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## How to Promote Exclusive Breastfeeding in Ireland: a Qualitative Study on Views of Chinese Immigrant Mothers

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# How to promote exclusive breastfeeding in Ireland: a qualitative study on views of Chinese immigrant mothers

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## Research

**Keywords:** recommendations, exclusive breastfeeding, Chinese, immigrant, Ireland, in-depth interview, qualitatively

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# Abstract

**Background** The exclusive breastfeeding rate in Ireland is very low with extremely slow annual growth. The population of immigrants in Ireland is increasing. Improving exclusive breastfeeding practice among immigrants may contribute to the overall improvement of exclusive breastfeeding rates in Ireland. This study was conducted to elicit recommendations on improving exclusive breastfeeding rate for six months among Chinese immigrants in Ireland. **Methods** Fourteen semi-structured in-depth individual interviews were conducted with Chinese immigrant mothers resident in Ireland, who breastfed exclusively for four to six months. **Results** Themes generated from thematic content analyses were 1) recommendation for mothers: improve self-intention to breastfeed exclusively and self-efficacy, be financially secure before pregnancy, and obtain breastfeeding information proactively. 2) Recommendation for family members, employers and colleagues, and health care professionals: family members should offer sufficient support. Employers should provide hygienic places for breastmilk storage, and set up breastfeeding rooms and nurseries. Irish hospitals need to advocate exclusive breastfeeding, recruit and train multilingual health care professionals, and combine breastfeeding knowledge with practice in the prenatal education. 3) Recommendation for the government: set up breastfeeding rooms and dedicated rooms for breastfeeding groups, and increase the publicity and visibility of breastfeeding in multiple languages. An independent welfare policy for immigrants was also recommended. **Conclusions** The key findings emerging from this study may be considered in the development of breastfeeding promotion strategies in Ireland. Our findings could also have implications for other English-speaking countries with low rates of exclusive breastfeeding.

## Background

Appropriate feeding practices are of vital importance to children's optimal growth and development [1]. Evidence has showed that exclusive breastfeeding is the optimal way of infant feeding practice during the first six months of life [2-4]. The World Health Organization (WHO) has recommended exclusive breastfeeding within the first six months of life, and continued breastfeeding until the age of two or above. Complementary feeding should be added timely, reasonably, appropriately and safely at six months while continuing to breastfeed [5].

From 2007 to 2014, only 36% of infants under six months of age were exclusively breastfed globally [6]. Data showed that the global exclusive breastfeeding rate at six months had increased to 42% by 2019 [7]. However, the figure is still lower than the WHO global nutrition target of 2025 (*i.e.* 50%) [8]. In Ireland, rates of breastfeeding initiation (at 55.7% in 2010) and exclusive breastfeeding at six months (at 15% in 2013) were among the lowest in Europe [9-11]. Over the last decade, the proportion of women exclusively breastfed at hospital discharge had increased by 9.9% in Ireland [12], with a slow annual increase at 1% [12]. Effective strategies to improve the practice of exclusive breastfeeding are still necessary in Ireland.

The population of Asian immigrants in Ireland had increased by 27.7% from 2011 to 2016, among which Chinese immigrants had increased by 9.1% [13] and was among the largest ethnic groups in Ireland [14, 15]. Research indicates that immigrants in Ireland are more likely to breastfeed than Irish-born mothers [12, 16, 17]. However, Nolan and Layte reported a 'healthy immigrant' effect that breastfeeding rates of immigrant mothers decreased significantly and tended to be similar to that of Irish-born mothers with the increase of immigration time [16]. The Ireland Chinese Mother Survey found that although Chinese immigrants had a high breastfeeding initiation rate (75.6%) and any breastfeeding rate (87.2%), only 5.8% of mothers exclusively breastfed for six months [18, 19].

Breastfeeding promotion strategies, such as *A five-year Strategic Action Plan* [20] which detailed a series of recommendations and goals, have been found in Ireland. However, no existing studies have documented ways on promoting exclusive breastfeeding among immigrants in Ireland. To develop effective interventions and formulate a comprehensive strategy to promote exclusive breastfeeding among immigrants in Ireland, the views and opinions from Chinese mothers in Ireland would be useful. Opinions from mothers who had had a successful experience of breastfeeding exclusively might have more practical significance. Therefore, this study was conducted to elicit the ideas of Chinese mothers who had successfully breastfed for at least six months, with exclusive breastfeeding for four to six months in Ireland.

## Methods

### Definitions

According to the WHO, exclusive breastfeeding means that an infant receives only breast milk from his or her mother or a wet nurse, or expressed breast milk, and no other liquids or solids, not even water, with the exception of oral rehydration solution, drops or syrups consisting of vitamins, minerals supplements or medicines [21].

Complementary feeding is defined as the process starting when breast milk is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk [22, 23].

### Research team and reflexivity

The interviews were conducted by the researcher QZ, the key investigator of this study, and the Ireland Chinese Mothers Survey [18, 19]. She was a female doctoral student in public health nutrition at the time of the study. She specialized in topics related to breastfeeding. With Chinese nationality, her mother language is Chinese. The researcher TMC, an anthropologist with rich qualitative research experience in breastfeeding, provided good guidance on the development, implementation and data analyses of this study. All participants knew the researcher QZ as they have participated in the Ireland Chinese Mothers Survey.

## **Theoretical framework**

Based on the phenomenological framework which exemplifies a constructionist epistemology [24], a qualitative study design was adopted to explore participants' recommendations on exclusive breastfeeding promotion among Chinese immigrant mothers under the Irish social contexts, as such information has not been documented. Thematic analysis provides a flexible research tool that potentially provides rich, detailed and complex data descriptions [25], and was considered appropriate to understand views of Chinese mothers in Ireland. As a result, thematic content analysis was adopted in this study.

## **Participants selection**

Participants met the following criteria were included into the Ireland Chinese Mothers Survey (n=322) [18, 19]: 1) Chinese women who were born in China (including Hong Kong and Macau); 2) had given birth to at least one child; 3) had been living in Ireland for more than six months at time of the interview. Participants from the Ireland Chinese Mothers Survey were invited to take part in this study if they had given birth and breastfed successfully for over six months, with exclusive breastfeeding for four to six months in Ireland. Sixteen Chinese mothers who met the inclusion criteria were contacted *via* telephone calls. They were informed of the study information and asked whether they agreed to take part in the study or not. Two refused to participate due to time constraints. Finally, fourteen agreed to participate in this study. Ethical approval was obtained from the Research Ethics Committee of the Dublin Institute of Technology. The purpose and confidentiality of the study were informed and written consent was obtained from the participant before each interview. Participants had the opportunity to ask questions and to withdraw from the study anytime during the interview.

## **Setting and data collection**

As an appropriate methodology for immigrant population [26, 27], fourteen semi-structured individual interviews were conducted in participants' houses or public cafes in Ireland where were convenient for the

participants from December 2009 to February 2010.

The interview schedule was guided by the qualitative in-depth interview approach [28]. A semi-structured interview guide was developed by the research team inspired by a Hong Kong study which explored the relationship between situational variables and primipara mothers' infant feeding behaviours [29, 30]. The guide was tailored to fit our study aims and pilot tested with three Chinese mothers who had given birth in Ireland. The pilot test showed that our questions could be well understood by participants. The main questions were 1) please provide some advice on how to breastfeed exclusively in Ireland; 2) please provide some ideas for the Irish government in improving exclusive breastfeeding rates in Ireland. Timely adjustments of questions were made according to the actual discussion.

Each interview was conducted in Chinese only, recorded by a digital recorder, and lasted 45 to 125 minutes with no presence of anyone else besides the participants and researchers. After each interview, participants' background information were collected by a brief questionnaire immediately, and field notes were written by QZ. Data was saturated as no new information has been found during the interview. All recordings were transcribed verbatim into Chinese by QZ. HC reviewed the taped interviews and validated the accuracy of the transcription of each interview.

## **Data analysis**

Common themes were generated by two researchers HC and QZ using thematic content analysis method, following the guidelines recommended by Morse & Field [31]. Two researchers read the transcripts (not including the pilot test data) repeatedly and coded the transcripts independently and systematically. Initial codes were generated, and then organized into categories. A tree diagram was developed to help in organizing these categories into a hierarchical structure [31]. Next, categories were integrated into themes. After that, HC and QZ discussed the categories and themes to reach a consensus on the assignment of all themes and extracted quotations to illustrate typical views. During data analyses, field notes were reviewed together with the transcripts. Besides, quotations reflecting Chinese immigrant mothers' opinions on exclusive breastfeeding promotion were adopted. The above process was done repeatedly in subsequent interviews. Similar codes and themes generated from different interviews were gathered, and opposite views were identified. Preliminary results were provided to five participants for their verification. No problem had been reported by these five participants.

## **Results**

### **Sample characteristics**

A total of 14 mothers were interviewed. They were between 24 and 54 years old (mean age: 34 years) and had been living in Ireland from three to 18 years (mean duration: nine years) at time of the study. Most mothers (n=8, 57%) were primiparous; while 43% (n=6) had two children (one had twins). Ten participants had achieved third-level education (71%); while four (29%) obtained education from secondary or training schools. Over half (n=8) of the participants were housewives or had part-time non-professional jobs; while six were self-employed or had professional jobs. The majority (n=11) of the participants had an annual family income over 30,000 euro (before tax); while three had an annual family income of 15,000-30,000 euro. All participants held positive attitudes towards exclusive breastfeeding because they believed that exclusive breastfeeding for four to six months would benefit babies, mothers and society.

## **Mothers' personal opinions on exclusive breastfeeding promotion**

Results generated from thematic analyses were summarized in Table 1. Three themes were identified, including 1) recommendation for mothers; 2) recommendation for family members, employers and colleagues, and health care professionals; and 3) recommendation for the government.

### **Theme 1. Recommendation for mothers**

- **Maintaining maternal intention and improving self-efficacy**

All participants emphasized that immigrants should maintain intention, appreciation, and confidence towards exclusive breastfeeding, and ignore negative comments received when they breastfeed in public. *"You can complain, but do not give up."* (P5). For this, mothers need to have a high degree of self-efficacy and confidence. *"My advice is not to rely on others. Otherwise, you will feel it (maintaining breastfeeding) to be hard."* (P6)

### **1.2 Creating suitable condition for exclusive breastfeeding**

Some participants suggested immigrants should prepare enough free time and have sufficient finance security, as well as ensure that they have an Irish visa or citizenship for the duration of the lactation period before delivery. *"Some people have to work, making it difficult to breastfeed exclusively."* (P5). For renters, sharing the accommodation with those who also have babies was also considered to be helpful. *"As they were experienced, they could understand your difficulties, tolerance the noise from the baby, and provide timely help when necessary."* (P14)

### **1.3 Obtaining breastfeeding knowledge**

Participants suggested mothers compare breastfeeding information objectively and rationally as there were some conflicting information. For example, a mother reflected that treatments of breast milk jaundice given by Chinese doctors and Irish doctors were completely different. *"My baby had jaundice due to breastfeeding. Chinese doctors advised to stop breastfeeding for one or two weeks. But Irish medical staff advised to increase breastfeeding frequency to promote infant digesting and wetting nappy."* (P6)

Chinese mothers were advised to ask questions proactively in hospitals, not to exclude regular home visits, and to form or join a breastfeeding group (regardless of nationality). A mother compared what she saw in China with her own experience in Ireland, and then she said: *"Don't exclude home visits because you can't speak English well... In Ireland, people pay less attention to breastfeeding (than in China). Thus, you need to ask questions proactively."* (P14)

## **Theme 2. Recommendation for family members, employers and colleagues, and health care professionals**

### **2.1 Family members' sufficient support**

Sufficient family's support given to the mothers while breastfeeding was strongly recommended. Some participants suggested that family members of Chinese mothers could come to Ireland for baby care. Some participants who focused on the important role of husbands suggested husbands adjust their working hours to adhere with the mothers' schedule. *"Family support is indispensable."* (P7)

### **2.2 Employers' support and colleagues' respect**

Some working mothers suggested employers prolong the maternity leave, provide facilities to store breast milk, and set up nurseries within or near the workplace. *"The nurseries near my workplace were convenient for me to breastfeed."* (P13)

They also hoped work colleagues, especially male colleagues, respect and support their breastfeeding decision, by avoiding giving negative comments on breastfeeding. *"I managed to continue breastfeeding exclusively after returning to work because my colleagues understood my situation well."* (P3)

### **2.3 Health care professionals' support**

### 2.3.1 Encouragement and advocacy

It was suggested that health care professionals in Irish hospitals and health centers should be stronger advocates for breastfeeding and should provide more support to mothers. *"Breastfeeding was seldom mentioned in medical advice. Doctors should encourage mothers to breastfeed."* (P1)

### 2.3.2 Multilingual specialization

Most participants suggested to train language-specific health care professionals to provide support and prenatal education for language-specific mothers, as many mothers experienced the pain of language barrier, especially difficulties in understanding the professional terminologies. *"In fact, there was still a language barrier. When I communicated with a health care professional, there were many professional terminologies which troubled me. So, I think maybe more Chinese nurses and midwives would be better."* (P6). Some suggested health care professionals provide breastfeeding support and consultation more initiatively and patiently. The health care professionals should provide mothers with the solutions to their problems correctly and in sufficient detail. *"I felt that Irish nurses or midwives were deficient in experience and specialty...which made new mothers anxious."* (P14)

### 2.3.3 Appropriate breastfeeding education combined with practice

Some participants suggested that health care professionals should teach breastfeeding knowledge appropriately to immigrant mothers. Separation of breastfeeding theory and practice was reported by many of them. They suggested to combine breastfeeding knowledge with practice in prenatal education classes. *"Primipara were taught breastfeeding knowledge, but it's difficult for them to operate in practice... Practice is needed to assist the understanding of theoretical knowledge."* (P14)

## Theme 3. Recommendation for the government

### 3.1 Setting up well-equipped breastfeeding facilities in public places

The majority of participants felt that the Irish governmental agencies should set up more breastfeeding rooms in public places (such as shopping malls), and equip these rooms with seats, water and breast milk heaters. *"There were many places for nappy changing, but breastfeeding facilities were not enough."* (P5). In addition, special groups for mothers to share experiences was also recommended.

### 3.2 Providing social welfare policies

Some participants suggested the Irish governmental agencies amend the laws and regulations to provide policy guarantees for maternity leave and financial subsidies. *"The government could give appropriate subsidies for breastfeeding, such as dozens of Euros a month."* (P11). Irish governmental agencies were suggested to consider the following new security policies for the Chinese. First, narrow down the gap of social welfare between native residents and immigrants. *"As there is a big gap of social welfare between immigrants and Irish, I do hope that Ireland could provide special social welfare policy for immigrants."* (P14). Second, provide longer-term Irish visas for the Chinese mothers migrating for education-related reasons to ensure that they could breastfeed six months in Ireland after birth. A newly arrived mother said, *"I attained language class in the second month after delivery for student visa which caused difficulties in exclusive breastfeeding."* (P14)

### **3.3 Publicity**

#### **3.3.1 Increasing intensity of publicity**

Enhancement of publicity for breastfeeding in clinics, communities and television advertisements was also suggested. *"The government still need to increase the publicity to let more mothers know that breast milk is better than bottles."* (P9)

#### **3.3.2 Enriching contents of publicity**

Improvement in the content of the publicity was suggested. Suggestions from participants were as follows. First, publicize that breastfeeding is natural, necessary and worthwhile, rather than as an alternative feeding method. Second, promote the education on benefits of breastfeeding, correct the misconceptions, and deliver the breastfeeding message *via* the community. Third, provide solutions to breastfeeding problems, such as mothers' taking medication. *"I think you can compare breast milk with formula, and present in a table."* (P9)

#### **3.3.3 Publicizing by various means**

Many participants suggested that breastfeeding should be publicized in multiple languages and in various venues. *"Add some Chinese information on breastfeeding."* (P12). *"Publicity can be made through newspapers and television."* (P5). *"Publicizing breastfeeding to Chinese immigrants by brochures may be better, because they don't like to join clubs."* (P6)

## **Discussion**

This is the first study exploring views of the Chinese immigrants on exclusive breastfeeding promotion in Ireland. Targeted recommendations were given for Chinese immigrant mothers (*e.g.* maintaining self-intention), family members (*e.g.* giving sufficient support), employers (*e.g.* providing places for breastmilk storage and breastfeeding), Irish hospitals (*e.g.* training multilingual health care professionals), and Irish governmental agencies (*e.g.* providing independent welfare policies for immigrants). Our findings provide ideas for developing breastfeeding promotion policies for immigrant population.

The important role of maternal psychological status towards breastfeeding has been reported in a number of studies [32-35]. Our findings imply that Chinese mothers' intention and self-efficacy for exclusive breastfeeding are important to the success of optimal feeding practices, and might be targeted in the breastfeeding interventions. Since studies showed that breastfeeding self-efficacy could be increased by learning from others' successful experiences [36-38], such contents might be included in prenatal education.

Studies in other countries have shown that immigrant women were more likely to return to work early than native women owing to financial reasons, which had impeded their prenatal intention to breastfeed for six months or longer [39, 40]. Therefore, as suggested by our study participants, ensuring good financial status and sufficient maternity leave for lactation before delivery may help to realize immigrants' prenatal intention of breastfeeding. Relevant policies have been released to ensure the rights of breastfeeding mothers in Ireland, such as the Maternity Protection (Amendment) Act (2004) [41], and the Equal Status Act (2000) [42]. These policies allow breastfeeding mothers to have maternity leave of no less than 18 consecutive working weeks, to breastfeed during working hours without any loss of pay, and to breastfeed in public places [41, 42]. Chinese mothers may be provided with a copy of these policies. In addition, the positive role of comfortable living environment on exclusive breastfeeding was elicited in our study. These findings have not been reported in the literature, and might be considered by Chinese immigrants in order to adhere to optimal infant feeding practices.

In the acquisition of breastfeeding knowledge, the Internet, friends and elders have been reported as useful sources among immigrants [40, 43]. Participants in our study recommended obtaining breastfeeding knowledge through reading books. In addition to handbooks, health care professionals might recommend books related to lactation to mothers through prenatal education. Participating in breastfeeding groups was also regarded as important in our study. Such a finding is consistent with an Australian study that Chinese immigrant mothers valued the support of their peers in handling infant feeding problems [40]. Breastfeeding counseling provided by health care professionals is also useful source of breastfeeding knowledge and beneficial to breastfeeding [40, 44]. However, language problems made Chinese immigrants seek help from health care professionals inactively [45], and even blocked the

transmission of breastfeeding knowledge to Chinese mothers [46]. In the current study, Chinese immigrants were encouraged to consult health care professionals actively, and to welcome regular home visits. Additionally, health interventions via smart phone might be considered owing to the popularity and efficacy of e-health [47] nowadays. Admittedly, this were not mentioned by our participants as smart phones were not commonly used at the time of our study that happened about ten years ago. Finally, judging information received based on mothers' own situation was also emphasized in this study. Such idea has not previously been reported in the literature and merits consideration by Chinese immigrants.

The important role of family support in exclusive breastfeeding practice has been recognized [48-50]. This study suggested that immigrants' family members should offer more support during lactation. It was found that most Chinese-Irish families were nuclear families where the husband was the most important source of family support and main source of financial support [18, 50]. The husband having to work contributed to the lack of involvement or support of Chinese-Irish family. Previous study indicated that increasing fathers' involvement during the infants' first year of life may improve breastfeeding up to six months of age [51]. Thus, policies ensuring paternity leave might be considered. Studies have reported that husbands' positive attitudes and support are associated with longer breastfeeding duration [52, 53]. In our study, husbands were recommended to keep positive attitudes towards exclusive breastfeeding, and actively encourage and cooperate with mothers during lactation. Prenatal education might consider targeting immigrants' family members, especially their husbands.

Participants in this study considered employers' support as important to the success of exclusive breastfeeding practices. An unfavorable workplace environment may be associated with the cessation of breastfeeding [30, 54]. Our study suggested employers should set up breastfeeding rooms and nurseries, and should ensure safe and clean places for breast milk storage. In addition, few studies have mentioned colleagues' support of breastfeeding. The cooperation of immigrants' colleagues, especially male colleagues was emphasized in this study, where it was recommended that they respect the intention and practices of breastfeeding colleagues in the work place.

The importance of health care professionals' attitudes and advices on exclusive breastfeeding among Chinese immigrants has been confirmed [40, 55]. Our study suggested that doctors' recommendations on exclusive breastfeeding during routine perinatal checks were helpful. Language barriers among immigrants presented in other studies [18, 40, 45] were also revealed in this study. Training multilingual medical staff was thus suggested. Substantial gaps in the knowledge and skills to support breastfeeding of the Irish health care professionals were reported in this study; and participants suggested strengthening the training on breastfeeding among health care professionals. Such finding has also been reported in many other countries [56, 57]. In 2003, the WHO proposed that the pre-service curriculum for

all health workers should provide appropriate information and advice on infant feeding for families [58]. In addition, this study revealed immigrants' anxiety caused by Irish health care professionals' lack of initiative, and participants suggested that they provide counselling from medical staffs. Our finding was supported by an ethnographic study, which showed that the sensitivity of health care professionals towards individual needs of immigrants and provide skilled breastfeeding counseling and assistance are beneficial to breastfeeding [44]. Finally, our participants perceived that there was little breastfeeding knowledge taught and a separation between theory and practice in the prenatal education in Ireland. A combination of theory and practice of breastfeeding should therefore be considered in prenatal education.

There is a lack of social acceptance of breastfeeding in Ireland [59]. There is no private space for lactation in the public area [60]. Mothers' feeling of embarrassment to breastfeed in public led to avoidance of breastfeeding in public [61]. Such environmental influence has an impact on breastfeeding practices for both Irish national and non-national mothers. Our participants suggested the Irish governmental agencies set up more well-equipped specific breastfeeding rooms in public places, especially in shopping malls. Although these issues have been improving, these ideas had not previously been documented, and might be of consideration for governmental agencies. In addition, setting up a special place in hospitals or health centers for breastfeeding groups was also suggested in our study, to enhance immigrants' attendance to breastfeeding groups. This proposal was in line with the WHO/ UNICEF Baby Friendly Hospital Initiative for general population breastfeeding promotion in Ireland (*i.e.* to foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic), which was found to be an effective intervention to promote the duration of breastfeeding [62]. It was reported that in 2005, 20 of the 21 maternity hospitals/units in Ireland were participating in this initiative and three had achieved the standard required to receive national 'Baby Friendly' hospital designations [20].

In 2003, the WHO recommended that government should adopt legislation and take related measures to protect the breastfeeding rights of working women [58]. Relevant policy has been introduced in Ireland. It stated that breastfeeding employees shall have maternity leave for no less than 18 weeks [41]. Since returning to work had accounts for the low rate of exclusive breastfeeding of immigrants [63-65], prolonging the current maternity leave to six months might be considered by Irish governmental agencies. Moreover, our participants suggested the Irish government amend laws and regulations, and provide policy guaranteed for immigrants in visas and social welfare. Incentive policies such as financial subsidies to mothers who breastfeed were also suggested. Lastly, considering immigrants' different cultural background, government policy should include funding for provision of a culture specific peer-counselor program, in order to normalize breastfeeding among residents of all backgrounds.

Nearly half of our participants reflected that there was insufficient publicity on breastfeeding in Ireland, and the existing publicity had little impact on an improvement in breastfeeding practices. As some publicity was even found to have incorrect information, findings of our study highlighted the importance of publicizing correct breastfeeding information. This is consistent with the WHO's recommendation that educational and media authorities should ensure the provision of accurate and complete information on appropriate infant feeding practices [58]. Besides, the concept of sustainability might be included in the breastfeeding publicities and interventions as mothers had assimilated themselves in the Western country. How breastfeeding may benefit the environment might be adopted in the publicities and/or education programs. Additionally, previous research has emphasized the importance of using multiple languages in breastfeeding campaigns [66]. Our study corroborates this finding. Few studies have reported cultural diversity in the publicity of breastfeeding. The successful experience in the Chinese-Canadian population suggested that breastfeeding information could be disseminated *via* language-specific telephone hotline [46]. Our participants also suggested publicizing breastfeeding information *via* different means adapting to the culture of targeted audiences (*e.g.* television, language-specific newspapers and brochures). The above approach should be adopted in Ireland in order to enhance the impact of breastfeeding publicity for multicultural community.

The strengths of this study include the fact that this is the first study using individual interviews to elicit ideas about exclusive breastfeeding from Chinese mothers in Ireland. Suggestion obtained in our study might inspire other countries with low breastfeeding rates, as few studies had explored immigrants' opinions in improving exclusive breastfeeding in host country. Furthermore, respondent validation was performed in this study to ensure our findings' validity.

A limitation of this study is that some ideas gained in our study might not be useful or indeed appropriate to other populations. Besides, our results may not be fully comprehensive, because we only included mothers who had breastfed exclusively for at least four months, although the rationale for this was that the opinions were being sought from mothers who had had a successful and positive experience of breastfeeding exclusively. Nonetheless, constructive opinions from immigrants' families and husbands, and immigrants who breastfed for less than four months are warranted in further studies.

## Conclusions

This study explored the opinions and recommendations of Chinese immigrant mothers with a successful experience of exclusive breastfeeding in Ireland on exclusive breastfeeding promotion among this ethnic group in Ireland. Chinese mothers' intention and self-efficacy for exclusive breastfeeding are important, and might be targeted in the breastfeeding interventions. Irish hospitals were recommended to train multilingual health professionals, and combine breastfeeding knowledge with practice in prenatal education. Employers were advised to provide hygienic venues for both breastmilk storage and

breastfeeding. The Irish governmental agencies were suggested to set up breastfeeding rooms and special places for breastfeeding groups, and enhance the intensity of breastfeeding publicity in multiple languages. Findings from this study could also be considered when designing strategies to promote exclusive breastfeeding for immigrants in other countries, particular those countries with low breastfeeding rates. Although it is important to acknowledge that the experiences of migrants may have specific challenges and consideration, it is also important to recognize that these experiences may also occur among marginalized groups in society, and therefore tell us more about society and how to support breastfeeding mothers in general.

## **Declarations**

WHO — World Health Organization

CDC — Centers for Disease Control and Prevention

The US — The United States

## **Abbreviations**

### **Ethical approval and consent to participate**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Ethical approval was obtained from the Research Ethics Committee of the Dublin Institute of Technology. All participants were informed of the purpose and confidentiality of the study. Written consent was obtained before each interview.

### **Consent for publication**

Consent for using the qualitative data and publication was obtained from each participant before each interview.

### **Availability of data and materials**

The data supporting the conclusions of this article are available from the corresponding author on reasonable request.

### **Competing interests**

The authors declare that they have no competing interests.

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## Authors' contributions

QZ conceptualized the study, recruited the participants, conducted and transcribed the interviews, analyzed the data and drafted the manuscript. HC contributed to data analysis and manuscript drafting. KMY, TMC and JMK conceptualized the study and provided critical comments on this paper. SS improved the English expression during the revision. All authors have read and approved the final manuscript.

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## Table

**Table 1. Mothers' personal opinions on exclusive breastfeeding promotion**

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**Theme 1. Recommendation for mothers**

*1.1 Maintaining maternal intention and improving self-efficacy*

*1.2 Creating suitable condition for exclusive breastfeeding*

*1.3 Obtaining breastfeeding knowledge*

**Theme 2. Recommendation for family members, employers and colleagues, and health care professionals**

*2.1 Family members' sufficient support*

*2.2 Employer' support and colleagues' respect*

*2.3 Health care professionals' support*

2.3.1 Encouragement and advocacy

2.3.2 Multilingual specialization

2.3.3 Appropriate breastfeeding education combined with practice

**Theme 3. Recommendation for the government**

*3.1 Setting up well-equipped breastfeeding facilities in public places*

*3.2 Providing social welfare policies*

*3.3 Publicity*

3.3.1 Increasing intensity of publicity

3.3.2 Enriching contents of publicity

3.3.3 Publicizing by various means

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