	☐5	☐6	☐7
11. 水果	☐1	☐2	☐3	☐4	☐5	☐6	☐7
12. 魚	☐1	☐2	☐3	☐4	☐5	☐6	☐7
13. 肉類：包括牛、豬、羊	☐1	☐2	☐3	☐4	☐5	☐6	☐7
14. 家禽：雞鴨鵝	☐1	☐2	☐3	☐4	☐5	☐6	☐7
15. 豆、豆類製成品	☐1	☐2	☐3	☐4	☐5	☐6	☐7
16. 蛋黃	☐1	☐2	☐3	☐4	☐5	☐6	☐7
17. 蛋白	☐1	☐2	☐3	☐4	☐5	☐6	☐7

2. 當我給孩子嘗試新食物時，如果孩子拒絕或不肯接受，我會嘗試多少餐才放棄？

☐1 孩子從不拒絕 ☐2 1 至 3 餐 ☐3 4 至 6 餐 ☐4 7 至 9 餐 ☐5 10 餐以上

3. 以下的問題是有關孩子在過去七天所吃過的正餐食物：

	0 次	1 至 2 次	3 至 6 次	每天一次	每天多次
1. 自家烹調食物	☐1	☐2	☐3	☐4	☐5
2. 預先包裝的速食或即食食物	☐1	☐2	☐3	☐4	☐5
3. 市面上購買的樽裝之嬰兒固體食物	☐1	☐2	☐3	☐4	☐5
4. 外賣的熟食	☐1	☐2	☐3	☐4	☐5
5. 在餐廳、快餐店、茶樓進餐	☐1	☐2	☐3	☐4	☐5

4. 以下是我的孩子自行進食的情況：

1.	用手抓住食物吃(如餅乾、水果、麵包等) ☐$_1$ 能夠 ☐$_2$ 未能夠 ☐$_3$ 我不讓孩子用手抓住食物吃 ☐$_4$ 不知道
2.	用羹匙 ☐$_1$ 能夠，頗整潔地用羹匙吃飯。 ☐$_2$ 能夠用羹匙餵自己， 但仍有食物漏出 ☐$_3$ 未能夠 ☐$_4$ 我未讓孩子拿羹匙 ☐$_5$ 不知道
3.	用杯飲水 ☐$_1$ 能自行用普通水杯飲水 ☐$_2$ 能自行用訓練杯飲水 ☐$_3$ 在協助下，能用普通水杯飲水 ☐$_4$ 在協助下，能用訓練杯飲水 ☐$_5$ 未會能用杯飲水 ☐$_6$ 我還未讓孩子用杯或訓練杯 ☐$_7$ 不知道

問卷：有關嬰幼兒餵養之部分 - (12 / 18 個月大)

C. 孩子現在是否仍以母乳餵哺

☐1 是

☐2 不是

☐1 在孩子_____月大時停止餵哺母乳

☐2 從來沒有

D. 我認爲我孩子的體重

☐1 過重 ☐2 略重 ☐3 適中 ☐4 略輕 ☐5 過輕

E. 下列是 過去一個月，我 餵孩子進食的情況。

1.	我 _____ 定時給孩子吃正餐 (早餐、晚餐、午餐) ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
2.	我 _____ 定時給孩子吃奶。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
3.	正餐之間，我 _____ 爲孩子安排小食(茶點)。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
4.	我 _____ 讓孩子坐在椅子上進食。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
5.	我 _____ 讓我的孩子一邊玩玩具(包括看圖書)一邊吃飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
6.	孩子吃飯時，我 _____ 捉住孩子的手，以避免他抓着食物。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有

7.	吃飯時，我 _____ 讚賞孩子、說鼓勵他的話。 □3 常常 □2 有時候 □1 幾乎完全沒有
8.	吃飯時，我 _____ 跟孩子談笑。 □3 常常 □2 有時候 □1 幾乎完全沒有
9.	孩子吃飯慢下來時，我 _____會催促他吃。(對他說: 快點食啦!) □3 常常 □2 有時候 □1 幾乎完全沒有
10.	我的孩子吃飯 _____ 是慢吞吞的。 □3 常常 □2 有時候 □1 幾乎完全沒有
11.	吃飯時，孩子慢下來時，我 _____ 會將食物弄進他的口。(推入他的口) □3 常常 □2 有時候 □1 幾乎完全沒有
12.	我 _____ 重重覆覆地勸孩子多吃一點。(例如: 食多啖啦) □3 常常 □2 有時候 □1 幾乎完全沒有
13.	孩子正餐吃得少，我 _____ 給他補奶或其他食物。 □3 常常 □2 有時候 □1 幾乎完全沒有
14.	我的孩子 _____ 能吃光給他的飯餸。 □3 常常 □2 有時候 □1 幾乎完全沒有
15.	你有幾經常給孩子吃: a). 蔬菜 / b). 水果 / c). 肉或豆類 □ 每日 2 次或以上 / □ 每日 2 次或以上 / □ 每日 2 次或以上 □ 每日 1 次 / □ 每日 1 次 / □ 每日 1 次 □ 一星期 5-6 次 / □ 一星期 5-6 次 / □ 一星期 5-6 次 □ 一星期 2-4 次 / □ 一星期 2-4 次 / □ 一星期 2-4 次 □ 一星期 1 次或少過 / □ 一星期 1 次或少過 / □ 一星期 1 次或少過

16.	我 _____ 讓孩子吃高鹽份的食物。 □3 常常 □2 有時候 □1 幾乎完全沒有
17.	我 _____ 讓孩子食高脂肪的食物。 □3 常常 □2 有時候 □1 幾乎完全沒有
18.	我 _____ 限制孩子吃零食的份量。 □3 常常 □2 有時候 □1 幾乎完全沒有
19.	我弄給孩子吃的食物，味道 _____ 比家中成年人吃的清淡。 □3 常常 □2 有時候 □1 幾乎完全沒有
20.	我 _____ 給他喝果汁/甜味包裝飲品。 □ 每日 2 次或以上 □ 每日 1 次 □ 一星期 5-6 次 □ 一星期 2-4 次 □ 一星期 1 次或少過
21.	要令我的孩子嘗試吃新食物是: □3 極困難 □2 有些困難 □1 完全沒有困難
22.	要我的孩子吃以下食物有沒有困難？ a). 蔬菜 b). 水果 c). 魚/肉類 d). 清水 □3 極困難 □3 極困難 □3 極困難 □3 極困難 □2 有些困難 □2 有些困難 □2 有些困難 □2 有些困難 □1 完全沒有困難 □1 完全沒有困難 □1 完全沒有困難 □1 完全沒有困難

F. 下列是 過去一個月，我 餵孩子進食的情況。

1.	我的孩子，每頓飯一般需時約 ____ 分鐘。 ☐4 少過或等於 15 分鐘 ☐3 16 -30 分鐘 ☐2 31-45 分鐘 ☐1 46-60 分鐘 ☐0 60 分鐘 以上
2.	我 _____ 讓我的孩子一邊看電視一邊吃飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
3.	我 _____ 要孩子完全吃光我給他的飯餸。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
4.	我 _____ 先讓孩子吃飽(完晚飯)，家中成年人才吃晚飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
5.	在進餐期間，我 _____ 頻密地清潔孩子的臉和嘴。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
6.	介紹新食物給孩子吃時，我 _____ 會在他面前嘗嘗示範。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
7.	吃飯時，我 _____ 讓孩子自己吃。(讓孩子抓住食物或拿匙羹) ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有
8.	我的孩子 _____ 和大部份家人同枱吃晚飯。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全沒有

9.	(只問 18 個月大) 我 _____ 需要追着孩子餵食才可令他吃完一餐飯。 □3 常常 □2 有時候 □1 幾乎完全沒有
10.	我 _____ 限制孩子吃飯餸的份量。 □3 常常 □2 有時候 □1 幾乎完全沒有
11.	我 _____ 給孩子食零食。 □3 常常 □2 有時候 □1 幾乎完全沒有
12.	我 _____ 用同樣的食材來烹調孩子和家中成年人的正餐。 □3 常常 □2 有時候 □1 幾乎完全沒有
13.	吃飯時，我 _____讓孩子自己決定吃多少。(例如他要吃多些，我會加給他；吃不完也不迫他) □3 常常 □2 有時候 □1 幾乎完全沒有
14.	我 _____ 在孩子面前吃零食。 □3 常常 □2 有時候 □1 幾乎完全沒有

G. 下列的描述是我對孩子飲食的想法。	極不同意 1	不同意 2	同意 3	極同意 4
1. 儘管有些食物我自己不喜歡吃，我仍會給孩子嘗試。				
2. 雖然有些食物孩子不喜歡吃，我仍會給孩子嘗試。				
3. 我清楚知道孩子是否肚餓了。				
4. 我清楚知道孩子是否吃飽了。				
5. 任他吃多少，我會擔心他吃不夠。				
6. 孩子吃幾多(多少)，應該由父母/餵他的人決定。				
7. 讓孩子看電視，是令他合作地吃完一餐的好方法。				
8. 讓孩子一邊吃一邊玩玩具，我便能順利餵完一餐。				
9. 我的孩子未長出牙齒前，我只讓他吃糊狀/流質的食物。				
	完全不擔心 1	不擔心 2	擔心 3	非常擔心 4
10. 總括正餐、小食及奶，我擔心我的孩子吃得太多。				
11. 總括正餐、小食及奶，我擔心我的孩子吃得不夠。				
12. 我擔心我的孩子將來的體重會變得過重。				
13. 我擔心我的孩子將來的體重會變得過輕。				

H. (只問 12 個月大) 我的孩子初次嘗試吃以下食物的年紀是：

1.

食物 \ 年齡	小於 4 個月	5 個月	6 個月	7 個月	8 個月	9 個月	10 個月	11 個月	12 個月	還未嘗試過
1. 五穀類的食物，包括粥 / 米糊	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
2. 瓜菜	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
3. 水果	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
4. 魚	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
5. 肉類：包括牛、豬、羊	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
6. 家禽：雞鴨鵝	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
7. 豆、豆類製成品	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
8. 蛋黃	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10
9. 蛋白	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8	☐9	☐10

2. (12&18 個月) 當我給孩子嘗試新食物時，如果孩子拒絕或不肯接受，我會嘗試多少餐才放棄？

☐1 孩子從不拒絕 ☐2 1 至 3 餐 ☐3 4 至 6 餐 ☐4 7 至 9 餐 ☐5 10 餐以上

3. (12&18 個月) 以下的問題是有關孩子在過去七天所吃過的正餐食物：

	0 次	1 至 3 次	4 至 6 次	7 至 9 次	10 次或以上
1. 自家烹調食物	☐1	☐2	☐3	☐4	☐5
2. 預先包裝的速食或即食食物	☐1	☐2	☐3	☐4	☐5
3. 市面上購買的樽裝之嬰兒固體食物	☐1	☐2	☐3	☐4	☐5
4. 外賣的熟食	☐1	☐2	☐3	☐4	☐5
5. 在餐廳、快餐店、茶樓進餐	☐1	☐2	☐3	☐4	☐5

4. (12&18 個月) 以下是我的孩子自行進食的情況:

1.	用手抓住食物吃(如餅乾、水果、麵包等) ☐1 能夠 ☐2 未能夠 ☐3 我不讓孩子用手抓住食物吃 ☐4 不知道
2.	用羹匙 ☐1 能夠，頗整潔地用羹匙吃飯。 ☐2 能夠用羹匙餵自己， 但仍有食物漏出 ☐3 未能夠 ☐4 我未讓孩子拿羹匙 ☐5 不知道
3.	3. 用杯飲水 ☐1 能自行用普通水杯飲水 ☐2 能自行用訓練杯飲水 ☐3 在協助下，能用普通水杯飲水 ☐4 在協助下，能用訓練杯飲水 ☐5 未會能用杯飲水 ☐6 我還未讓孩子用杯或訓練杯 ☐7 不知道

問卷: 有關嬰幼兒餵養之部分 - (24 / 48 個月)

C. 孩子是否曾經以母乳餵哺?

☐ 是，在孩子_____月大時停止餵哺母乳

☐ 否

D. 我認爲我孩子的體重

☐$_1$ 過重 ☐$_2$ 略重 ☐$_3$ 適中 ☐$_4$ 略輕 ☐$_5$ 過輕

E. 下列是 過去一個月，我 餵孩子進食的情況。

1.	我的孩子吃飯的時候 _____ 走來走去，不能安坐。 ☐$_3$ 常常 ☐$_2$ 有時候 ☐$_1$ 幾乎完全不
2.	我的孩子 _____ 揀飲擇食。 ☐$_3$ 常常 ☐$_2$ 有時候 ☐$_1$ 幾乎完全不
3.	當孩子不喜歡檯上的食物時，我 _____ 給他別的食物。 ☐$_3$ 常常 ☐$_2$ 有時候 ☐$_1$ 幾乎完全不
4.	要令我的孩子吃正餐 _____ 是一場搏鬥。 ☐$_3$ 常常 ☐$_2$ 有時候 ☐$_1$ 幾乎完全不
5.	我的孩子吃飯 _____ 是慢吞吞的。 ☐$_2$ 常常 ☐$_1$ 有時候 ☐$_0$ 幾乎完全沒有
6.	我 _____需要追著孩子餵食才可令他吃完一頓飯。 ☐$_3$ 常常 ☐$_2$ 有時候 ☐$_1$ 幾乎完全不

7.	我 _____ 在家中儲存零食(如糖果、餅乾、薯片等)。 □3 常常 □2 有時候 □1 幾乎完全不
8.	我 _____ 限制孩子吃零食的份量。 □3 常常 □2 有時候 □1 幾乎完全不
9.	我 _____ 讓孩子吃高鹽份的食物。 □3 常常 □2 有時候 □1 幾乎完全不
10.	我煮食時 _____ 用煎炸的方法。 □3 常常 □2 有時候 □1 幾乎完全不
11.	我煮食時 _____ 刻意少落油。 □3 常常 □2 有時候 □1 幾乎完全不
12.	我煮食時 _____ 刻意少落鹽。 □3 常常 □2 有時候 □1 幾乎完全不
13.	我 _____ 給他喝果汁/甜味包裝飲品。 □ 每日 2 次或以上 □ 每日 1 次 □ 一星期 5-6 次 □ 一星期 2-4 次 □ 一星期 1 次或少過
14.	我和孩子上食肆時 _____ 會刻意選擇較健康的食物。 □3 常常 □2 有時候 □1 幾乎完全不

15.	你有幾經常給孩子吃: a). 蔬菜 / b). 水果 / c). 肉或豆類 ☐ 每日 2 次或以上 / ☐ 每日 2 次或以上 / ☐ 每日 2 次或以上 ☐ 每日 1 次 / ☐ 每日 1 次 / ☐ 每日 1 次 ☐ 一星期 5-6 次 / ☐ 一星期 5-6 次 / ☐ 一星期 5-6 次 ☐ 一星期 2-4 次 / ☐ 一星期 2-4 次 / ☐ 一星期 2-4 次 ☐ 一星期 1 次或少過 / ☐ 一星期 1 次或少過 / ☐ 一星期 1 次或少過
16.	我 _____ 用零食 (或孩子喜歡的食物) 鼓勵他吃有益健康的食物。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
17.	我 _____ 在孩子面前吃煎炸食物。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
18.	我 _____ 在孩子面前吃蔬菜和水果。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
19.	我 _____ 在孩子面前吃零食。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
20.	我 _____ 定時給孩子吃正餐 (早餐、晚餐、午餐) 。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
21.	正餐之間，我 _____ 爲孩子安排小食(茶點)。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不
22.	吃正餐時，我的孩子 _____ 需要餵才吃得完。 ☐3 常常 ☐2 有時候 ☐1 幾乎完全不

23.	當孩子吃東西的時候，我或其他照顧者 _____ 從旁看管他。 □3 常常 □2 有時候 □1 幾乎完全不
24.	我 _____ 讓我的孩子一邊看電視一邊吃飯。 □3 常常 □2 有時候 □1 幾乎完全不
25.	我 _____ 讓我的孩子一邊玩玩具(包括看圖書)一邊吃飯。 □3 常常 □2 有時候 □1 幾乎完全不
26.	我 _____ 用孩子喜歡的食物來令他行爲良好。 (例如要他收拾玩具) □3 常常 □2 有時候 □1 幾乎完全不
27.	我 _____ 用孩子喜歡的食物來獎賞他的好行爲。 (例如他成績好時獎勵他) □3 常常 □2 有時候 □1 幾乎完全不
28.	當孩子扭計或唔開心，我 _____會給他食物去安慰(冰)他。 □3 常常 □2 有時候 □1 幾乎完全不
29.	要令我的孩子嘗試吃新食物是： □3 極困難 □2 有些困難 □1 完全沒有困難

30. 要我的孩子吃以下食物有沒有困難？

a). 蔬菜	b). 水果	c). 魚/肉類	d). 清水
□3 極困難	□3 極困難	□3 極困難	□3 極困難
□2 有些困難	□2 有些困難	□2 有些困難	□2 有些困難
□1 完全沒有困難	□1 完全沒有困難	□1 完全沒有困難	□1 完全沒有困難

1.	我的孩子，每頓飯一般需時約 ____ 分鐘。 □4 少過或等於 15 分鐘 □3 16 -30 分鐘 □2 31-45 分鐘 □1 46-60 分鐘 □0 60 分鐘 以上
2.	我的孩子 _____ 和大部份家人同枱吃晚飯。 □3 常常 □2 有時候 □1 幾乎完全不
3.	吃正餐時，我 _____ 讓孩子自己選擇吃桌上的各種食物。 □3 常常 □2 有時候 □1 幾乎完全不
4.	吃飯時，我 _____讓孩子自己決定吃多少。(例如他要吃多些，我會加給他；吃不完也不迫他) □3 常常 □2 有時候 □1 幾乎完全不
5.	若我的孩子不能在適當時間內把正餐吃完，我 _____會把所有食物碗筷收起。 □3 常常 □2 有時候 □1 幾乎完全不 適當時間爲多久?_____ 分鐘
6.	我 _____ 給孩子吃零食。 □3 常常 □2 有時候 □1 幾乎完全不
7.	我 _____ 把零食(如糖果、餅乾、薯片等)放在孩子接觸不到的地方。 □3 常常 □2 有時候 □1 幾乎完全不
8.	我 _____ 讓孩子吃高脂肪的食物。(例如曲奇餅、忌廉/芝士蛋糕、煎炸食物、雞翼連皮，肥肉) □3 常常 □2 有時候 □1 幾乎完全不

9.	我 _____ 用高鹽的加工食材 (例如火腿腸仔、醃製食物、罐頭、午餐肉) 來給孩子煮食。 □3 常常 □2 有時候 □1 幾乎完全不
10.	我爲孩子準備的飯餸 _____ 是多菜少肉。(蔬菜的份量比肉多) □3 常常 □2 有時候 □1 幾乎完全不
11.	我 _____ 要孩子完全吃光我給他的飯餸。 □3 常常 □2 有時候 □1 幾乎完全不
12.	我 _____ 限制孩子吃飯餸的份量。 □3 常常 □2 有時候 □1 幾乎完全不
13.	我的孩子在過去七天的正餐，有多少次有外賣的熟食 □4 0 次 □3 1 至 3 次 □2 4 至 6 次 □1 7 至 9 次 □0 10 次或以上
14.	我的孩子在過去七天的正餐，有多少次在餐廳、快餐店、茶樓進餐 □4 0 次 □3 1 至 3 次 □2 4 至 6 次 □1 7 至 9 次 □0 10 次或以上

G. 下列的描述是我對孩子飲食的想法。	完全不擔心 1	不擔心 2	擔心 3	非常擔心 4
1. 總括正餐、小食及奶，我擔心我的孩子吃得太多。				
2. 總括正餐、小食及奶，我擔心我的孩子吃得不夠。				
3. 我擔心我的孩子將來的體重會變得過重。				
4. 我擔心我的孩子將來的體重會變得過輕。				