

ORIGINAL ARTICLE

Effects of workplaces receiving "accreditation of health workplaces" on breastfeeding promotion, parental leave, and gender equality

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Abstract

Objectives: Work is often a barrier for women to continue breastfeeding after they have given birth. Breastfeeding support is an important part of workplace health promotion. We investigated the implementation of breastfeeding promotion and gender equality policies in workplaces with the Taiwan Badge of Accredited Healthy Workplace.

Methods: Our samples consisted of 1648 corporations with the badge of Accredited Healthy Workplace issued by the Bureau of Health Promotion from 2007 to 2008. Concomitantly, 2000 corporations without accreditation were randomly selected from the National Business Directory as the control group. Data were collected from self-administered questionnaires. Logistic regression was used to examine the association with breast-feeding promotion and other variables in Taiwanese workplaces.

Results: Members of accredited group of 1089/1648 (66.1%) and the control group of 526/2000 (26.3%) responded to the questionnaire. The accredited companies had more mother-friendly settings, including breastfeeding policies and documents, appropriate breastmilk preserving equipment and settings in the workplace. In the accredited group, breastfeeding rate of mothers returning to work after giving birth was 64.3% in 2008 (1 year after giving birth) and 60.4% in 2009 (1 year after giving birth), while the rate of the control group was 59.1% in 2008 and 51% in 2009.

Conclusion: Accredited corporations are better at breastfeeding support than those of the control group. This might be related to the company size, location, and the implementation of tobacco control and/or occupational health promotion policies, which may increase awareness of healthy workplaces and influence maternal protection positively.

KEYWORDS

breastfeeding, gender equality, maternal protection, parental leave

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1 | INTRODUCTION

Breastfeeding is recognized worldwide for its health benefits for both infants and mothers, including for mental, physical, and social development. Human milk provides all of the essential components for the growth and development of the infant, including fats, carbohydrates, proteins, vitamins, and minerals, and some developmental factors, such as long-chain fatty acids, human growth factors, and cytokines. Human milk also provides vital protection, decreasing infection via immunoglobulins and anti-infective proteins.¹

Taiwan's female labor force participation rate increased from 49.7% to 50.8% between 2008 and 2016,² indicating that more women are willing to work instead of staying home. However, work itself can be an obstacle to women if female workers are prevented from breastfeeding and nursing their children.^{3,4} In 1990, policy-makers from 40 countries produced the Innocenti Declaration,¹ which called on governments to establish programs to protect, promote, and support breastfeeding. It is therefore recommended as the sole source of nutrition for all infants during the first 6 months of life, with continued breastfeeding in addition to solid foods for at least the first year.⁵ The limitations of using formula as a substitute for human milk are clear. Breastfed infants have different growth characteristics compared to formula-fed babies. They grow at slightly varying rates and have different body composition^{6,7} and may have a lower risk for later obesity.⁷⁻⁹

Given the great interest in the effect of early nutrition on metabolic set points that may affect a child's risk for adult diseases (for example, the early origins of chronic disease hypothesis)¹⁰ and the increasing incidence of early insulin resistance, obesity, and type II diabetes in teenagers, future research should concentrate on whether breastfeeding is protective. Also, compared to formula-fed infants, breastfed infants have a lower incidence of infectious diseases such as diarrhea¹¹ and otitis media¹² and fewer respiratory tract disorders.¹³ The effect is particularly profound in the developing world, and studies also showed clear advantages in the developed world.¹³ Successfully promoting and supporting breastfeeding in the United States depends on persuading both mothers and society that breastfeeding was not only nutritionally sound but economically beneficial as well. These savings result from reducing both direct costs (such as formula expenses and physician, clinic, hospital, laboratory, and procedural fees) and indirect costs (such as time and wages lost by parents attending to an ill child).

Factors contributing to low rates of breastfeeding in the workplace include mother-unfriendly workplace conditions and the duration of maternity leave.¹⁴ Women frequently attributed early weaning to unsupportive work environments.^{15,16} Lack of privacy and inadequate time to express breast milk were cited as barriers. Other impediments

included employers' perception that the presence of infants in the workplace reduced mothers' productivity, company regulations that bar children from the workplace, and a lack of child care near the workplace.^{17,18} Fein et al compared strategies that women used to continue breastfeeding while working and found that breastfeeding directly during working hours was associated with the longest duration, and pumping milk during working hours was the second most successful strategy; neither breastfeeding nor pumping during work hours was associated with the shortest duration.¹⁹

According to the Taiwan Health Promotion Administration, Taiwan's breastfeeding rate was 19.8% in 2004, the rate in Sweden was 72% in 2002, and the rate in the UK was 25% in 2005.²⁰ Many companies in these countries have implemented corporate breastfeeding programs to benefit both the companies and the employees. This is also an attractive work-life balance benefit to retain employees. Flexible work schedules, access to a private location for milk expression, access to a nearby clean and safe water source, and access to hygienic breast milk storage options for new mothers are major components for a given setting. In the United States, several states have enacted legislation to encourage support for breastfeeding in the workplace.^{21,22} The United States Breastfeeding Committee released an inventory and analysis of state legislation on breastfeeding and maternity leave that includes legislation related to employment.^{22,23} A similar policy was established in Taiwan.²⁴ To enhance gender equality, in May 2016 amendments to the Act of Gender Equality in Employment stipulated that an employer with 100 or more workers must provide nursing rooms and breastfeeding time for their employees. The provision of lactation rooms and breast pumping breaks for female employees to express breast milk for children is a critical element and may increase a mother's intention to continue breastfeeding after returning to work. According to the Labor Standards Act, a female worker shall be granted maternity leave before and after childbirth for a combined period of 8 weeks. These acts aim to develop gender-friendly workplaces, enhance female education and talent cultivation, and promote women's employment and entrepreneurship.

Since 2007, the accreditation of healthy workplace has been advocated by Taiwan's Bureau of Health Promotion. This was helpful for continuously evolving worksite tobacco control and other health promotion programs. Accreditations of healthy workplaces were classified into two groups: tobacco control and health promotion. A tobacco control program in the workplace was the minimum requirement, and the other health promotion programs were advanced steps toward healthy workplaces.

The purpose of this research was to explore if the state of breastfeeding is different between companies with and without worksite health promotion accreditation and gender equality policies in the workplace.

2 | MATERIALS AND METHODS

2.1 | Subjects

Before 2000, Taiwan's workplace issues focused on industrial hygiene and safety improvements. Since 2003, the Health Promotion Administration at the Ministry of Health and Welfare has established coaching centers for workplace health promotion and dispatched trained experts to teach health promotion skills, including promoting tobacco control programs, advocating workplace health promotion with the Ministry of Labor, establishing certification mechanisms for health promotion in workplaces, and recognizing outstanding health-promoting workplaces. A total of 1648 companies that were accredited as healthy workplaces under Tobacco Control and/or Occupational Health Promoting legislation issued by the Bureau of Health Promotion from 2007 to 2008 were enrolled as the accredited group in this study. A structured questionnaire was developed and consisted of three parts, including company profile, the state of breastfeeding promotion, and the issue of gender equality. The questionnaire was validated by experts. A total of 2000 corporations without accreditation were randomly selected from the National Business Directory as the control group to complete the same questionnaire. The completed questionnaires were collected via mail or email and a telephone interview was conducted 1 week later by three trained interviewers. We compared these two groups regarding their promotion of breastfeeding and other gender equality policies. The study protocol was approved by the institutional review board at Kaohsiung Medical University Hospital. The approval number from institutional review board in Kaohsiung Medical University Hospital is KMHIRB-EXEMPT(II)-20180010. Finally, 2174 companies consented to participate in our study.

2.2 | Statistical analysis

Variations were analyzed using SPSS 19 and Stata 11 software. Logistic regression models were used to evaluate the association between workplace support scores and the outcomes of interest including the state of gender equality and maternity protection policy implementation in the workplace.

3 | RESULTS

Overall, 3648 questionnaires were sent by mail or email to the selected companies, 1648 questionnaires to the accredited group, and 2000 the control group. The accredited group returned 1089 (66.1%, 1089/1648) and the control group

returned 526 (26.3%, 526/2000). Table 1 shows no significant differences among these companies' locations ($P = .05$). The questionnaires were usually completed by the management departments in both groups, and less by the health, safety, and environment departments. Comparing the composition of the accredited and control groups, 199 large and 481 small companies were enrolled in the accredited group, but 37 large and 350 small firms were in enrolled in the control group.

To understand the association between the development of workplace gender equality and the proportion in the accredited companies, we adjusted for the departments, company locations, and business scales. As shown in Table 2, more employees in the firms in the accredited group (OR = 3.05) had heard of gender equality. Also in the accredited group, more companies had established workplace gender equality policies and publicized sexual harassment prevention strategies (OR = 4.49), indicating that the development of these strategies was better established in the accredited group.

The association between companies with maternity protection and accreditation is presented in Table 3. The departments, company locations, and business scales were adjusted. More female workers in the accredited group had menstrual leave (OR = 2.17) than in the control group. Work flexibility for maternity leave was higher (OR = 1.16) than in the accredited group, which is not statistically significant. There were more companies with child care facilities in the accredited group (OR = 2.05) than in the control group.

Table 4 shows that documents supporting breastfeeding policy, breastfeeding facility, or development of breastfeeding policy are more prevalent in the accredited group (OR = 4.76). Notification and encouragement of breastfeeding are also better established in the accredited group (OR = 6.01). More breastfeeding room (OR = 2.19) and breast storage facility are (OR = 1.66) setup in the accredited group, which may indicate that a greater proportion of accredited companies are willing to encourage and support breastfeeding.

To understand the state of postpartum female workers who breastfeed for 1 year postpartum and then return to work in the accredited and control groups, we adjusted for the departments, company locations, and business scales. The results are shown in Table 5. Total 477 female workers are analyzed. If employers provide reasonable break times for employees to express their breast milk, more female workers will continue breastfeeding (OR = 3.32). If employers have policies or documentation on breastfeeding, more female workers will continue breastfeeding after they return to work (OR = 2.50). If employers promote breastfeeding, more female workers will continue breastfeeding after returning to work (OR = 2.25). If employers establish lactation rooms, more female workers will continue breastfeeding after returning to work (OR = 3.00). If employers provide refrigerators for expressed milk storage, more female

	Groups		P-value*
	Accredited group	Control group	
Responses ^a			
HSE department	174 (16.3%)	43 (8.2%)	<.001
Management department	532 (50.0%)	368 (70.2%)	
Others	359 (33.7%)	113 (21.6%)	
Location of companies			
North	189 (17.4%)	135 (25.7%)	.05
Middle	579 (53.2%)	263 (50.0%)	
South	321 (29.4%)	128 (24.3%)	
Business scale ^b			
Large: >250 employees	199 (18.4%)	37 (7.0%)	<.001
Medium: 30-249 employees	403 (37.2%)	138 (26.3%)	
Small: <30 employees	481 (44.4%)	350 (66.7%)	
Average age of male employees ^c			
No male employees	32 (3.0%)	21 (4.0%)	<.001
<30	72 (6.7%)	71 (13.5%)	
31-40	470 (43.6%)	241 (45.8%)	
41-50	412 (38.3%)	153 (29.1%)	
51	91 (8.4%)	40 (7.6%)	
Average age of female employees			
No female employees	56 (5.3%)	22 (4.2%)	<.001
<30	122 (11.5%)	116 (22.0%)	
31-40	516 (48.6%)	246 (46.8%)	
41-50	321 (30.3%)	128 (24.3%)	
51	46 (4.3%)	14 (2.7%)	

Note: The missing number: a = 26, b = 7, c = 12, d = 28.

Abbreviation: HSE, health, safety, and environment.

*Chi-squared.

workers will continue breastfeeding after they return to work (OR = 2.35). If employers establish nursing facilities, more female workers will continue breastfeeding after they return to work (OR = 2.58). If employees are aware of information regarding gender equality, more female workers will continue breastfeeding after they return to work (OR = 3.96). Compared to the control group, the accredited group employers accommodated gender-friendly suggestions when making policies (OR = 3.07), publicized anti-harassment policies (OR = 2.01), offered work flexibility after 1 year of maternal leave, and had more employees with children under 3 years old (OR = 3.43).

A total of 298 companies had employees who kept breastfeeding for 6 months after 1 year postpartum and then returned to work. We adjusted the departments, company locations, and business scales and analyzed by logistic regression, as shown in Table 6. Company policies showed no statistically significant association with employees who continued breastfeeding for 6 months. But companies in the accredited group

TABLE 1 Profile of the accredited group and the control group

had higher proportions of supportive breastfeeding policies (OR = 4.34), breastfeeding facilities (OR = 3.43), and work flexibility (OR = 2.18).

4 | DISCUSSION

Though Taiwan's breastfeeding has increased, rates of duration and exclusive breastfeeding at 6 months are still far from Health People 2010 goals.²⁵ Research cites government policies, community support, and formula marketing as contributing factors. The social and economic barriers to exclusive breastfeeding in countries have been assessed with gender inequality, social influence, and traditional practices shown to hinder feeding practices.²⁶ In Taiwan, the Act of Gender Equality in Employment ensures women's rights in workforce. On March 8, 2002, the Gender Equality in Employment Law of Taiwan was enacted and became effective. The government implemented laws and

TABLE 2 The association between the development of workplace gender equality and the proportion of accredited companies

	Employees have heard of gender equality	Companies with workplace gender equality policies and publicized strategies for the prevention of sexual harassment	Companies consider gender differences when establishing polices
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Accredited	3.05 (2.05-4.53)	4.49 (3.4-5.82)	4.99 (3.74-6.64)
Department in charge			
HSE department	0.65 (0.26-1.63)	1.94 (1.10-3.45)	1.32 (0.88-1.96)
Management department	0.78 (0.50-1.22)	1.21 (0.92-1.59)	1.08 (0.84-1.39)
Others	1.00	1.00	1.00
Location of companies			
North	1.32 (0.75-2.32)	1.52 (1.04-2.22)	1.29 (0.93-1.79)
Middle	1.32 (0.87-2.09)	0.88 (0.66-1.18)	0.99 (0.76-1.29)
South	1.00	1.00	1.00
Business scale			
Large	5.82 (2.04-16.57)	7.70 (4.24-14.00)	1.00 (0.68-1.48)
Medium	4.71 (2.63-8.45)	3.27 (2.47-4.32)	1.25 (0.97-1.60)
Small	1.00	1.00	1.00

Abbreviation: HSE, health, safety, and environment.

TABLE 3 The association between maternity protection policies and accreditation

	Female workers with menstrual leave	Work flexibility for maternity leave	Companies with child care facilities
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Accredited	2.17 (1.68-2.80)	1.16 (0.93-1.46)	2.05 (1.35-3.09)
Department in charge			
HSE department	1.25 (0.72-2.18)	1.08 (0.73-1.58)	0.63 (0.38-1.05)
Management department	0.83 (0.63-1.08)	1.55 (1.23-1.97)	0.90 (0.62-1.31)
Others	1.00	1.00	1.00
Location of companies			
North	1.24 (0.86-1.80)	1.13 (0.83-1.53)	1.82 (1.19-2.80)
Middle	0.92 (0.69-1.22)	0.95 (0.75-1.22)	0.84 (0.56-1.24)
South	1.00	1.00	1.00
Business scale			
Large	6.70 (3.67-12.22)	1.29 (0.89-1.87)	6.61 (4.10-10.66)
Medium	2.95 (2.23-3.90)	0.88 (0.69-1.11)	1.37 (0.92-2.06)
Small	1.00	1.00	1.00

Abbreviation: HSE, health, safety, and environment.

policies to facilitate work-family compatibility for married women and to regulate that employers had to accommodate their needs to retain childbearing women. Our study followed accredited and non-accredited companies with workplace health promotion in 2007-2008 just before the major amendments. We found that accredited companies

established friendlier environments for breastfeeding, parental leave, work flexibility, and gender equality than those without accreditation, which suggest that some workplace wealth may be promoted better in these companies. Before 2008 in Taiwan, companies rarely implemented health promotion including breastfeeding. The study was the first

TABLE 4 Conditions supporting breastfeeding between the accredited and control groups

	Documents supporting breastfeeding policy	Notification and encouragement of breastfeeding	Breastfeeding time provided for employees	Breastfeeding rooms provided	Availability of breast milk storage facilities
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Accredited	4.76 (3.38-6.69)	6.01 (4.31-8.38)	1.04 (0.79-1.38)	2.19 (1.56-3.08)	1.66 (1.23-2.25)
Department in charge					
HSE department	1.21 (0.79-1.86)	1.53 (1.00-2.35)	1.16 (0.69-1.93)	1.22 (0.79-1.90)	1.02 (0.56-1.84)
Management department	1.39 (1.03-1.88)	1.26 (0.95-1.69)	0.97 (0.73-1.30)	0.70 (0.51-0.97)	0.93 (0.67-1.29)
Others	1.00	1.00	1.00	1.00	1.00
Location of companies					
North	1.44 (1.01-2.06)	1.51 (1.06-2.17)	1.22 (0.84-1.76)	1.41 (0.95-2.11)	0.66 (0.44-1.00)
Middle	0.97 (0.72-1.30)	0.98 (0.73-1.32)	1.45 (1.08-1.96)	1.52 (1.09-2.14)	0.87 (0.62-1.23)
South	1.00	1.00	1.00	1.00	1.00
Business scale					
Large	2.66 (1.76-4.01)	4.36 (2.88-6.60)	3.52 (2.06-6.02)	11.86 (7.63-18.42)	3.90 (2.07-7.36)
Medium	1.30 (0.97-1.74)	1.65 (1.25-2.19)	1.73 (1.29-2.30)	2.52 (1.81-3.53)	1.92 (1.38-2.65)
Small	1.00	1.00	1.00	1.00	1.00

Abbreviation: HSE, health, safety, and environment.

survey of breastfeeding, parental leave, and gender equality in Taiwanese companies.

Our study has some potential limitations. First, we did not focus on workplace interventions during pregnancy but assess only post-delivery interventions. However, the employers may already reallocate their female workers' workload by appropriate request and medical record. At each of the nine Occupational Injuries and Disease Preventing and Treatment Centers, which located in medical centers in Taiwan's urban areas, "Maternity Protection at Work Consulting Clinic" is set up; occupational physicians provide assessments of work and environmental hazard exposure for pregnant and breastfeeding women. According to Labor Safety and Health Act, employers have the obligation to ensure that pregnant and breastfeeding women are not exposed to any danger at work, including not requiring them to perform any dangerous work and appropriate measures must be taken on the basis of a health assessment. Thus, it can be assumed that maternity protection not only have establishment about breastfeeding promotion and lactation room provision; their workplaces are also equipped with administrative management, which are aimed at maintaining and strengthening gender-equality. However, the results of our survey might indicate that post-delivery interventions cannot reflect the real condition in these companies. In order to help parents with newborns alleviate financial pressure while on leave without pay, the Taiwanese government established the Employment Insurance Parental Leave Allowance in May of 2009. The

allowance provides subsidies to employees for part of the loss that occurs during unpaid parental leave. As long as a parent from a dual-income family has been insured for more than a year when the child is under the age of three, in accordance with the Act of Gender Equality in Employment, the parents can apply for the parental leave allowance if they apply for unpaid parental leave from their employer. According to the Bureau of Labor Insurance, from the implementation of the allowance to the end of July 2016, more than 420 000 parents benefited from the program. Male applicants increased from approximately 4000 to more than 71 000, demonstrating that many male employees are willing to share child care responsibilities. Also, because parental leave policies affect when a woman is likely to return to the workforce, they can impact the incidence of breastfeeding. The length of maternity leave has been shown to be positively associated with the duration of breastfeeding. This study surveyed Taiwanese companies in 2007 and 2008, before the subsidies allowance had been implemented.

Second, self-reported questionnaires are inherently biased by the subject's feelings. The recall timeframe may affect the accuracy of self-reported healthcare utilization and administrative data in many ways. Telescoping occurs when an individual lengthens the recall period beyond the timeframe in question. Demographic factors affecting self-reporting may include the respondents' age, gender, education, and ethnicity. In our study, female respondents may have more easily recalled female-friendly facilities

TABLE 5 In 2008, the state of postpartum female workers who continued breastfeeding for 1 y postpartum then returning to work in the accredited and control groups

		In 2008, postpartum female workers who continue breastfeeding after 1 y postpartum then return to work		OR (95% CI)	AOR (95% CI)	Accredited OR (95% CI)
	Yes	No				
If employer provides reasonable break times for employees to express breast milk						
Yes	276 (91.7%)	131 (74.4%)	3.79 (2.23-6.45)	3.32 (1.09-5.77)	1.21 (0.67-2.17)	
No	25 (8.3%)	45 (25.6%)	1.00	1.00		
If employer has a policy or documentation on breastfeeding						
Yes	138 (45.8%)	38 (21.65%)	3.08 (0.21-4.70)	2.50 (1.59-3.92)	2.84 (1.71-4.34)	
No	163 (54.2%)	138 (78.4%)	1.00	1.00		
If employer promotes breastfeeding						
Yes	169 (56.1%)	52 (29.5%)	3.05 (2.06-4.54)	2.25 (1.45-3.48)	4.14 (2.52-6.80)	
No	132 (43.9%)	124 (70.5%)	1.00	1.00		
Establishing lactation rooms						
Yes	168 (55.8%)	40 (22.9%)	4.26 (2.80-6.49)	3.00 (1.89-4.76)	2.55 (1.60-4.07)	
No	133 (44.2%)	135 (77.1%)	1.00	1.00		
If employer provides fridge facility for expressed milk storage						
Yes	281 (93.7%)	149 (84.7%)	2.68 (1.44-4.98)	2.35 (1.23-4.45)	1.07 (0.52-2.18)	
No	19 (6.3%)	27 (15.3%)	1.00	1.00		
If employer considers gender differences when creating policies						
Yes	125 (41.5%)	56 (31.8%)	1.52 (1.03-2.25)	1.39 (0.92-2.11)	3.07 (1.84-5.12)	
No	176 (58.5%)	120 (68.2%)	1.00	1.00		
If employer has workplace gender equality policies and publicized strategies for the prevention of sexual harassment						
Yes	255 (85.3%)	139 (79.0%)	1.54 (0.95-2.50)	1.08 (0.64-1.82)	2.01 (1.20-3.36)	
No	44 (14.7%)	37 (21.0%)	1.00	1.00		
Work leave without pay to care for children under 3 y old						
Yes	263 (87.7%)	142 (81.6%)	1.60 (0.96-2.68)	1.18 (0.68-2.05)	3.43 (2.01-5.85)	
No	37 (12.3%)	32 (18.4%)	1.00	1.00		
Work flexibility for maternity leave (children under 3 y old)						
Yes	181 (60.5)	94 (53.4%)	1.34 (0.92-1.95)	1.25 (0.84-1.86)	1.44 (0.94-2.20)	
No	118 (39.5%)	82 (46.6%)	1.00	1.00		
Companies with children-care facilities						
Yes	82 (27.2%)	16 (9.1%)	3.74 (2.11-6.64)	2.58 (1.40-4.75)	1.14 (0.67-1.95)	
No	219 (72.8%)	160 (90.9%)	1.00	1.00		
If employees have heard of gender equality						
Yes	296 (98.3%)	162 (92.0%)	5.12 (1.81-14.60)	3.96 (1.33-11.82)	2.58 (1.01-6.59)	
No	5 (1.7%)	14 (8.0%)	1.00	1.00		

Note: AOR: adjusted for departments, business locations, and scales.

Accredited OR: comparison between accredited group and control group

in workplaces than male workers, which may have led to the overestimation of the rate of worksites that promoted breastfeeding. However, our self-reported questionnaire was not used to assess an extensive range of health behaviors. The description status of the companies would remain accurate.

Third, voluntary participation also has its own bias. Work flexibility for maternity leave in the accredited group is not statistically significant. It possibly may relate to business scale. Work-loading substitution may be enough and more work flexibility can be achieved in large and well-organized companies, which may not relate

TABLE 6 In 2008, the state of postpartum female workers who continue breastfeeding for 6 mo after 1 y postpartum then return to work in the accredited and control groups

		In 2008, postpartum female workers who continue breastfeeding for 6 mo after 1 y postpartum then return to work			Accredited
		Yes	No	OR (95% CI)	OR (95% CI)
If employer provides reasonable break times for employees to express breast milk					
Yes	213 (93.4%)	60 (85.7%)	2.37 (1.01-5.53)	1.99 (0.83-4.78)	1.04 (0.56-3.50)
No	15 (6.6%)	10 (14.3%)	1.00	1.00	
If employer has a policy or documentation on breastfeeding					
Yes	110 (48.2%)	27 (38.6%)	1.49 (0.86-2.57)	1.10 (0.61-2.00)	3.27 (1.76-6.08)
No	118 (51.8%)	43 (61.4%)	1.00	1.00	
If employer promotes breastfeeding					
Yes	134 (58.8%)	34 (48.6%)	1.51 (0.88-2.54)	1.05 (0.57-1.93)	4.34 (2.39-7.87)
No	94 (41.2%)	36 (51.4%)	1.00	1.00	
Establishing lactation rooms					
Yes	137 (60.1%)	28 (40.0%)	2.26 (1.31-3.90)	1.65 (0.87-3.11)	3.43 (1.92-6.14)
No	91 (39.9%)	42 (60.0%)	1.00	1.00	
If employer provides fridge facility for expressed milk storage					
Yes	212 (93.4%)	66 (94.3%)	0.86 (0.28-2.67)	0.60 (0.18-1.92)	1.34 (0.46-3.87)
No	15 (6.6%)	4 (5.7%)	1.00	1.00	
If employer considers gender differences when creating policies					
Yes	96 (42.1%)	27 (38.6%)	1.16 (0.67-2.00)	1.07 (0.61-1.90)	2.97 (1.58-5.57)
No	132 (57.9%)	43 (61.4%)	1.00	1.00	
If employer has workplace gender equality policies and publicized strategies for the prevention of sexual harassment					
Yes	190 (84.1%)	61 (87.1%)	0.78 (0.36-1.71)	0.58 (0.25-1.32)	1.61 (0.79-3.28)
No	36 (15.9%)	9 (12.9%)	1.00	1.00	
Work leave without pay to care for children under 3 y old					
Yes	204 (89.5%)	56 (81.2%)	1.97 (0.94-4.12)	1.46 (0.66-3.23)	5.07 (2.47-10.41)
No	24 (10.5%)	13 (18.8%)	1.00	1.00	
Work flexibility for maternity leave (children under 3 y old)					
Yes	136 (59.9%)	42 (60.9%)	0.96 (0.55-1.67)	0.81 (0.46-1.46)	2.18 (1.25-3.80)
No	91 (40.1%)	27 (39.1%)	1.00	1.00	
Companies with children-care facilities					
Yes	70 (30.7%)	10 (14.3%)	2.66 (1.29-5.50)	2.05 (0.95-4.42)	1.19 (0.63-2.23)
No	158 (69.3%)	60 (85.7%)	1.00	1.00	
If employees have heard of gender equality					
Yes	224 (98.2%)	69 (98.6%)	0.81 (0.09-7.38)	0.53 (0.06-5.07)	2.51 (0.41-15.33)
No	4 (1.8%)	1 (1.4%)	1.00	1.00	

Note: AOR: adjustment for departments, business location, and scale.

Accredited OR: comparison between accredited group and control group

to workplace health accreditation. However, our study aimed to assess companies promoting employee breastfeeding, providing proper places and facilities, and establishing policies to support breastfeeding in the workplace. The scale of the companies in the accredited group was

mostly medium and large, for the organization and company culture, and thus they may show more tendencies to create gender-friendly workplaces. However, according to Taiwanese governmental statistics in 2017, the proportion of small and medium-sized enterprises was greater

than 97%, which is consistent with our results. It is likely that the enrolled companies were mostly small and medium-sized enterprises and it was relatively simple for them to focus on maternal-friendly policies. Finally, this study analyzed only comparison of the gender equality policies between companies with and without worksite health promotion accreditation. We did not collect and analyze the occupation type, employment type, position, and female ratio. It needs further investigation in the next steps.

5 | CONCLUSIONS

Health promotion, including good governance for health, health literacy, and healthy cities to makes people to control over their own health. It encompasses a wide range of social and environmental interventions that are designed to benefit and protect individual people's health and quality of life.²⁷ In a workplace setting, health literacy has been associated with individual health behaviors and the confidence about the ability to influence health or working conditions.^{28,29} In our study, it can be assumed that members in accredited companies are much aware of the importance of health promotion, maternal protection, and gender equality and these companies are more organized in engaging in enterprise's policy in achieving work-life balance. Implementing health promotion policies in the workplace, even tobacco control activities, could potentially encourage companies to pay attention to build a healthier workplace. Furthermore, this companies had taken action to assess employee's welfare, to consider whether their environments or policies are maternal-friendly. In addition, the government uses laws or acts to promote and support workplaces providing a range of benefits to working mothers, their infants, and the employers themselves. Work flexibility, lactation room provision, and support from colleagues are essential components for promoting breastfeeding in the workplace.³⁰ Further studies are needed to provide evidence on the cost-benefit analysis of workplace interventions to promote breastfeeding for mothers returning to work after childbirth.

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DISCLOSURE

Ethical approval: The study protocol was approved by the institutional review board at Kaohsiung Medical University Hospital. The approval number from institutional review board

in Kaohsiung Medical University Hospital is KMUHIRB-EXEMPT(II)-20180010; *Informed consent:* 2174 companies consented to participate in our study; *Registry and the registration no. of the study/trial:* N/A; *Animal studies:* N/A; *Conflict of interest:* The authors declare that they have no conflict of interests.

AUTHORS' CONTRIBUTIONS

WL is responsible for article writing. CH is in charge of specimen handling, participant recruitment. FC, CW, and CL take responsibility for partial writing reviewing the manuscript. HC applied for this project, integrated research, and is responsible for submission matters.

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