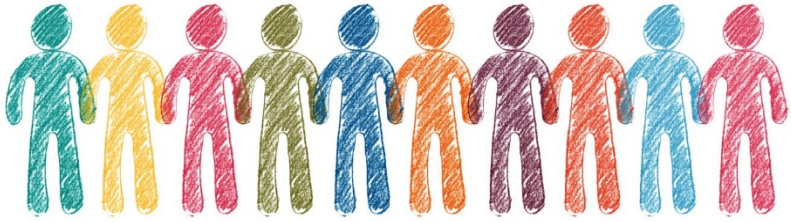

**The Hong Kong College of Community Health Practitioners Working Papers Series**

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# To review prevalence of breastfeeding practices in Hong Kong

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**ABSTRACT**

Breastfeeding is the normal way of providing newborns with greatest nutritional, immunological and emotional nurturing for healthy growth and development. In fact, the breastfeeding rate in Hong Kong was quite low as compared with other countries even exclusive breastfeeding is recommended up to first six months of age by the World Health Organisation (WHO). This study is a systemic review the breastfeeding rates between Hong Kong and overseas countries, as well as public attitude in breastfeeding practices and social support by the government. The lower breastfeeding rate in Hong Kong as compared with other countries means much room for improvement. Policies and workplace are found to be the major factors which affect the prevalence of breastfeeding in Hong Kong. Government, health care authorities and organisation, and private enterprises, are responsible in establishing a friendly environment for mothers to perform breastfeeding without discrimination.

**KEYWORDS:** Exclusive breastfeeding, Formula milk, Mixed feeding

# 1 INTRODUCTION

Parents are willing to give the best to their children at any time. Breast milk is known to be the best nutrient source which gives multiple effective ways to ensure body health of infants and mothers because breast milk contains varied combinations of nutrients, antibodies, and living immune cell, as usual (Centre for Health Protection, 2010). All components of breast milk are beneficial for the development of immune system of the infants. There are some evidences that breastfeeding promotes health and responsive parenting right for mothers after birth. Therefore, exclusive breastfeeding for newborns up to first six months had been endorsed as the most optimal form of nutrient source for babies by multiple health organisations, including United Nations Children's Fund (UNICEF) and the WHO (UNICEF, 2019; WHO, 2001). However, according to the global database of WHO, less than half of the infants under six months of age are exclusively breastfed among the world. Followed by the rising public concern in food nutrition and safety in the past few decades, the breastfeeding promotion has been starting since 1992 (Centre for Health Protection, 2014). Yet there is much room for improvement of the local breastfeeding rate. As a developed city in the world, Hong Kong has a lower rate of breastfeeding practices, less than one-tenth, compared with other Asian countries. The research explores the current situation of local breastfeeding via consolidation of the findings from certain studies and papers. It is useful to reveal the reasons of lower breastfeeding rate in Hong Kong with different aspects. Recommendations will be proposed in order to advocate and increase public awareness of the local breastfeeding practices.

# 2 OBJECTIVES OF THE STUDY

This study has three research objectives. Firstly, the review aims to figure out the current situation of breastfeeding in Hong Kong by analysing the percentage of breastfeeding in Hong Kong within the past years and compare the breastfeeding rate between Hong Kong and foreign countries. Secondly, the research investigates into the factors which may affect the prevalence of breastfeeding practices in Hong Kong. Finally, the recommendations such as legal practices, public facilities with enterprise support will be formulated to popularise the practices in Hong Kong.

# 3 LITERATURE REVIEW

## 3.1 Definition of exclusive breastfeeding

Breastfeeding is the process of feeding a mother's breast milk to her infant. The form of breastfeeding can be divided into two types: feeding babies directly from mother's breast and bottle-feeding the milk pumping out from the mother's breast to babies (National Institutes of Health, 2017). Exclusive breastfeeding is defined as 'giving breast milk with no other foods or liquids except vitamin, mineral and prescribed medications' (Gartner, 2005). The World Health Organisation (WHO) recommends babies to be exclusively breastfed for the first 6 months of life.

## 3.2 Definition of mixed feeding

Different from exclusive breastfeeding, mixed feeding means mixing breast feeding and bottle feeding with formula milk (National Childbirth Trust, 2019). Mother may prefer mixed feeding for a variety of reasons. For instance, if the mother is unable to supply enough breastmilk for her baby or the baby has some health problems, such as premature birth or other health conditions, which cause a difficulty to receive breastfeeding, or the mother is inconvenient to feed her baby by breastfeeding. Mixed feeding is an alternative feeding method instead of exclusive breastfeeding (Pregnancy Birth and Baby, 2018).

### 3.3 Definition of infant formula

Infant formula, also called baby milk, is a manufactured food made from cow's milk and designed for babies and infants below 12 months of age. According to the definition by The Federal Food, Drug, and Cosmetic Act (FFDCA), infant formula has been identified as "a food which purports to be or is represented for special dietary use solely as a food for infants by reason of its simulation of human milk or its suitability as a complete or partial substitute for human milk" (U.S. Food and Drug Administration, 2018). In general, the amount of nutrient requirement of babies is gradually increased in different stages. Therefore, infant formula is divided into four stages in the customer market. According to the Department of Health of Hong Kong, stage one formula is suitable for newborns and babies who are aged first six months or not more than one year old (Family Health Service, 2019). Stage two formula, also called follow-on formula, is for babies who are older than six months. Stage three and four formulae are called toddler milk and junior milk specific for toddler older than 12 months and 24 months respectively (Karinourish, 2019).

### 3.4 Differences between breast milk and infant formula

#### 3.4.1 Differences in ingredients

Breast milk and infant formula are two major food sources for infants and babies for a long time. Basically, nutritional value of the two formulae is similar, while they can be distinguished in terms of ingredients (Table 1). Except water, carbohydrates, fat and protein, breast milk contains more variety of nutrients than infant milk (Winder, 2016). Infant formula involves two amino acids, which are Taurine and L-Carnitine, whereas there are around 20 types of amino acids in breast milk (Senseney, 2017).

**Table 1. Differences in ingredients between breast milk and infant formula**

| Types of food sources / Components | Breast milk | Infant formula |
|---|---|---|
| 1. Water | ✓ | ✓ |
| 2. Carbohydrates | ✓ | ✓ |
| 3. Protein | ✓ | ✓ |
| 4. Fats | ✓ | ✓ |
| 5. Minerals | ✓ | ✓ |
| 6. Vitamins | ✓ | ✓ |
| 7. Enzyme | ✓ | ✓ |
| 8. Amino acids | ✓ | ✓ |
| 9. Nucleotides | ✓ | ✓ |
| 10. Soy Lecithin | ✗ | ✓ |
| 11. Carboxylic acid | ✓ | ✗ |
| 12. Nitrogen | ✓ | ✗ |
| 13. Fatty acids | ✓ | ✗ |
| 14. Phospholipids | ✓ | ✗ |
| 15. Sterols | ✓ | ✗ |
| 16. Cytokines | ✓ | ✗ |
| 17. Peptides | ✓ | ✗ |

| | | |
|---|---|---|
| 18. Hormones | ✓ | ✗ |
| 19. Antiproteases | ✓ | ✗ |
| 20. Antimicrobial factors | ✓ | ✗ |

(Source: Winder, 2016)

3.4.2 Differences in nutrition composition

At present, consumers are concerning whether infant formula or breast milk is more beneficial to their babies. So, there are different kinds of nutrients added into the infant formula by manufacturers in order to match the nutritional standard of breast milk and meet the expectation of the consumers, mostly parents. The composition of breast milk differs throughout the day and various factors, such as the mother's health and the day after postpartum (Tian, 2018). However, the nutritional composition value of different nutrients, including carbohydrates, protein and calcium, in breast milk are more abundant than that of infant formula in the same millilitre (Table 2). From the data from the Centre for Food Safety, all of the nutrients amounts in infant milk are lower except that similar energy is contained in both food sources (Centre for Food Safety, 2014). It can be concluded that breast milk is better than formula milk in the nutritional aspect.

**Table 2. Composition of key nutrients found in breast milk and infant formula**

| Types of food sources / Components | Nutritional composition of breast milk per 100 ml | Nutritional composition of infant formula per 100 ml |
|---|---|---|
| 1. Energy (kJ) | 280 | 250-295 |
| 2. Energy (kcal) | 67 | 60-70 |
| 3. Carbohydrates (g) | 7.0 | 2.2-3.3 |
| 4. Protein (g) | 1.3 | 0.45-0.7 |
| 5. Fats (g) | 4.2 | 1.05-1.4 |
| 6. Calcium (mg) | 35 | 12 |
| 7. Iron (mcg) | 76 | 0.1 |
| 8. Phosphorus (mg) | 15 | 6 |
| 9. Vitamin A (mcg) | 60 | 14-43 |
| 10. Vitamin C (mg) | 3.8 | 2.5 |

(Sources: Tian, 2018 & Centre for Food Safety, 2014)

## 4 STUDY DESIGN

### 4.1 Research Planning

To explore the local breastfeeding rate, this research adopts secondary data collection from the survey conducted by the Department of Health of Hong Kong. This survey recorded the breastfeeding rates of infants born in 2012, 2014 and 2016. All of the relevant data were downloaded from the website of the Department of Health. Meanwhile, to achieve more information from a massive database in the United Kingdom (UK), this research takes reference of the data collected by the UK survey in 2010. This research aims to compare the breastfeeding rate among different countries or places in America, Europe and Asia.

### 4.2 Data Collection

All the literature search was undertaken using the electronic database from the National Center for Biotechnology Information (NCBI) and PubMed through Google browser, The HKU Scholars Hub and CPCE library.

### 4.3 Strength and weakness of systemic review

Systemic review can summarise findings from different kinds of studies. It is more likely to produce reliable evidence while it may have bias or stand and limit the accuracy of the conclusion as a result (MacGill, 2019).

## 5 KEY FINDINGS

### 5.1 Breastfeeding rate in overseas countries and Hong Kong

Table 3 summarises the literature for breastfeeding rate worldwide and in Hong Kong.

#### 5.1.1 Breastfeeding rate in North America

##### 5.1.1.1 The trends in the United States

The research "Breastfeeding and Health Outcomes for the Mother-Infant Dyad", was conducted by The Pediatric Clinics of North America. It shows two groups of data, normal breastfeeding and exclusive breastfeeding, in 2010 and 2011 respectively. The differences between the two groups of data are beneficial for readers to determine the differences between normal and exclusive breastfeeding. It revealed that although more than half of women in the United States adopted breastfeeding, the percentage for exclusive breastfeeding was lower than 25% and failed to achieve the ideal goals set by WHO (Dieterich et al., 2013).

##### 5.1.1.2 The trends in Canada

The study "Rates and determinants of exclusive breastfeeding in first 6 months among women in Nova Scotia: a population-based cohort study" conducted by the scholars from Canada is to identify predictors of early cessation of exclusive breastfeeding in Canada. Data were collected from a database of infants born between 2006 and 2009 in the province of Nova Scotia and only one-tenth of the mothers breastfed exclusively for the six months (Brown et al., 2013). The cohort study revealed that each province of Canada has different trends in breastfeeding.

The research "Exclusive breastfeeding in hospital predicts longer breastfeeding duration in Canada: implication for health equity." was published in Canada in 2018. The study examined the association between breastfeeding duration and breastfeeding in hospitals. The study collected birth record from 2009 to 2012 and reported that three quarters of the respondents preferred breastfeeding for at least six months and more than 40% of the respondents breastfed for 12 months or more. On the other hand, exclusive breastfeeding was reported for 61.1% of infants at three months and fell to 18.5% by six months (Vehling et al., 2018). The cohort study concluded that supporting exclusive breastfeeding in hospitals could improve breastfeeding rate effectively.

#### 5.1.2 Breastfeeding rate in Europe

##### 5.1.2.1 The trends in the United Kingdom

The research "Infant feeding survey" was conducted by the National Health Service in 2010 to investigate into the prevalence of breastfeeding in United Kingdom. This is a national study for the whole citizens of the United Kingdom. Most of the collected data were grouped, separated and presented through different tables. The study shown that the initial breastfeeding rate increased from three out of four in 2005 to higher than four out of five in 2010 in the United Kingdom. The prevalence of breastfeeding dropped to approximately half of the people

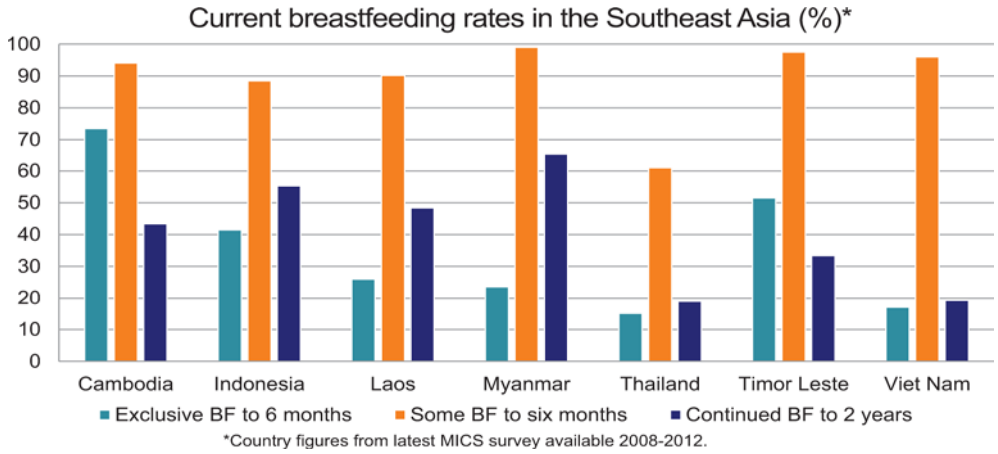
at 6 weeks and just higher than one third at 6 months in 2010. Only one percent of the mothers maintained exclusive breastfeeding to six months in 2010 (McAndrew et al., 2012).

5.1.3 Breastfeeding rate in Southeast Asia

5.1.3.1 The trends across seven countries in Southeast Asia

The research "The cost of not breastfeeding in Southeast Asia" was collected from seven countries in Southeast Asia, which included Cambodia, Indonesia, Laos, Myanmar, Thailand, Timor Leste, and Vietnam. The results revealed that the exclusive breastfeeding rate in Thailand is about 15% and is the lowest among the seven countries (Walters et al., 2016; Figure 1).

**Figure 1. Breastfeeding rates in Southeast Asia**




(Source: Walters et al., 2016)

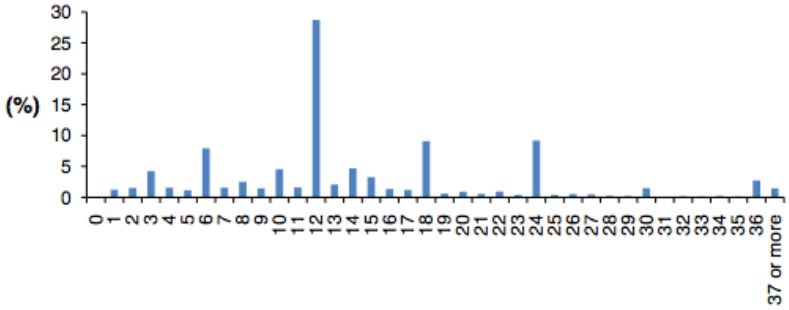
5.1.3.2 The trends in Indonesia

The study "Breastfeeding Practices and Knowledge in Indonesia" has shown that one out of five babies who are exclusively breastfed for full six months (Beatty, Ingwersen & Null, 2017).

5.1.3.3 The trends in Japan

The paper "Breastfeeding practices and parental employment in Japan" was published in 2014 to investigate the breastfeeding practice in Japan (Kobayashi & Usui, 2014). The study used data from the Japanese Longitudinal survey on Employment and Fertility (LOSEF), which recruited 3,651 parents and 7,148 children as the eligible respondents in 2012. The study revealed that approximately nine-tenths of the sample initiated breastfeeding, and also found that nearly one-tenth of the sample were breastfed for six months and more than one-fourth were breastfed for 12 months (Figure 2).

**Figure 2. Number of months of breastfeeding**

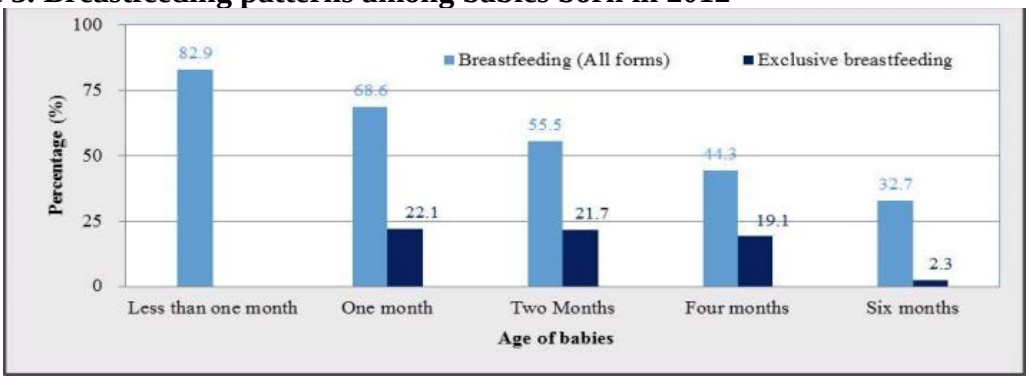



(Source: Kobayashi & Usui, 2014)

5.1.3.4 The trends in Hong Kong

The Family Health Service of the Department of Health conducted a survey in 2013 and counted the percentage of breastfeeding among babies who were born in 2012. The result revealed that the exclusive breastfeeding rate dropped substantially from the first month to six months shown as Figure 3 (Centre for Health Protection, 2014).

**Figure 3. Breastfeeding patterns among babies born in 2012**




(Source: Centre for Health Protection, 2014)

**Table 3. Summary of systemic review**

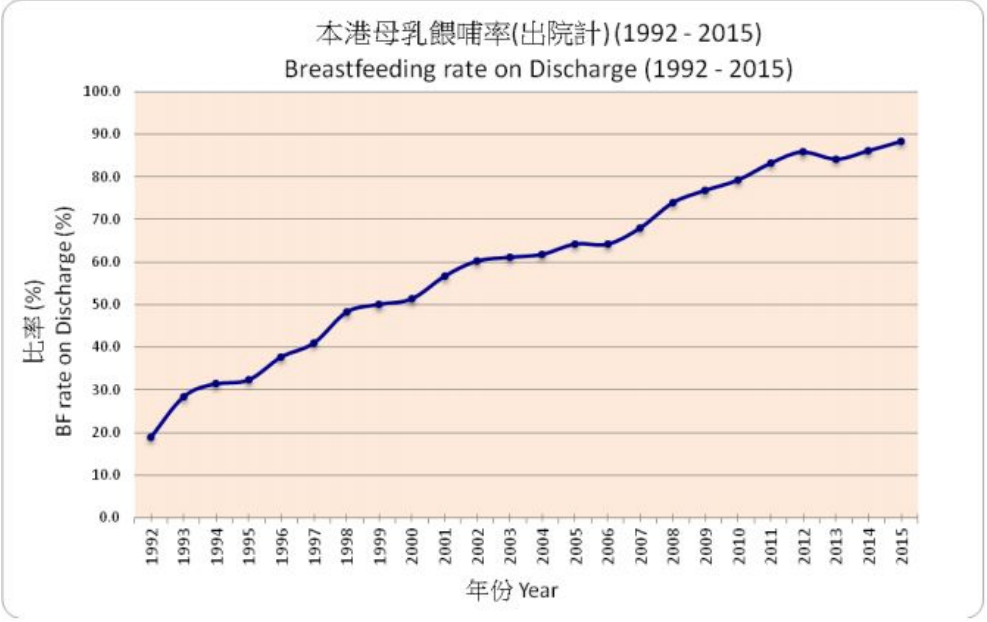
| Authors | Countries | Methodology | Sample Size | Results |
|---|---|---|---|---|
| Dieterich, C. M., Felice, J. P., O'Sullivan, E., & Rasmussen, K. M (2013) | The United Stated of America (USA) | Literature review and data collection from CDC | Whole population in the USA | • The national statistics of exclusive breastfeeding rate were lower than the target |
| Brown, C. R., et al., (2013) | Canada | A population-based longitudinal cohort study | 4,533 in total from a province in Canada between 2006 and 2009 | • Only one-tenth exclusively breastfed for six months |
| Vehling, L., et al., (2018) | Canada | A national population-based birth cohort | 3195 in total from the general population | • Nearly half of the respondents were breastfed after six months |

| | | | | |
|---|---|---|---|---|
| | | recruited from four centers across Canada | between 2009 and 2012 | • A good support is effective to improve breastfeeding rate |
| McAndrew, F., et al., (2012) | The United Kingdom (UK) | The Infant Feeding Survey during August and October 2010 | 10,768 mothers completed and returned all three questionnaires | • Only one percent of mothers maintained exclusive breastfeeding to six months |
| Walters, D., Horton, S., Mathisen, R., & Rudert, C (2016) | Cambodia, Indonesia, Laos, Myanmar, Thailand, Timor Leste, Vietnam | Data collection from WHO | Not given | • The poorer the countries, the more the number of longer breastfeeding duration |
| Beatty, A., Ingwersen, N., & Null, C. (2017) | Indonesia | A baseline survey for a cluster-randomized controlled trial of a nutrition program implemented by the Government of Indonesia | The survey administered 3,034 caregivers in late 2014 and early 2015 | • Around one fifth of mothers keep lifelong exclusive breastfeeding for six months |
| Kobayashi, M., & Usui, E. (2014) | Japan | Data collection from the Japanese Longitudinal Survey on Employment and Fertility (LOSEF) in 2012 | 3,661 parents and 7,148 were eligible respondents after the final combination from the pilot survey and previous survey | • Approximately nine-tenth initiated breastfeeding; Around one-tenth breastfed for six months and more than one-fourth breastfed for twelve month |
| Centre for Health Protection (2014) | Hong Kong | Regular breastfeeding survey in Maternal and Child Health Centres in 2013 | Not given | • The number of exclusive breastfeeding rate dropped gradually. |

### 5.2 Comparison of exclusive breastfeeding rates

Hong Kong has experienced an enormous change in lifestyle, especially in breastfeeding. With the joint efforts on breastfeeding promotion by the medical professionals and mothers, the breastfeeding rate on discharge had increased rapidly from less than one-fifth in 1992 to approximately nine-tenth in 2014 (Leung, 2016) (Figure 4). However, compared with the United States and Indonesia, the sustained exclusive breastfeeding rates in Hong Kong remained relatively lower (Table 4). Although the trends were slightly higher than that in the United Kingdom after 6 months, there was still much room for improvement.

**Figure 4. Breastfeeding rate on discharge in Hong Kong**




(Source: Baby-Friendly Hospital Initiative Hong Kong Association, 2016)

**Table 4. Breastfeeding in in selected countries and areas**

| | Initiation (%) | At 1 month (%) | At 3 months (%) | At 6 months (%) |
|---|---|---|---|---|
| Hong Kong (2012) | 82.9 | 22.1 | Around 20.4 | 2.3 |
| United States (2013) | 81.0 | 48.6 | Around 35.8 | 16.4 |
| United Kingdom (2012) | 76.5 | - | 12.0 | 1.0 |
| Indonesia (2015) | 76.0 | 32.0 | 20.0 | 20.0 |

(Source: Centre for Health Protection, 2014)

## 6 DISCUSSION

It has been widely recognised that breastfeeding does not only provide comprehensive nutrition for newborn babies but also contributed more benefit to mothers regardless of physical or psychological aspects. Children who are breastfed and exposed to active bonding during feeding are found to have the lowest risks of behaviour problems (Liu et al., 2014). Breastfeeding is associated with positive relationship outcomes but the popularisation of the practice is not adequate.

### 6.1 Relative practices associated with the duration of breastfeeding

Many studies have shown there is a suboptimal condition of breastfeeding among mothers in Hong Kong. The initiative called Baby-Friendly Hospital Initiative (BFHI) was associated with the duration of breastfeeding. This initiative was launched by WHO and UNICEF in 1991 in order to promote and support breastfeeding (World Health Organization, 2018). Research published by the American Academy of Pediatrics suggested that increased baby-friendly practices may help more mothers to achieve their exclusive breastfeeding intention (Perrine et al., 2012). Likewise, there was satisfactory result of longer exclusive breastfeeding because of the holistic guideline of breastfeeding practice in hospitals (Vehling et al., 2018). Greater exposure to baby-friendly hospital practices on breastfeeding in Hong Kong would substantially increase the prevalence of breastfeeding beyond several weeks postpartum (Tarrant et al., 2011). Researches in Hong Kong identified that mothers who experience fewer baby-friendly practices were almost three times to interrupt exclusive breastfeeding. In fact, those practices, such as early skin-to-skin contact, rooming-in and breastfeeding on demand, have been proven as more protective against early breastfeeding cessation. Nonetheless, no hospitals encourage the Baby-Friendly practices in Hong Kong at that moment. The Hong Kong authorities should put more efforts to tackle the barriers for obtaining successful initiation and continuation of appropriate maternity care practices.

### 6.2 Workplace policies associated with the prevalence of breastfeeding in local

Apart from the lack of the international standard of BFHI, the arrangement of returning to the workplace is one of the challenges causing the discontinuity of breastfeeding, no matter the mixed or exclusive practices. Inadequate support of breastfeeding at workplaces is often a consideration for career women who need to stop breastfeeding to their babies. In general, some of the studies have revealed that the breastfeeding rate decreases vigorously when the mothers return to work (Basrowi et al., 2018). It is found that there is only one-tenth of mothers continue to perform breastfeeding after returning to work in Taiwan. Although the mothers are willing to keep breastfeeding after returning to work, some of the countries, such as Pakistan, do not provide breastfeeding breaks for working mothers as well as sufficient childcare facilities (Soomro et al., 2016). Working mothers in Hong Kong who return to work postpartum were more likely to wean after a short duration (Tarrant et al., 2010). Working mothers should have the privilege to breastfeed their babies as usual. As to incarnating the attitude to respect human right, all parties of the community are required to issue specific regulations and create a supportive environment for breastfeeding.

## 7 LIMITATIONS

The study has a few limitations. First, the systemic review is adopted as a major methodology for this paper. The paper focuses on analysis of secondary data from previous studies and lacks primary data collection by using questionnaire may affect the precision of analysing the current situation. Moreover, since the analysed materials were published in different years, the time interval between different papers may have a huge gap as far as ten years. Therefore, the collected data might be ‘outdated’ and the findings cannot be compared in parallel. This research may have a bias towards the results.

## 8 CONCLUSION

Breast milk is the best gift for infants as proved by numerous scientific documents. Even the promotion campaign of breastfeeding practices had been launched two decades ago, the current breastfeeding rate in Hong Kong is below expectations as compared with other developed countries. The lacking of a set of guidelines, such as BFHI, as well as inadequate support of breastfeeding practices for career mothers are the crucial factors resulting in the low breastfeeding rate.

The impact of breastfeeding on long-term health is now well recognised in the world. To prolong the duration and popularisation of breastfeeding, promoting, supporting and protecting breastfeeding are essential from the public health perspective. Therefore, the authorities should strengthen the breastfeeding support in p facilities. The outcomes could be improved significantly when there is adequate and appropriate professional support in peripartum and early postnatal period. Furthermore, providing routine education, guidance and skills support for mothers and the parents shall enhance public awareness of breastfeeding. Besides, the government is recommended to establish and launch breastfeeding-friendly workplace policy in providing baby feeding facilities and advocating breastfeeding break for the career mothers. Private enterprises should proactively adopt the breastfeeding pertinent policy to support their employees and build a great working atmosphere. Such workplace policies and practices in place shall potentially have positive influence on breastfeeding rates.

This paper reviewed the current situation and potential factors associated with the prevalence of breastfeeding at present. To further investigate into similar topics about breastfeeding, in-depth interview to the mothers should be conducted to collect primary data which help understand the underlying difficulties in breastfeeding.

## REFERENCES

Baby-Friendly Hospital Initiative Hong Kong Association. (2016, August 7). *Reports on Annual Survey 2016.* Retrieved August 20, 2019, from https://www.babyfriendly.org.hk/en/reports-annual-survey/

Basrowi, R. W., Sastroasmoro, S., Sulistomo, A. W., Bardosono, S., Hendarto, A., Soemarko, D. S., Sungkar. A., Khoe. L. C. & Vandenplas, Y. (2018). Challenges and Supports of Breastfeeding at Workplace in Indonesia. *Pediatric Gastroenterology, Hepatology & Nutrition, 21*(4), 248-256. doi:10.5223/pghn.2018.21.4.248

Beatty, A., Ingwersen, N., & Null, C. (2017). Breastfeeding Practices and Knowledge in Indonesia. *Mathematics Policy Research*. Retrieved March 1, 2019, from https://www.mathematica-mpr.com/our-publications-and-findings/publications/breastfeeding-practices-and-knowledge-in-indonesia

Brown, C. R., Dodds, L., Attenborough, R., Bryanton, J., Rose, A. E., Flowerdew, G., Langille, D., Lauzon, L., & Semenic, S. (2013). Rates and determinants of exclusive breastfeeding in first 6 months among women in Nova Scotia: A population-based cohort study. *CMAJ Open, 1*(1). doi:10.9778/cmajo.20120011

Centre for Food Safety. (2014). *Nutritional Composition and Nutrition Labelling of Infant Formula*. Retrieved April 24, 2019, from https://www.cfs.gov.hk/english/food_leg/files/Booklet_Formula_Products_for_Infants_e.pdf

Centre for Health Protection. (2010, July). *Breast Milk: Mother's Best Gift to Babies*. Retrieved January 31, 2019, from https://www.chp.gov.hk/en/resources/29/553.html

Centre for Health Protection. (2014, February). Optimising Breastfeeding Practices: A Link to Life Long Health. Retrieved January 31, 2019, from https://www.chp.gov.hk/files/pdf/ncd_watch_feb2014.pdf

Centre for Health Protection. (2017, August). *The HK Code: A Commitment to Protect, Promote and Support Optimal Feeding of Infants and Young Children*. Retrieved January 31, 2019, from https://www.chp.gov.hk/en/resources/29/772.html

Dieterich, C. M., Felice, J. P., O'Sullivan, E., & Rasmussen, K. M. (2013, February). Breastfeeding and Health Outcomes for the Mother-Infant Dyad. *Pediatric Clinics of North America, 60*(1), 31-48. doi:10.1016/j.pcl.2012.09.010

Family Health Service. (2019, March 05). *Guide to Bottle Feeding How to prepare infant formula and feed your baby safely*. Retrieved March 07, 2019, from https://www.fhs.gov.hk/english/health_info/child/12146.html#ref_01

Gartner, L.M., Morton, J., Lawrence, R.A., etc. (2005, February). Breastfeeding and the Use of Human Milk. *Pediatrics, 115*(2), 496-506. doi:10.1542/peds.2004-2491

Karinourish. (2019). *Product Range - Pre-conception to Toddle*r. Retrieved from https://www.karinourish.co.nz/products/#

Kobayashi, M., & Usui, E. (2014). Breastfeeding practices and parental employment in Japan. *Review of Economics of the Household,15*(2), 579-596. doi:10.1007/s11150-014-9246-9

Leung, S. (2016). Breast pain in lactating mothers. *Hong Kong Medical Journal, 22*(4), 341-346. doi:10.12809/hkmj154762

Liu, J., Leung, P., & Yang, A. (2014). Breastfeeding and Active Bonding Protects against Children's Internalizing Behavior Problems. *Nutrients, 6*(1), 76-89. doi:10.3390/nu6010076

MacGill, M. (2019, February 25). *Medical research: Systematic review and meta-analysis*. Retrieved April 26, 2019, from https://www.medicalnewstoday.com/articles/281283.php

McAndrew, F., Thompson, J., Fellows, L., Large, A., Speed, M., & Renfrew, M. J. (2012). Infant Feeding Survey 2010. *Health and Social Care Information Centre*. Report No.: 1.

National Childbirth Trust. (2019, March 15). *Mixed feeding: Combining breastfeeding and bottle feeding*. Retrieved April 23, 2019, from https://www.nct.org.uk/baby-toddler/feeding/practical-tips/mixed-feeding-combining-breastfeeding-and-bottle-feeding

National Institutes of Health. (2017, January 31). *About Breastfeeding and Breast Milk*. Retrieved February 1, 2019, from https://www.nichd.nih.gov/health/topics/breastfeeding/conditioninfo

Perrine, C. G., Scanlon, K. S., Li, R., M, L., & Strawn, G. (2012). *Baby-Friendly Hospital Practices and Meeting Exclusive Breastfeeding Intention*. *Pediatrics, 130*(1). doi:10.1542/peds.2011-3633d

Pregnancy Birth and Baby. (2018, June). *Mixed feeding*. Retrieved April 23, 2019, from https://www.pregnancybirthbaby.org.au/mixed-feeding

Senseney, M. (2017, February 03). This Is The Real Difference Between Breast Milk And Formula. Retrieved February 28, 2019, from https://www.healthyway.com/content/this-is-the-real-difference-between-breast-milk-and-formula/

Soomro, J. A., Shaikh, Z. N., Saheer, T. B., & Bijarani, S. A. (2016). Employers' perspective of workplace breastfeeding support in Karachi, Pakistan: A cross-sectional study. *International Breastfeeding Journal,11*(1). doi:10.1186/s13006-016-0084-7

Tarrant, M., Fong, D. Y., Wu, K. M., Lee, I. L., Wong, E. M., Sham, A., Lam, C. & Dodgson, J. E. (2010). Breastfeeding and weaning practices among Hong Kong mothers: A prospective study. *BMC Pregnancy and Childbirth, 10*(1). doi:10.1186/1471-2393-10-27

Tarrant, M., Wu, K. M., Fong, D. Y., Lee, I. L., Wong, E. M., Sham, A., Lam, C. & Dodgson, J. E. (2011). Impact of Baby-Friendly Hospital Practices on Breastfeeding in Hong Kong. *Birth, 38*(3), 238-245. doi:10.1111/j.1523-536x.2011.00483.x

Tian, C. (2018, March 10). *Breast Milk Information: Types, Content & Nutritional Benefits*. Retrieved April 24, 2019, from https://parenting.firstcry.com/articles/whats-there-in-breast-milk-content-and-composition/

UNICEF. (2019). Why family-friendly policies are critical to increasing breastfeeding rates worldwide. Retrieved September 4, 2019, from https://www.unicef.org/press-releases/why-family-friendly-policies-are-critical-increasing-breastfeeding-rates-worldwide

U.S. Food and Drug Administration. (2018, July 03). *People at Risk of Foodborne Illness – Questions & Answers for Consumers Concerning Infant Formula*. Retrieved February 22, 2019, from https://www.fda.gov/Food/FoodborneIllnessContaminants/PeopleAtRisk/ucm108079.htm#1

Vehling, L., Chan, D., Mcgavock, J., Becker, A. B., Subbarao, P., Moraes, T. J., Mandhane, P. J., Turvey, S. E., Lefebvre, D. L., Sears, M. R. & Azad, M. B. (2018). Exclusive breastfeeding in hospital predicts longer breastfeeding duration in Canada: Implications for health equity. *Birth, 45*(4), 440-449. doi:10.1111/birt.12345

Walters, D., Horton, S., Mathisen, R., & Rudert, C. (2016, April 23). The cost of not breastfeeding in Southeast Asia. *Health Policy and Planning, 31*(8), 1107-1116. doi:10.1093/heapol/czw044

Winder, K. (2016, February 15). *What's In Breast Milk and What's In Formula?*. Retrieved February 28, 2019, from https://www.bellybelly.com.au/baby/ingredients-in-breast-milk-and-formula/

World Health Organization. (2001, March). *The optimal duration of exclusive breastfeeding: Report of the expert consultation.* Retrieved January 31, 2019, from https://www.who.int/nutrition/publications/infantfeeding/WHO_NHD_01.09/en/

World Health Organization. (2018, April 13). *Baby-friendly Hospital Initiative*. Retrieved April 25, 2019, from https://www.who.int/nutrition/topics/bfhi/en/