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Original Research

Exploring the Relationship Between Awareness of Breastfeeding Benefits and Breastfeeding Duration Among Employed Mothers in Taiwan's Electronics Industry

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Abstract

Background: Breastfeeding offers substantial health benefits; however, many mothers discontinue early, particularly after returning to work. This study examined the associations between awareness of breastfeeding benefits, workplace support, and breastfeeding duration, with a focus on factors associated with breastfeeding beyond 6 months. **Methods**: A cross-sectional study was conducted among 608 employed mothers at a Taiwanese electronics company, which was equipped with certified lactation rooms. The questionnaire collected data on demographics, employment characteristics, breastfeeding behavior after returning to work, perceptions of workplace support, and awareness of breastfeeding benefits. **Results**: While 91.3% of participants breastfed during maternity leave, 49.2% discontinued breastfeeding upon returning to work. After returning to work, 23.5% of participants continued breastfeeding for 1–6 months, and 27.3% for more than 6 months. Access to lactation rooms and the ability to take breast-pumping breaks were associated with higher rates of both short-term (1–6 months) and long-term (beyond 6 months) breastfeeding. Colleague support (odds ratio [OR] = 2.49, 95% confidence interval [CI] = 1.04–6.09, $p = 0.0410$) was significantly associated with continued breastfeeding during the first 6 months after returning to work, but not with breastfeeding beyond 6 months. Participants who agreed that taking breast-pumping breaks would help continue breastfeeding (OR = 6.84, 95% CI = 1.06–48.79, $p = 0.0481$) were more likely to persist in breastfeeding beyond 6 months. Additionally, greater awareness of the benefits of breastfeeding was associated with a higher likelihood of breastfeeding beyond 6 months compared to 1–6 months (OR = 1.10, 95% CI = 1.01–2.00, $p = 0.0390$). **Conclusions**: This study identified associations between workplace support, awareness of breastfeeding benefits, and breastfeeding duration among employed mothers. Although awareness of breastfeeding benefits was associated with continued breastfeeding after returning to work, workplace support—such as access to lactation rooms, breast-pumping breaks, and social support—was more strongly associated with longer breastfeeding duration. As a retrospective survey, this study may be subject to recall bias. Future prospective research is recommended to further explore these relationships.

Keywords: awareness of breastfeeding benefits; breastfeeding duration; breastfeeding-friendly support; female workers

1. Introduction

Breastfeeding provides substantial benefits for both infants and mothers [1]. For infants, it enhances immune protection, supports cognitive development, and lowers the risk of chronic diseases; for mothers, it reduces the risk of certain cancers and postpartum depression [1–10]. Despite these well-documented advantages, many mothers discontinue breastfeeding earlier than recommended, particularly upon returning to paid employment [11,12]. Working mothers face considerable challenges, including mental and physical health issues, work-life balance, job satisfaction, family and colleague support, as well as the availability of maternity leave and workplace policies. These factors significantly influence their ability to sustain breastfeeding [13–19].

Studies have shown that supportive workplace environments—including adequate lactation breaks, access to private spaces for milk expression, and dedicated lactation rooms—are positively associated with mothers' intentions and ability to continue breastfeeding [19–22]. While such resources can serve as external incentives to prolong breastfeeding [20–22], many women still struggle to maintain breastfeeding due to persistent work demands, suggesting that workplace provisions alone may not be sufficient [11,23].

Beyond structural and environmental factors, recent studies have examined the role of internal psychological drivers, particularly motivation, in shaping breastfeeding behaviors. Drawing on Self-Determination Theory (SDT), a recent study conducted in Israel found that autonomous motivation—characterized by an internalized sense of value and interest in breastfeeding—was positively associated with maternal well-being and breastfeeding self-efficacy [24]. This form of motivation enhances persistence and satisfaction and may be a key determinant in the continuation of breastfeeding, even in the face of external pressures [25]. Moreover, the study found that higher education levels are often linked to greater breastfeeding motivation [26], suggesting that cognitive and motivational factors influence breastfeeding practices.

Another critical but underexplored factor is mothers' knowledge and awareness of breastfeeding benefits. Parents who are more informed about the health implications of breastfeeding are more likely to initiate and maintain the practice [27–29]. In the United States, greater awareness of the maternal health benefits of breastfeeding has been shown to correlate with intentions to breastfeed for at least 12 months [28]. Structured counseling interventions that emphasize these benefits have also significantly increased maternal awareness and determination to breastfeed [29]. Importantly, a mother's beliefs and perceptions about breastfeeding may have a stronger influence on breastfeeding duration than the timing of her return to work [30]. These findings suggest that internalized knowledge and value attribution may play a critical role in shaping breastfeeding outcomes beyond external constraints. However, limited research has examined how such awareness influences sustained breastfeeding among employed mothers, indicating a need for further investigation.

To address this gap, our study examines the association between awareness of breastfeeding benefits and breastfeeding duration among employed mothers in a female-dominated electronics manufacturing company in Taiwan that offers breastfeeding-friendly policies, including breast-pumping breaks and dedicated breastfeeding rooms. The analysis explores how awareness of breastfeeding benefits relates to prolonged breastfeeding after returning to work while accounting for employment-related factors such as shift work and workload. Additionally, the study investigates whether mothers' perceptions of workplace breastfeeding support are associated with extended breastfeeding duration. The findings could enhance the understanding of these relationships and inform more effective workplace support systems for breastfeeding mothers.

2. Subjects and Methods

2.1 Research Setting and Subjects

This cross-sectional study, conducted between August 1, 2011, and April 30, 2012, explored breastfeeding-friendly workplace conditions and intentions to continue breastfeeding among employed mothers in Taiwan. The detailed methodology is described elsewhere [20,21]. The study was conducted at Company C, a large electronics manufacturer located in the Tainan Science Park in southern Taiwan. Company C employs over 20,000 individuals, 45% of whom are women, across 10 manufacturing plants. Company C was selected for two primary reasons. First, it received funding from the Department of Health to establish lactation rooms, offering a valuable context to examine perceived workplace support in a breastfeeding-friendly environment. Second, the company employs a substantial number of young female workers, including both office and clean-room staff, allowing for analysis across diverse job roles.

At the time of the study, each plant provided at least four lactation rooms, each equipped with a table, chair, sink, electrical outlets, and a refrigerator. Working mothers with children under two years of age were granted an additional 60 minutes per day for breastfeeding, typically divided into two 30-minute breast-pumping breaks and regular break time. The researcher conducted site visits and assessed the facilities, categorizing lactation rooms into two types: dedicated spaces and shared spaces. Shared spaces lacked exclusive use and were often separated by curtains, serving multiple functions, such as a public health center.

The researcher initially contacted Company C to request participation in the study. A formal letter outlining the research project was sent, followed by an in-person meeting with the director of the Employee Health Management Department to explain the study's objectives. Upon receiving institutional approval, occupational and environmental health nurses assisted in distributing and collecting self-administered questionnaires from 981 female employees who had taken maternity leave between January 2009 and January 2011. These participants were identified through the Human Resources Department. A total of 715 valid questionnaires were returned. To minimize potential bias related to lactation room type—specifically, the influence of shared spaces on post-return breastfeeding intentions—107 respondents who had access only to shared lactation rooms were excluded. Consequently, the final analysis included 608 employed mothers with access to dedicated, independent lactation rooms. The study was approved by the Ethics Committee of I-Shou University (Protocol number: ISU-IRB-100-09).

2.2 Assessment Instruments and Definitions

Data were collected through a structured questionnaire that covered female employees' demographic information, employment characteristics, breastfeeding behaviors after returning to work, perceived workplace support for breastfeeding, and awareness of breastfeeding benefits when raising their most recently born child. On average, participants required approximately 15 minutes to complete the survey.

2.2.1 Demographics and Employment Characteristics

Demographic and employment-related information was collected through self-reported questionnaires. A demographic inventory captured participants' age, education level, spouse's education, and number and ages of children. Education level served as a proxy for social class and was categorized as either (1) high school or below or (2) college or above.

Employment characteristics included work setting (office or clean room), shift work status (whether participants worked shifts after returning to work; yes/no), and average daily work hours (categorized as 8 hours or 9–14 hours). In addition, participants were asked whether their most recent child was born preterm (yes/no) or had low birth weight

(yes/no). This study defined prematurity as birth before 37 completed weeks of gestation and low birth weight as less than 2500 grams at birth.

2.2.2 Use of Breast-pumping Breaks Policy

In Taiwan, while the law mandates eight weeks of maternity leave for female employees, breastfeeding-friendly workplace policies, such as providing breast-pumping breaks and lactation rooms, are recommended but not legally required. In the study setting, the company voluntarily implemented breastfeeding-supportive measures. Working mothers were permitted to take two paid breast-pumping breaks per workday, each lasting approximately 30 minutes, in addition to their regular meal breaks. Employees were allowed to bring their own breast pumps and utilize designated lactation rooms provided by the employer. To assess utilization, participants were asked whether they usually used the breast-pumping breaks (defined as use on more than four days per week) to express milk after returning to work. Participants were asked, "Did you usually (frequency of the breast-pumping breaks was more than four days a week) use the breast-pumping breaks to express breast milk for children after returning to work (yes/no)?"

2.2.3 Employees' Perception of Breastfeeding-friendly Support

Employees were asked a series of questions to assess their perception of workplace breastfeeding-friendly policies and support. The questions addressed their awareness of lactation room availability and knowledge of the breast-pumping break policy. Participants were also asked whether they had used the lactation room and the pumping break policy after returning to work and whether they felt supported or encouraged by colleagues, supervisors, and environmental health nurses. Additionally, they were asked whether they felt embarrassed when using breast-pumping breaks and whether they believed that taking breast-pumping breaks could help them continue breastfeeding. They were also asked if they believed that breast-pumping breaks would reduce their work efficiency and whether they thought such breaks would affect their supervisor's assessment of their performance.

2.2.4 Employees' Awareness of the Benefits of Breastfeeding

An employee's awareness of the benefits of breastfeeding for the mother, infant, and employer was assessed using a checklist. Participants were asked whether they had heard of these breastfeeding benefits (yes/no). The benefits generated from findings in previous studies [1–10] are listed as items in Table 1.

2.3 Statistical Analysis

This study examined the association between awareness of breastfeeding benefits and prolonged breastfeeding among employed mothers after returning to work while also accounting for other employment-related factors. The primary variables of interest included demographic characteristics, employment conditions, perceptions of breastfeeding-friendly policies (such as awareness and use of lactation rooms and breast-pumping break policies), perceived support (encouragement from colleagues, supervisors, and environmental health nurses), and workplace climate (feelings of embarrassment or reduced efficiency when using breast-pumping breaks, and concerns about performance evaluations by supervisors when using these breaks). The study assessed whether mothers continued breastfeeding for at least one month after returning to work, with those who did not breastfeed during maternity leave or who stopped within one month of returning to work serving as the reference group in the logistic regression analyses.

Descriptive statistics were used to summarize participant characteristics. Associations between key variables and breastfeeding continuation were examined using chi-square tests and logistic regression analyses. A p-value of <0.05 was considered statistically significant.

Three multivariate logistic regression models were developed. Model 1 compared mothers who breastfed for 1–6 months with those who did not breastfeed after returning to work. Model 2 compared mothers who breastfed for more than six months with those who did not breastfeed at all. Model 3 compared mothers who breastfed for more than six months with those who breastfed for 1–6 months. All models were estimated using the maximum likelihood method. Variables included in this study were selected based on prior literature and theoretical relevance, and variables were selected based on their statistical significance in univariate analyses ($p < 0.05$). Each model was adjusted for potential confounders, including education level, worksite (office vs. clean room), shift work, daily work hours, and breastfeeding during maternity leave. The results are presented as odds ratios (ORs) with 95% confidence intervals (CIs). All statistical analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, NC, USA).

Additionally, awareness of breastfeeding benefits was assessed using 14 items derived from well-established literature addressing maternal, infant, and work-related benefits of breastfeeding. Each item was coded dichotomously (yes = 1, no = 0), and the total awareness score ranged from 0 to 14, representing the cumulative level of knowledge. This score was entered as a continuous variable in three multivariate logistic regression models to examine its association with extended breastfeeding. The mean score was 10.96 $\pm$ 3.01, indicating generally high awareness among participants. The internal reliability of the 14-item scale, assessed using Cronbach's α, was 0.81, indicating good internal consistency.

Table 1. Association between awareness of breastfeeding benefits and breastfeeding continuation after returning to work among working mothers.

Thematic category	Awareness of benefit	Continue to breastfeed after returning to work (1%)			p-value for χ^2 test
	N (%)	Stopped	1–6 months	>6 months	
1. Increases caloric expenditure	556 (91.5)	263 (87.9)	135 (94.4)	158 (95.2)	0.0100
2. Aids uterine involution	553 (90.9)	263 (87.9)	131 (91.6)	159 (95.7)	0.0180
3. Reduces the likelihood of pregnancy	472 (77.6)	222 (74.2)	104 (72.3)	146 (87.9)	0.0009
4. Reduces cancer/osteoporosis risk	453 (74.5)	209 (69.9)	107 (74.8)	137 (82.5)	0.0112
5. Mood enhancement via prolactin/oxytocin	412 (67.7)	202 (67.5)	90 (62.9)	120 (72.2)	0.2136
6. Special bonding with the infant	567 (93.2)	277 (92.6)	132 (92.3)	158 (95.1)	0.5062
7. Sense of doing something for the infant while working	575 (94.5)	280 (93.6)	135 (94.4)	160 (96.3)	0.4558
8. Economic savings (vs. formula)	591 (97.2)	289 (96.6)	137 (95.8)	165 (99.4)	0.1164
9. Fewer child illness-related visits	499 (82.0)	239 (79.9)	119 (83.2)	141 (84.9)	0.3707
10. Lower infectious disease incidence	381 (62.6)	193 (64.5)	86 (60.1)	102 (61.4)	0.6233
11. Enhanced oral development	405 (66.6)	192 (64.2)	95 (66.4)	118 (71.0)	0.3217
12. Improved physical/behavioral development	424 (69.7)	204 (68.2)	95 (66.4)	125 (75.3)	0.1740
13. Higher IQ scores	454 (74.6)	220 (73.5)	106 (74.1)	128 (77.1)	0.6933
14. Fewer work absences due to child illness	351 (57.7)	154 (51.5)	83 (58.0)	114 (68.6)	0.0016

3. Results

This study analyzed 608 employed mothers with access to qualified, independent lactation rooms. Table 1 illustrates the correlation between working mothers' awareness of breastfeeding benefits and breastfeeding continuation upon their return to work. The study indicates that awareness of certain benefits, including increased caloric expenditure (item 1, $p = 0.0100$), aiding uterine involution (item 2, $p = 0.0180$), reduced likelihood of pregnancy (item 3, $p = 0.0009$), lower risk of diseases such as breast cancer, endometrial cancer, ovarian cancer, and osteoporosis (item 4, $p = 0.0112$), and fewer work absences due to child illness, which contributes to improved work productivity (item 14, $p = 0.0016$), is significantly associated with prolonged breastfeeding duration after returning to work.

The characteristics of these mothers and their breastfeeding behaviors after returning to work were compared across various demographic and employment-related factors, as presented in Table 2. Most participants (77.1%) were over 30 years of age, and 72.2% held a college degree or higher. The incidences of preterm birth and low birth weight were 10.0% and 6.9%, respectively. Shift workers accounted for 54.0% of the participants, while 49.5% worked in clean rooms. The majority (91.4%) worked more than 8 hours per day on average. Among these employed mothers, 91.3% breastfed during maternity leave; however, after returning to work, 49.2% (n = 299) discontinued breastfeeding immediately. The breastfeeding rates were 23.5% (n = 143) for 1–6 months and 27.3% (n = 166) for more than 6 months after returning to work. Although 97.9% were aware of the lactation room, only 51.2% reported using it after returning to work. Similarly, while 79.3% were aware of breast pumping breaks, only 37.5% reported using them after returning to work. Mothers with a college education or higher ($p < 0.0001$), those working in offices ($p < 0.0001$), those not working shifts ($p < 0.0001$), those working 8 hours per day ($p = 0.0403$), those who breastfed during maternity leave ($p < 0.0001$), those who used the lactation room ($p < 0.0001$), and those who were aware of ($p = 0.0013$) or used ($p < 0.0001$) breast-pumping breaks were more likely to continue breastfeeding beyond 6 months.

Table 3 presents the association between employees' perceived breastfeeding-friendly support and breastfeeding continuation after returning to work among employed mothers. Supportive workplace environments, particularly receiving encouragement from colleagues, supervisors, and environmental health nurses to use the lactation room and breast-pumping breaks, were significantly associated with continued breastfeeding ($p < 0.05$ for all factors). Feelings of embarrassment about using breast-pumping breaks ($p = 0.2735$) and the belief that taking breast-pumping breaks would negatively impact a supervisor's performance evaluation ($p = 0.2823$) were not significantly associated with breastfeeding continuation. However, agreeing that breast-pumping breaks can assist mothers in continuing breastfeeding was positively associated with continuation ($p = 0.0010$), while concerns about reduced work efficiency were negatively associated with continued breastfeeding ($p = 0.0046$).

The results of the multiple logistic regression analysis evaluating independent predictors of the intention to continue breastfeeding after returning to work are shown in Table 4. To identify factors influencing the continuation of breastfeeding for 1–6 months (Model 1), employed mothers who had used a lactation room (OR = 44.74, 95% CI: 20.31–107.44, $p < 0.0001$), took breast-pumping breaks (OR = 3.30, 95% CI: 1.37–8.03, $p = 0.0077$), and received encour-

Table 2. Continued breastfeeding behavior among employed mothers by demographic characteristics, employment factors, and breastfeeding-friendly policy implementation (n = 608).

Variables		Total (%)	Continue to breastfeed after returning to work (%)			p-value for χ^2 test
			Stopped	1–6 months	>6 months	
			(n = 299)	(n = 143)	(n = 166)	
Age (years)	<30	139 (22.9)	75 (25.1)	36 (25.2)	28 (16.9)	0.0976
	≥30	469 (77.1)	224 (74.9)	107 (74.8)	138 (83.1)	
Education	≥College	439 (72.2)	190 (63.5)	109 (76.2)	140 (84.3)	<0.0001
	≤High school	169 (27.8)	109 (36.5)	34 (23.8)	26 (15.7)	
Preterm birth	Yes	61 (10.0)	27 (9.0)	14 (9.8)	20 (12.1)	0.5800
	No	547 (90.0)	272 (91.0)	129 (90.2)	146 (87.9)	
Low birth weight	Yes	42 (6.9)	25 (8.4)	7 (4.9)	10 (6.0)	0.3526
	No	566 (93.1)	274 (91.6)	136 (95.1)	156 (94.0)	
Worksite	Clean room	301 (49.5)	183 (61.2)	59 (41.3)	59 (35.5)	<0.0001
	Office	307 (50.5)	116 (38.8)	84 (58.7)	107 (64.5)	
Shift work	Yes	328 (54.0)	196 (65.6)	72 (50.4)	60 (36.1)	<0.0001
	No	280 (46.0)	103 (34.4)	71 (49.6)	106 (63.9)	
Work hours per day	8	52 (8.6)	17 (5.7)	15 (10.5)	20 (12.1)	0.0403
	9–14	556 (91.4)	282 (94.3)	128 (89.5)	146 (87.9)	
Breastfeeding during maternity leave	Yes	555 (91.3)	250 (83.6)	142 (99.3)	163 (98.2)	<0.0001*
	No	53 (8.7)	49 (16.4)	1 (0.7)	3 (1.8)	
Breastfeeding knowledge	Sufficient	329 (54.1)	158 (52.8)	72 (50.4)	99 (59.6)	0.2175
	Insufficient	279 (45.9)	141 (47.2)	71 (49.7)	67 (40.4)	
Awareness of lactation room	Yes	595 (97.9)	290 (97.0)	140 (97.9)	165 (99.4)	0.2183*
	No	13 (2.1)	9 (3.0)	3 (2.1)	1 (0.6)	
Ever using a lactation room	Yes	311 (51.2)	29 (9.7)	128 (89.5)	154 (92.8)	<0.0001
	No	297 (48.9)	270 (90.3)	15 (10.5)	12 (7.2)	
Awareness of breast pumping breaks	Yes	482 (79.3)	219 (73.2)	120 (83.9)	143 (86.1)	0.0013
	No	126 (20.7)	80 (26.8)	23 (16.1)	23 (13.9)	
Taking breast pumping breaks	Yes	228 (37.5)	17 (5.7)	88 (61.5)	123 (74.1)	<0.0001
	No	380 (62.5)	282 (94.3)	55 (38.5)	43 (25.9)	

* Fisher's exact test.

Table 3. Association between perceived breastfeeding-friendly support and breastfeeding continuation after returning to work.

Supportive factors	Yes (%)	Continue to breastfeed after returning to work (%)			p-value for χ^2 test
		Stopped	1–6 months	>6 months	
Colleague support					
Encouraged lactation room use	348 (57.2)	114 (38.1)	105 (73.4)	129 (77.7)	<0.0001
Encouraged pumping breaks	477 (78.5)	212 (70.9)	125 (87.4)	140 (84.3)	<0.0001
Supervisor support					
Encouraged lactation room use	261 (42.9)	92 (30.7)	74 (51.8)	95 (57.2)	<0.0001
Encouraged pumping breaks	371 (61.0)	168 (56.2)	99 (69.2)	104 (62.7)	0.0277
Environmental health nurse support					
Encouraged lactation room use	297 (48.9)	100 (33.4)	82 (57.3)	115 (69.3)	<0.0001
Encouraged pumping breaks	418 (68.7)	183 (61.2)	108 (75.5)	127 (76.5)	0.0004
Perceptions of workplace climate					
Feels embarrassed taking breaks	186 (30.6)	96 (32.1)	36 (25.2)	54 (32.5)	0.2735
Agrees breaks help breastfeeding	568 (93.4)	268 (89.6)	138 (96.5)	162 (97.6)	0.0010
Agrees breaks reduce work efficiency	319 (52.5)	177 (59.2)	67 (46.9)	75 (45.2)	0.0046
Feels breaks affect performance evaluation	270 (44.4)	142 (47.5)	57 (39.9)	71 (42.8)	0.2823

Table 4. Association between intention to continue breastfeeding after returning to work and predictors among employed mothers by multiple logistic regression analysis.

Variables	Continue to breastfeed after returning to work Odds ratio* (95% confidence interval)/*p*-value		
	Model 1: 1–6 months vs. No	Model 2: >6 months vs. No	Model 3: >6 months vs. 1–6 months
Breastfeeding perception and action			
Ever used a lactation room (Yes vs. No)	44.74 (20.31–107.44) <0.0001	47.83 (19.31–132.41) <0.0001	–
Awareness of breast-pumping breaks (Yes vs. No)	–	–	–
Took breast pumping breaks (Yes vs. No)	3.30 (1.37–8.03) 0.0077	4.00 (1.55–10.20) 0.0036	–
Agree that breaks help breastfeeding (Yes vs. No)	–	6.84 (1.06–48.79) 0.0481	–
Agree that breaks reduce work efficiency (Yes vs. No)	–	–	–
Colleagues support: use lactation room use (Yes vs. No)	2.49 (1.04–6.09) 0.0410	–	–
Colleagues support: take breast-pumping breaks (Yes vs. No)	–	–	–
Supervisor support: use the lactation room (Yes vs. No)	–	–	–
Supervisor support: take breast-pumping breaks (Yes vs. No)	–	–	–
Environmental health nurse support: use the lactation room (Yes vs. No)	–	–	–
Environmental health nurse support: take breast-pumping breaks (Yes vs. No)	–	–	–
Benefits of breastfeeding			
Awareness of benefits of breastfeeding (increments)	–	–	1.10 (1.01–2.00) 0.0390

* adjusted education, shift work, worksite, daily work hours, and breastfeeding during maternity leave.

agement from colleagues to access the lactation room (OR = 2.49, 95% CI: 1.04–6.09, $p = 0.0410$) were significantly more likely to persist in breastfeeding for 1–6 months. For the continuation of breastfeeding beyond 6 months (Model 2), employed mothers who had used a lactation room (OR = 47.83, 95% CI: 19.31–132.41, $p < 0.0001$), took breast-pumping breaks (OR = 4.00, 95% CI: 1.55–10.20, $p = 0.0036$), and agreed that using breast-pumping breaks would help continue breastfeeding (OR = 6.84, 95% CI: 1.06–48.79, $p = 0.0481$) were more likely to persist in breastfeeding beyond 6 months. Model 3 compared mothers who breastfed for over 6 months with those who breastfed for only 1–6 months. An increase in awareness was slightly associated with a higher probability of breastfeeding beyond 6 months as opposed to 1–6 months (OR = 1.10, 95% CI: 1.01–2.00, $p = 0.0390$).

4. Discussion

This study investigated the associations between awareness of breastfeeding benefits, perceived workplace support, and breastfeeding duration among employed mothers in Taiwan. Although breastfeeding rates were high during maternity leave (91.3%), they dropped significantly after mothers returned to work, with only 50.8% continuing and 27.3% breastfeeding beyond six months. This aligns with prior research suggesting that returning to work is a critical transitional period that imposes physical and psychological challenges on postpartum women [11,12,14,15,31].

First, the provision and utilization of workplace breastfeeding facilities were significantly associated with continued breastfeeding. Access to lactation rooms and taking breast-pumping breaks increased the likelihood of both short-term (1–6 months) and long-term breastfeeding (beyond six months). However, despite high awareness of facility availability (97.9% for lactation rooms and 79.3% for breast-pumping breaks), actual utilization remained relatively low (51.2% and 37.5%, respectively), suggesting potential barriers to use. These findings highlight the need for targeted support as mothers return to work, addressing both personal and workplace challenges. Reducing barriers to using breastfeeding facilities—through normalization efforts, peer experience sharing, and cultural shifts, such as flexible workloads—may be as vital as structural support in fostering a breastfeeding-friendly environment and helping mothers balance work and caregiving roles.

Second, social support, particularly from colleagues, was significantly associated with continued breastfeeding during the first six months after returning to work (Model 1: OR = 2.49). Encouragement from coworkers may help reduce stress and logistical challenges, making it easier for mothers to express milk and manage their schedules. Prior studies have emphasized the emotional value of peer support and workplace encouragement in improving breastfeeding outcomes [15,32–34]. Additionally, positive interpersonal communication has been found to enhance the effectiveness of workplace breastfeeding support efforts [35]. Although this association did not extend to breastfeeding beyond six months, interpersonal support seems especially beneficial during the initial transition back to work.

Third, internal motivation appeared to be associated with the likelihood of continuing breastfeeding beyond six months. Belief in the effectiveness of breast-pumping breaks (Model 2: OR = 6.84) and awareness of breastfeeding benefits (Model 3: OR = 1.10) were both positively associated with prolonged breastfeeding. These results support the importance of autonomous motivation—driven by personal recognition of breastfeeding's value—in sustaining long-term breastfeeding, consistent with prior findings [24–30]. Specifically, identified regulation, a form of autonomous motivation, allows mothers to continue breastfeeding based on internalized values, even without external encouragement [26]. Brief counseling interventions have also demonstrated efficacy in enhancing such motivation [30]. Additionally, maternal beliefs—according to one study—may play a greater role than environmental factors in predicting breastfeeding duration [31]. However, while awareness of the benefits is associated with extended breastfeeding, the effect size is small (OR = 1.10). This suggests that, although knowledge of the benefits can influence behavioral intentions, its impact on breastfeeding duration is likely modest. It implies that awareness alone is often insufficient for sustaining breastfeeding, especially when workplace or psychosocial support is lacking [24–26,30]. Therefore, to effectively promote extended breastfeeding among employed mothers, interventions should go beyond education to foster supportive workplace environments and enhance internal motivation. Future research should comprehensively investigate the relationship between maternal self-regulated motivation and breastfeeding duration among employed mothers using the breastfeeding motivation scale or similar instruments.

Findings indicate that awareness of maternal health benefits—such as reduced caloric requirements, uterine involution, lower cancer and osteoporosis risk, and improved work productivity—is significantly associated with continued breastfeeding after returning to work (see Table 1). In contrast, child-related benefits showed weaker associations, possibly because maternal benefits are more immediate and personally experienced, enhancing self-efficacy and motivation. This aligns with United States studies showing limited maternal benefit awareness [36] and with prior research linking such awareness to stronger breastfeeding intentions [30]. Therefore, educational efforts emphasizing maternal health benefits may be as critical as structural support in promoting prolonged breastfeeding.

This study reveals both cross-national parallels and Taiwan-specific challenges in workplace breastfeeding support. In the United States, the Patient Protection and Affordable Care Act (ACA), enacted in 2010, marked the first comprehensive federal legislation to promote breast-

feeding [37,38]. The ACA mandates that employers provide reasonable break time and a private, non-bathroom space for employees to express breast milk and requires insurance plans to cover breastfeeding support, supplies, and counseling at no cost to mothers [37,38]. Despite these provisions, breastfeeding rates in the United States remain suboptimal, with many women discontinuing breastfeeding upon returning to work [39]. Structural barriers, such as inflexible work schedules, lack of supportive facilities, and disparities affecting low-income, non-white, or part-time workers, continue to contribute to early weaning [37]. Similarly, in Taiwan, although the Gender Equality in Employment Act mandates workplace lactation rooms and breastfeeding breaks, the prevailing corporate culture—often characterized by long working hours and an emphasis on productivity—may undermine actual utilization. Social expectations and concerns about being perceived as less committed to work can further discourage mothers from using available resources. These findings suggest that culturally tailored strategies are crucial, beyond legal and structural provisions, to effectively support and normalize breastfeeding in the workplace for employed mothers.

Finally, while workplace support is crucial, other personal and contextual factors also impact breastfeeding decisions. These factors include maternal health, family support, infant adaptability, financial pressures, personal career goals, and cultural attitudes. Although this study did not fully examine these variables, they are important areas for future research. Future studies could investigate how these external factors interact with workplace support measures to influence the duration of breastfeeding.

There are several limitations to the present study. First, the study relied entirely on self-reported data, which introduces the potential for self-reporting bias. Participants may have over- or under-reported their breastfeeding behaviors, use of facilities, or perceptions due to memory recall, social desirability, or retrospective rationalization, particularly among those with strong beliefs about breastfeeding. Such bias may compromise the internal validity of the findings. Second, the study did not employ psychometrically validated instruments to measure key constructs such as breastfeeding motivation, perceived workplace support, or awareness of lactation benefits. The use of non-standardized tools, along with the dichotomized classification of variables, may have oversimplified complex behaviors and attitudes, leading to possible misclassification and limiting the precision, reliability, and comparability of the data with studies using validated scales. Third, the study was conducted in a single company in Taiwan, which may limit the generalizability of the findings to broader workplace settings or cultural contexts. Moreover, important factors such as personal and family influences, economic pressures, cultural perceptions, and individual career planning—which may significantly shape a mother's decision to continue breastfeeding after returning to work—were not fully explored. These unmeasured contextual elements may contribute to the complexity of breastfeeding decisions among employed mothers. Fourth, while the use of a lactation room was strongly associated with continued breastfeeding (OR = 44.74), the wide 95% CI (20.31–107.44) reflects a degree of statistical imprecision, likely due to sparse data in certain subgroups. Specifically, only 10.5% and 7.2% of mothers who did not use a lactation room continued breastfeeding for 1–6 months and more than 6 months, respectively. Such uneven subgroup distributions are a common limitation in observational studies and may lead to unstable estimates. Although the association remains statistically significant, this result should be interpreted with caution. Future studies with larger sample sizes or stratified designs are warranted to provide more precise effect estimates.

Given these limitations, future research should adopt prospective designs across diverse workplace settings, utilize validated instruments, and consider a broader range of psychosocial and structural factors to better understand the multifaceted determinants of breastfeeding continuation in the context of maternal employment.

5. Conclusions

The results of this study highlight the important role of workplace support and maternal awareness of breastfeeding in sustaining breastfeeding after returning to work. The use of lactation rooms, utilization of breast-pumping breaks, and belief in the effectiveness of these breaks were all significantly associated with continued breastfeeding beyond 6 months. Maternal awareness of breastfeeding benefits was also linked to a higher likelihood of breastfeeding for more than 6 months, even after adjusting for employment-related factors.

Availability of Data and Materials

The datasets used during the current study are available from the corresponding author on reasonable request.

Author Contributions

SYT designed the research study, collected data, analyzed and interpreted it, drafted the article, and approved the final manuscript. The author is participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

The study was carried out in accordance with the guidelines of the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of I-Shou University (approval number: ISU-IRB-100-09). All patients or their families/legal guardians gave their informed consent for inclusion before they participated in the study.

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Conflict of Interest

The author declares no conflict of interest.

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