ORIGINAL ARTICLE

# Breastfeeding Self-efficacy and Infant Feeding Attitudes Among Overweight and Obese Expectant Mothers in Kuala Selangor, Malaysia

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## ABSTRACT

**Introduction:** Breastfeeding self-efficacy and infant feeding attitudes had shown as predictors in determining the successfulness of breastfeeding. Maternal obesity is commonly linked to poor breastfeeding outcomes. However, studies on factors influencing breastfeeding self-efficacy and infant feeding attitudes among overweight and obese mothers in Malaysia were still limited. Therefore, this study aimed to investigate determinants of breastfeeding self-efficacy and infant feeding attitudes among overweight and obese pregnant mothers. **Methods:** About 200 expecting mothers were recruited in this cross-sectional study using convenience sampling. Breastfeeding Self-Efficacy Short Form (BSES-SF) and IOWA Infant Feeding questionnaires were used as study instruments. Simple and multiple logistic regressions were deployed to analyze the determinants of breastfeeding self-efficacy and infant feeding attitudes among overweight and obese pregnant mothers. **Results:**Majority of the mothers had breastfeeding experience (71.5 %; n=143), received breastfeeding support (92.5%; n = 185) and 30.5% (n = 61) had attended antenatal class. Obese mothers had lower mean score for breastfeeding self-efficacy (51.92±12.07) and infant feeding attitudes (62.56±8.02) compared to normal-weight mothers (54.56±9.80, 63.28 ± 6.748). Breastfeeding experience and maternal age were significantly associated with breastfeeding self-efficacy and infant feeding attitudes ($p<0.05$). **Conclusion:** Breastfeeding experience and maternal age were important factors that influence breastfeeding self-efficacy and infant feeding attitudes among overweight and obese mothers. Future interventions needed to be implemented to improve breastfeeding rates targeting this population, given that they were least likely to have a successful breastfeeding.

**Keywords:** Breastfeeding self-efficacy, Infant feeding attitudes, Maternal obesity

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## INTRODUCTION

Exclusive breastfeeding for at least six months has been recommended by the World Health Organization (1) and American Academy of Paediatrics (2). In Malaysia, the rate of exclusive breastfeeding was 49.4% in 2015 and had reduced to 47.1% in 2016 (3). Although there were abundant of breastfeeding campaigns and awareness have been conducted, the rate of exclusive breastfeeding in Malaysia were still below the global target which is at least 50%. In line with a lower rate of breastfeeding, there was an increase in the prevalence of obesity from 1997 to 2015 with a proportion of 7.6% to 20.6% respectively among adult women in Malaysia (4). Apart from that, researchers such as Meedya and Otsuka et al., (5-6) found that self-efficacy is one of the factors in determining the breastfeeding outcomes. It is defined as the effort of mothers to breastfeed their babies and also mothers' behavior when facing with breastfeeding challenges (7). Albert Bandura in his Theory of Self-efficacy stated that self-efficacy is the important predictor in measuring the people's confidence towards a particular performance (8). However, a study done by Hauff, Leonard, and Rasmussen (9) found that maternal obesity will influence the breastfeeding outcomes as obese mothers tend to cease early as compared to normal-weight mothers. This could be due to the low in breastfeeding self-efficacy among them as they were more likely to experience difficulties to position and

latch their babies correctly (10). This finding was aligned with a study done by Bebendure et al. (11) which stated that obese mothers had a higher risk of early weaning and low confidence in breastfeeding.

On top of that, it is suggested positive attitudes towards breastfeeding will direct a positive impact towards a longer duration in breastfeeding (12) and will contribute to a higher rate of breastfeeding initiation among expectant mothers (13). Various studies shown obese mothers tend to have a shorter duration in breastfeeding as compared to normal-weight mothers as they prefer to bottle-feed their babies (14-15).

Therefore, the factors that influence breastfeeding self-efficacy and attitudes among overweight and obese mothers in Malaysia should be investigated as there is scarce information on investigating the determinations of low breastfeeding self-efficacy and attitudes among this population. Hence, this study was undertaken to assess breastfeeding self-efficacy and infant feeding attitudes based on Body Mass Index (BMI) categories among pregnant mothers, and to investigate the determinants of breastfeeding self-efficacy and attitudes among overweight and obese pregnant mothers. This finding will help the healthcare professionals to facilitate the interventions in breastfeeding practices targeting overweight and obese mothers in order to improve the breastfeeding outcomes.

## MATERIALS AND METHODS

### Study design and sampling

This quantitative cross-sectional study was conducted from September until December 2019 in two government health clinics located in Kuala Selangor Health Clinic and Bestari Jaya Health Clinic, Selangor, Malaysia. Selangor was chosen as a study setting as the prevalence of obesity among women in Selangor were the highest compared to other states in Malaysia and Selangor also is one of the most populated state in Malaysia with 6.47 million people in 2017 (16).

The sample size of the pregnant mothers was estimated through the G-Power Software at a power of 80%, 20% of dropout rate, and type 1 error at 0.05. Therefore, 150 pregnant mothers were recruited as an estimated of sample size. However, a total of 200 pregnant mothers were selected as prevention for non-response case. The sample of the pregnant mothers was recruited through the convenient sampling from the maternity clinics in Selangor during their antenatal examinations. The inclusion criteria were pregnant mothers at all trimester level, age between 18 years old to 45 years old, willing to participate in the study and mentally stable. The exclusion criteria were a mother with medical illness that will interferes with breastfeeding outcomes such as Human Immunodeficiency Virus (HIV) or AIDS mothers, multiple gestation, physically disability, limited literacy in English and Malay language. A written consent form was obtained, and information sheet were informed to the participants about the nature of study. Questionnaires were collected through self-administered by the participants. This study was approved by Human Research Ethics Committee and National Medical Research (NMRR) with NMRR ID number (17-1299-36056).

### Data collection

A complete sociodemographic information was obtained from participants that consisted of maternal age, ethnicity, educational background, employment, household income, parity, pre-pregnancy weight, pre-pregnancy height, pre-pregnancy BMI, gestational week, breastfeeding experience and breastfeeding support including, attendance to antenatal class. The subjects were classified into BMI categories using pre-pregnancy weight. Another two sets of self-administered BSEF-SF and IIFAS questionnaires were also given to the participants to measure their breastfeeding self-efficacy and breastfeeding attitudes. A detailed description of questionnaires used in this study is as follows:

### Breastfeeding Self-Efficacy Short Form (BSEF-SF)

The measurement of self-efficacy can help in assessing the confidence level of the breastfeeding (17). Self-efficacy is one of the important parameter in determining the outcomes of breastfeeding among mothers (5). BSEF-SF questionnaire consisted of 14-items which comprised of 2 domains which are 8-items indicated on the technical skills in breastfeeding, meanwhile 6-items indicated on the interpersonal thoughts in breastfeeding. This questionnaire is a Likert-type scale form that comprised of 5-points that were rated by the participants. The first point is written as 1 which indicated "not at all confident"; and point 5 indicated "always confident". The technical skills in breastfeeding included position of baby during lactation, sucking the nipple areola, recognition of lactation signs, and correct position of baby during lactation, and self comfort during lactation. The interpersonal thoughts included the intention to breastfeed, self motivation to breastfeed, and satisfaction of breastfeeding experience. The total scores of BSEF range from 14 to 70 points, with the higher scores which is more than 55 points indicated high breastfeeding self-efficacy; meanwhile the lower scores which is less than or equal to 55 indicated low breastfeeding self-efficacy (18). Cronbach's alpha coefficient of internal consistency for Malay versions of BSEF questionnaire that were tested among breastfeeding mothers was 0.94 (19).

### IOWA Infant Feeding Attitudes (IIFAS)

IIFAS questionnaire was developed by Mora et al. (20) and was used as a parameter to measure the knowledge of mothers towards breastfeeding. IIFAS questionnaire consisted of 17-items that comprised of two categories which are eight items indicated positive attitudes to breastfeeding; meanwhile, nine items indicated negative attitudes to breastfeeding. This questionnaire is a Likert-type scale form that comprised of 5-points that

were rated by the participants. The first point is written as 1 which indicated "strongly disagree"; and point 5 indicated "strongly agree". Items that favour to formula feeding were reverse scored. The scores were computed by means of individual items. The total scores of IIFAS range from 17 to 85 points with the higher scores which is more than 65 points indicated positive attitudes to breastfeeding; meanwhile the lower scores which is less than or equal to 65 indicated negative attitudes to breastfeeding (21). The Cronbach's alpha coefficient of internal consistency for Malay versions of IIFAS questionnaire that were tested among mothers with at least 1 child was 0.77 and it is valid and reliable to be measure among Malaysian women (22). The IIFAS questionnaire also had been tested in Malay versions among mothers in Malaysia (23).

### Data analysis

Data was analysed using Statistical Package for the Social Sciences (SPSS) version 22.0. The collected sociodemograhic data were analyzed using descriptive statistics. Meanwhile, the total scores of BSEF and IIFAS questionnaire were computed by Mean (M) and Standard Deviation (SD). Determinants of BSEF and IIFAS among overweight and obese pregnant mothers were further analyzed using Simple Logistics Regression (SLR) and Multiple Logistics Regression (MLR). For the SLR analysis, statistical significance was set at 0.25 in which factors that has a p-value of less than 0.25 was selected to be analyzed in the MLR analysis. For the MLR analysis, statistical significance was set at 0.05 in which the factors that had p-value of less than 0.05 was selected as a determinant for BSEF and IIFAS among overweight and obese pregnant mothers.

## RESULTS

### Sample Characteristics

Table I present the sociodemographic characteristics of the participants. Among all the participants, 56% (n = 112) were less than 30 years old, 78.5% (n=78.5) were Bumiputera, 50.5% (n=101) had more than 12 years of education, 58.0% (n=116) were employed, 86.0% (n=172) had less than RM 5000 of household income, 39.5% (n=79) were at the third trimester, 70.5% (n=141) were multiparous, and all of them carried a singleton baby. Meanwhile for pre-pregnancy BMI, most of pregnant mothers had normal BMI with 48.5% (n=97), followed by 31.5% (n=63) were overweight, 12.5% (n=25) were obese, and 7.5% (n=5) were underweight. For maternal knowledge in breastfeeding, among all the participants, 71.5% (n=143) reported had breastfeeding experience, 92.5% (n=185) had received breastfeeding support, 30.5% (n=61) had attended antenatal class, and 51.5% (n=103) preferred notes, pamphlet, class, seminar, demonstration, counseling as a platform for getting the breastfeeding interventions.

### The level of BSEF and IIFAS based on pre-pregnancy BMI level among pregnant mothers

Table II present the level of BSEF and IIFAS among pregnant mothers based on pre-pregnancy BMI level (N=200). For the level of BSEF, by comparing the mean score and standard deviation of breastfeeding self-efficacy based on BMI levels, a higher score was seen among overweight mothers (55.83 ± 10.54), followed by normal BMI mothers (54.56±9.80), obese mothers

**Table I Sociodemographic Characteristics of the Participants (N = 200)**

| Characteristics | n (%) | Mean ± SD |
|---|---|---|
| Maternal Age | | |
| ≤30 | 112 (56) | |
| >30 | 88 (44) | |
| Ethnicity | | |
| Bumiputera | 157 (78.5) | |
| Non-Bumiputera | 43 (21.5) | |
| Educational Period | | |
| ≤12 years | 99 (49.5) | |
| >12 years | 101 (50.5) | |
| Occupation | | |
| Employed | 116 (58.0) | |
| Not working | 84 (42.0) | |
| Household Income | | |
| ≤RM 5000 | 172 (86.0) | |
| >RM 5000 | 28 (14.0) | |
| Trimester | | |
| 1st trimester | 60 (30.0) | |
| 2nd trimester | 61 (30.5) | |
| 3rd trimester | 79 (39.5) | |
| Parity | | |
| Primiparous | 59 (29.5) | |
| Multiparous | 141 (70.5) | |
| Prepregnancy BMI (kg/m$^2$) | | |
| Underweight | 15 (7.5) | 17.18 ± 1.0788 |
| Normal | 97 (48.5) | |
| Overweight | 63 (31.5) | 21.69 ± 1.7516 |
| Obese | 25 (12.5) | 26.90 ± 1.2621 |
| | | 39.98 ± 34.5665 |
| Pregnancy Gestation | | |
| Singleton baby | 200 (100) | |

CONTINUED

**Table I Sociodemographic Characteristics of the Participants (N = 200) (CONT.)**

| Characteristics | n (%) | Mean ± SD |
|---|---|---|
| **Maternal knowledge on breastfeeding** | | |
| Breastfeeding Experience | | |
| With experience | 143 (71.5) | |
| Without experience | 57 (28.5) | |
| Received Breastfeeding Support | | |
| Yes | 185 (92.5) | |
| No | 15 (7.5) | |
| Attending Antenatal Class | | |
| Yes | 61 (30.5) | |
| No | 139 (69.5) | |
| Preferences for the Breastfeeding Interventions | | |
| Notes, pamphlet, class, seminar, demonstration, counseling | 103 (51.5) | |
| Social media, video, television | 82 (41.0) | |
| No | 15 (7.5) | |

**Table II The scores of BSES-SF and IIFAS among pregnant mothers based on pre-pregnancy BMI level (N = 200)**

| Characteristics | n | % | Mean SD |
|---|---|---|---|
| Level of BSEF based on BMI level | | | |
| Pre-pregnancy BMI | | | |
| Underweight | 15 | 7.5 | 51.40 11.018 |
| Normal | 97 | 48.5 | 54.56 9.796 |
| Overweight | 63 | 31.5 | 55.83 10.542 |
| Obese | 25 | 12.5 | 51.92 12.066 |
| Total | 200 | 100 | 54.40 10.447 |
| Level of IIFAS based on BMI level | | | |
| Pre-pregnancy BMI | | | |
| Underweight | 15 | 7.5 | 61.53 7.855 |
| Normal | 97 | 48.5 | 63.28 6.748 |
| Overweight | 63 | 31.5 | 63.79 7.488 |
| Obese | 25 | 12.5 | 62.56 8.016 |
| Total | 200 | 100 | 63.22 7.204 |

(51.92 ± 12.07), and underweight mothers (51.40 ± 11.02). However, majority of the pregnant mothers were more inclined towards low in breastfeeding self-efficacy with mean score of less than 55.

Meanwhile, by comparing the mean score and standard deviation of IOWA Infant Feeding Attitudes (IIFAS) based on BMI levels, a higher score was observed among overweight mothers (63.79 ± 7.49), followed by normal BMI mothers (63.28 ± 6.75), obese mothers (62.56 ± 8.02), and underweight mothers (61.53 ± 7.86). However, majority of the pregnant mothers were more inclined towards negative attitudes in breastfeeding as their mean score were less than 65.

**Determinants of BSEF and IIFAS among Overweight and Obese Pregnant Mothers.**

Table III present the bivariate analysis of factors associated with breastfeeding self-efficacy among overweight and obese pregnant mothers. For the crude analysis, the variables of ethnicity, maternal occupation, parity, breastfeeding experience, and received breastfeeding support had p value of less than 0.25. Therefore, these variables were selected to be analyzed in the adjusted analysis. However, only breastfeeding experience was remained in the model of analysis with p value of less than 0.05.

Pregnant mothers whom previously had breastfeeding experience were 5.74 times more likely to have high breastfeeding self-efficacy than those without experience in breastfeeding (COR: 5.741, 95% of CI of COR: 1.75 - 18.82). Even though after adjustment for confounding variables, mothers with previous experience in breastfeeding still 5.72 times more likely to have high breastfeeding self-efficacy than those without experience (AOR: 5.723, 95% of CI of AOR: 1.72 - 19.06). Hence, previous experience in breastfeeding was associated with breastfeeding self-efficacy among overweight and obese mothers (p = .004).

Table IV present the bivariate analysis of factors associated with Infant Feeding Attitudes among overweight and obese pregnant mothers. For the crude analysis, the variables of age, ethnicity, household income, parity, breastfeeding experience, received breastfeeding support, and preferences for breastfeeding had p value of less than 0.25. Therefore, these variables were selected to be analyzed in the adjusted analysis. However, only variable of maternal age remained in the model of analysis with p value of less than 0.05. Pregnant mothers with less than 30 years old were 2.65 times more likely prone towards positive attitudes to breastfeeding than those mothers with age of more than 30 years old (COR: 2.656, 95% of CI of COR: 1.108 - 6.367). Even after adjustment for confounding variables, mothers with age of less than 30 years old were 2.94 times more inclined towards positive attitudes to breastfeeding than those without experience (AOR: 2.940, 95% of CI of AOR: 1.196 - 7.228). Hence, maternal age was associated with Infant Feeding Attitudes among overweight and

**Table III Bivariate analysis of factors associated with breastfeeding self-efficacy among overweight and obese pregnant mothers (N=88)**

| Variables | % (n) | Crude p value | COR (95% CI) | AOR (95% CI) | Adjusted p value |
|---|---|---|---|---|---|
| Age | | | | | |
| 30 years old | 42 | .503 | 1.333(0.57, 3.09) | | |
| >30 years old | 46 | | 1.00 | | |
| Ethnic group | | | | | |
| Bumiputera | 72 | .180* | 2.200 (0.69, 6.973) | | |
| Non-Bumiputera | 16 | | 1.00 | | |
| Educational period | | | | | |
| >12 years | 44 | .286 | 1.582(0.68, 3.677) | | |
| 12 years | 44 | | 1.00 | | |
| Occupation | | | | | |
| Not working | 35 | .109* | 2.032(0.85, 4.83) | | |
| Employed | 53 | | 1.00 | | |
| Household income | | | | | |
| RM 5000 | 74 | .377 | 1.705(0.52, 5.57) | | |
| RM 5000 | 14 | | 1.00 | | |
| Parity status | | | | | |
| Multiparous | 66 | .013* | 4.080(1.34, 12.36) | | |
| Primiparous | 22 | | 1.00 | | |
| **Maternal knowledge** | | | | | |
| Breastfeeding experience | | | | | |
| With experience | 66 | .004* | 5.741(1.75, 18.82) | 5.723(1.72, 19.06) | **.004** |
| Without experience | 22 | | 1.00 | | |
| Received breastfeeding support | | | | | |
| Yes | 79 | .140* | 3.412(0.66, 17.45) | | |
| No | 9 | | 1.00 | | |
| Attending antenatal class | | | | | |
| Yes | 27 | .264 | 1.683(0.67, 4.19) | | |
| No | 61 | | 1.00 | | |

[a] CI - Confidence Interval, COR - Crude odds ratio, AOR - Adjusted odds ratio,
*Significance at p value < 0.25 for COR
All variables with statistical significance at p value < 0.05 for AOR were in bold

**Table IV Bivariate analysis of factors associated with Infant Feeding Attitudes among overweight and obese pregnant mothers (N=88)**

| Variables | % (n) | Crude p value | COR (95% CI) | AOR (95% CI) | Adjusted p value |
|---|---|---|---|---|---|
| Age | | | | | |
| 30 years old | 42 | .029* | 2.656(1.10, 6.36) | 2.940(1.19, 7.22) | **.019** |
| >30 years old | 46 | | 1.00 | | |
| Ethnic group | | | | | |
| Bumiputera | 72 | .113* | 0.373(0.11, 1.26) | | |
| Non-Bumiputera | 16 | | 1.00 | | |
| Educational period | | | | | |
| >12 years | 44 | .830 | 1.000(0.43, 2.32) | | |
| 12 years | 44 | | 1.00 | | |
| Occupation | | | | | |
| Not working | 35 | .625 | 0.806(0.33, 1.91) | | |
| Employed | 53 | | 1.00 | | |
| Household income | | | | | |
| RM 5000 | 74 | .255* | 1.956(0.61, 6.21) | | |
| RM 5000 | 14 | | 1.00 | | |
| Parity status | | | | | |
| Multiparous | 66 | .087* | 0.398(0.13, 1.14) | | |
| Primiparous | 22 | | 1.00 | | |
| **Maternal knowledge** | | | | | |
| Breastfeeding experience | | | | | |
| With experience | 66 | .087* | 2.510(0.87, 7.20) | | |
| Without experience | 22 | | 1.00 | | |
| Received breastfeeding support | | | | | |
| Yes | 79 | .072* | 7.048(0.84, 59.02) | | |
| No | 9 | | 1.00 | | |
| Attending antenatal class | | | | | |
| Yes | 27 | .874 | 1.077(0.43, 2.68) | | |
| No | 61 | | 1.00 | | |
| Preferences for breastfeeding | | | | | |
| Yes | 80 | .100* | 6.023(0.70, 51.24) | | |
| No | 8 | | | | |

[a] CI - Confidence Interval, COR - Crude odds ratio, AOR - Adjusted odds ratio,
*Significance at p value < 0.25 for COR
All variables with statistical significance at p value < 0.05 for AOR were in bold

obese mothers (p = .019).

## DISCUSSION

**The level of BSEF and IIFAS based on pre-pregnancy BMI level among pregnant mothers.**

Pregnant mothers with higher BMI of more than 25 kg/m2 may have lower score of breastfeeding self-efficacy than normal weight mothers because they have were less likely to initiate and maintain breastfeeding psychologically (10, 14, 29). They were also associated with low self-image and confidence (10). This is consistent with the finding from Brown, Rance, and Warren (24) stated that low in body image among obese mothers due to larger breast anatomy cause a reduction in breastfeeding self-efficacy among these mothers. This condition also caused them to has difficulties to position and latching their babies (10). Besides, obese mothers had a lower mean score in breastfeeding self-efficacy due to insufficiency in milk production as they experienced a delay in lactogenesis II (25-26). A reduction in hormonal response of prolactin among obese mothers may result in delay in lactogenesis II and early cessation of breastfeeding (10, 27). This finding was in line with a study done by Liu, Smith, Dobre, and Ferguson (28) stated that, obese mothers tend to discontinue breastfeeding their babies within a period of less than 6 months. Mothers with higher BMI were suggested to have low determination in succeeding breastfeeding practices, this could result from limited social support from relatives and friends within similar wavelength (9).

Meanwhile, for the Infant Feeding Attitudes, obese mothers tend to have lower mean score in IIFAS compared to normal mothers as they tend to use infant feeding formula as they believed that the infant formula had similar benefits as human milk (30). Besides, the reason of using infant formula among obese mothers also was due to the feeling of uncomfortable to breastfeed at the public area (31). Nevertheless, findings from this study shown that all pregnant mothers at all BMI categories were more inclined towards negative attitudes to breastfeeding as they experience insufficiency in milk production which is the most common problematic issue that cause mothers to prefer formula feeding than breastfeeding (30, 32). Besides, insufficiency of milk production also not only due to the body image, but also due to infrequent of lactation to the baby which cause poor stimulation of milk production (33).

**Determinants of BSEF and IIFAS among Overweight and Obese Pregnant Mothers.**

Previous experience in breastfeeding was significantly associated with breastfeeding self-efficacy among overweight and obese mothers. This finding was aligned with a study done by Mohseni et al. (34) which stated that pregnant mothers with previous experience in breastfeeding has higher confidence to breastfeed their babies than those without experience. They found that, when first-time mothers that previously had no experience in breastfeeding being exposed to the breastfeeding interventions, most of them had shown high self-efficacy in breastfeeding as compared to those first-time mothers who had never being expose to breastfeeding interventions. Another studies also found that pregnant mothers with previous experience in breastfeeding had high breastfeeding self-efficacy than those without experience (35-37). In addition, Holbrook, White, Heyman, and Wojcicki, (38) in their cohort study found that pregnant mothers with previous experience in breastfeeding were 8.3 times more likely to initiate breastfeeding than those without experience (p=.004). This was also aligned with findings from Nursan, Dilek, and Sevin (39) that was conducted among 152 mothers to examine the factors that affect the breastfeeding self-efficacy. They found exposure to breastfeeding training among mothers had significantly influence their self-efficacy in breastfeeding (p = .01). On top of that, mothers with high educational background, had exposure to breastfeeding interventions, good knowledge in breastfeeding and seek for breastfeeding support were also more likely to have high confidence in breastfeeding (44).

Meanwhile, maternal age had shown significant association with infant feeding attitudes among overweight and obese mothers (p=.019). This finding was aligned with a cohort study done by Abdul Hamid (40) among expectant mothers who were obese. From the finding, they found that maternal age was significantly associated with the method of infant feeding (p=.022). However, additional studies found that not only maternal age was significantly associated with infant feeding attitudes, but tiredness, income, parity, educational level, breastfeeding support, occupation, breastfeeding experience, and the availability of private space for breastfeeding also influence the attitudes to breastfeeding (15, 41-43).

## CONCLUSION

Overall findings shown that, obese mothers had a lowest mean score of BSEF as compared to normal-weight mothers with mean score of 51.92 and 54.56 respectively. They also had demonstrated a lowest mean score of IIFAS as compared to normal-weight mothers with mean score of 62.56 and 63.28 respectively. However, breastfeeding experience and maternal age had shown significant association with BSEF and IIFAS among mothers with BMI of more than 25 kg/m2 with p value of .004 and .019 respectively.

Findings from this study added new knowledge to existing literature in the aspect of breastfeeding self-efficacy, and infant feeding attitudes in relation to pre-pregnancy BMI among obese pregnant mothers. However, due to the small size of study area, findings from this study were not able to represents the whole population of

mothers in Selangor. Therefore, future studies should be conducted in a large scale to represent the whole population in Selangor. Besides, the small sample size of overweight and obese pregnant mothers as compared to normal BMI mothers might impact the failure to reach the statistical significance in the analyses. In addition, breastfeeding interventions targeting this population should be implemented with regards to the identified determinants to increase their confidence and attitudes towards breastfeeding and therefore, could contribute to positive breastfeeding outcomes.

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