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Promotion, protection, and support of breastfeeding at work, and achieving sustainable development: a scoping review

Carolina Belomo de Souza (https://orcid.org/0000-0002-5813-5747) [1]
Daiane Sousa Melo (https://orcid.org/0000-0002-0560-5645) [2]
Gláubia Rocha Barbosa Relvas (https://orcid.org/0000-0002-0052-9292) [3]
Sonia Isoyama Venancio (https://orcid.org/0000-0001-7147-3292) [4]
Regina Paula Guimarães Vieira Cavalcante da Silva (https://orcid.org/0000-0002-2467-1760) [1]

Abstract *This article aims to map promotion, protection, and support strategies aimed at working women who breastfeed and their potential impact on achieving the Sustainable Development Goals (SDGs), in particular SDGs 5 (gender equality and women's empowerment) and 8 (decent work and economic growth). This study is a scoping review based on the Joanna Briggs Institute (JBI) framework, whose searches were performed in PubMed, Web of Science, Scopus, Social Science Research Network, and Open Knowledge Repository databases. This study's search obtained 576 publications, of which 33 were included in the study. The narrative synthesis was organized into three axes: 1) promotion; 2) protection, and 3) support for breastfeeding in the work context. Actions aimed at women who breastfeed at work have the potential to directly achieve SDGs 5 and 8, and indirectly achieve SDGs 1 and 10. Increased breastfeeding rates also help to achieve another four SDGs (2, 3, 4, 12). Actions aimed at working women who breastfeed can contribute directly and indirectly to the achievement of eight of the 17 SDGs, and should therefore be encouraged and reinforced.*

Key words *Breastfeeding, Sustainable Development Goals, Women working, Gender equality, Health promotion*

[1] Departamento de Pediatria, Universidade Federal do Paraná. R. General Carneiro 181, 14º andar, Alto da Glória. 80060-900 Curitiba PR Brasil. belomo.carolina@gmail.com
[2] Faculdade de Saúde Pública, Universidade de São Paulo. São Paulo SP Brasil.
[3] Escritório Regional de Saúde de Barra do Garças, Secretaria de Estado de Saúde de Mato Grosso. Barra do Garças MT Brasil.
[4] Instituto de Saúde de São Paulo, Secretaria de Estado da Saúde. São Paulo SP Brasil.

Introduction

Good practices of breastfeeding have a positive impact on survival, nutrition and food safety, and the development of small children, as well as bring benefits to the mothers' health[1,2]. However, globally, only 14% of babies under six months of age receive exclusive breastfeeding. Thus, efforts need to be made to achieve the goal of 70% established by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) for 2030[3]. A barrier to the improvement in breastfeeding rates is the increase in the participation of women in the work market, since conciliating maternity and work is a major challenge[4,5]. When the work environment is not favorable, women do not feel encouraged to continue breastfeeding, one of the main underlying reasons for early weaning[4-6]. Moreover, the efforts and concerns of women about how to continue breastfeeding, associated with difficulties to safely express and store milk in the workplace, can cause stress and a lack of concentration within professional activities, thus impacting one's efficiency and productivity at work[6].

In this sense, it is important for companies to provide support to women to exercise their right to breastfeed[2,7]. Support for breastfeeding in the workplace is encouraged by the International Labor Organization (ILO), which proposes the implementation of conventions no. 183 and no. 191 to guarantee maternity and labor protection, including paid maternity leave for a minimum of 14 weeks and breaks during working hours to breastfeed, or a reduction in working hours to breastfeed[8].

The promotion, protection, and support strategies for breastfeeding in the workplace, such as campaigns, maternity leave (preferably of six months), and the providing of support rooms for breastfeeding, contribute to the increase in breastfeeding indexes, as well as diminish absenteeism and improve performance, commitment, and maintenance of the work force[2]. These strategies are essential for women to dedicate themselves to their professional activities more easily, alleviating physical and emotional discomfort while maintaining their productivity[6]. Therefore, it can be inferred that the promotion, protection, and support strategies for breastfeeding in the work context have a great potential to foster the achievement of the Sustainable Development Goals (SDGs) related to health and well-being, gender equality, women's empowerment, and decent and productive work[6].

One form of decent work is defined by the ILO as the promotion of and compliance with fundamental rights at work, with decent pay and employment, in the social and legal protection, as well as in the adequate dialogue between business leaders and their workers. Productivity is related to the efficiency and efficacy of the work. In this sense, full and productive employment benefits the workers, business leaders, and their countries. Gender equality seeks to provide the same opportunities to all, and their existence in the work environment have an impact upon the physical and mental disposition of the women[9,10].

Considering the relevance of breastfeeding for maternal-child health and nutrition and of the recent debate over the influences of the work context in the protection and support for breastfeeding, this study aims to map the strategies geared toward working women who breastfeed and discuss their potential to help to achieve the SDGs, especially SDGs 5 (gender equality and women's empowerment) and 8 (decent work and economic growth).

Methods

This study performed a scoping review, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) approach[11].

Identification of research questions and eligibility criteria

The acronym "PCC" (population, concept, and context) was used to guide the core research question: "What are the promotion, protection, and support strategies for maternal breastfeeding in the work context, and how can these help to achieve the SDGs, especially SDGs 5 (gender equality and women's empowerment) and 8 (decent work and economic growth)?" The inclusion criteria were: *Population*: women who breastfeed, mothers of children under two years of age; *Concept*: promotion, protection, and support strategies for maternal breastfeeding; *Context*: strategies related to the work context and to the working woman who breastfeeds.

Data source

This study included primary studies and reviews in the English, Portuguese, and Spanish languages, with no restrictions concerning the

approach (quantitative, qualitative) or the year of publication, as well as technical notes. Excluded from this study were publications in the form of books, book chapters, and program implementation guides.

Search strategies

The search was conducted in April 2021 in the Medline, Web of Science, and Scopus databases and in two repositories: Scopus, Social Science Research Network (SSRN) and Open Knowledge Repository. The following descriptors, in the English language, were used: Breastfeeding; Intervention; Equity, Gender; Workplaces; Legislation; Woman, Working; Living Cost; Economic Conditions; Household Consumption; Public Expenditures; Health Expenditures; Public Policies; Income; Employment; Women; Empowerment; Economy. In the search conducted in the "Social Science Research Network" repository, only the descriptors "Breastfeeding AND Intervention" were used, since the search models with the combination of other descriptors did not produce results. The complete model of the searches combining the descriptors is presented in Supplementary Material A (available at: https://doi.org/10.48331/scielodata.1WZKVJ).

Study selection and data extraction

The Rayyan QCRI 0.0.1 software was used to screen the records by titles and abstracts. Three authors screened the records in an interactive manner, and the conflicts were resolved by consensus. After reading the full texts for eligibility assessment, the data were registered in an extraction spreadsheet, including the following information: author, year of publication, country, type of study, type of strategy (promotion/protection/support), relation of the strategies and/or outcomes with SDGs 5 and 8.

Data analysis

A narrative synthesis was produced[12], and the information was grouped to describe the characteristics of the studies. The classification of the economies of the countries of this study, according to the World Bank 2020-2021[13], was identified. The strategies identified in the studies were classified in three axes, based on the reference from the Brazilian Ministry of Health[14]:

Promotion: publicity actions in companies and informative materials to promote breastfeeding in the workplace; includes the disclosure of declarations and guidelines that encourage the implementation of support programs for breastfeeding in companies.

Protection: public policies at the federal, state, and municipal government levels, especially with laws to protect breastfeeding; includes paid maternity leave and the right to take breaks during working hours to breastfeed or to express breastmilk.

Support: support actions to institutionalize breastfeeding within the company environment; local policies from the companies themselves; providing of daycare centers; and support provided by supervisors, workmates, and family members.

Analysis of the potential of the strategies to achieve the SDGs

This study identified the impacts of the strategies on the working conditions of the mothers and on the practices of breastfeeding and/or on the mothers' health and well-being. Using the SDGs from the United Nations Agenda 2030 as the core reference, our study analyzed the potential to achieve the SDGs through the strategies of promotion, protection, and support for breastfeeding in the work context[9]. To support the analysis, evidence concerning the influences of good working conditions and practices of breastfeeding upon well-being, health, and prosperity of the mothers and children was investigated in the literature.

Results

Figure 1 presents the results of the searches, inclusions, and exclusions with justifications. The list of references of the excluded reports and reasons for exclusion are presented in Supplementary Material B (available at: https://doi.org/10.48331/scielodata.1WZKVJ).

Characteristics of the study

The 33 selected reports were published between 1990 and 2021, with the majority (28) published between 2011 and 2021. Most of the studies were conducted in high-income countries (n = 23; 69.7%), mainly in the USA (n = 15; 45.5%)[15-28], and six multicenter studies (18.2%) involved studies from more than 140 countries[2,29-33]. Two studies were carried out in upper middle-income

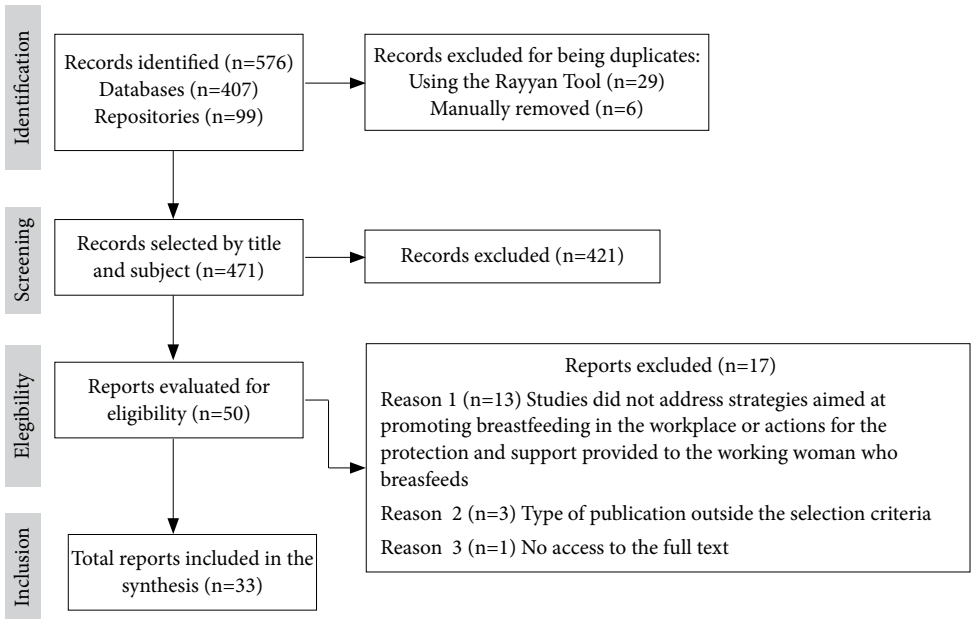

Figure 1. Flow chart of study selection.

Source: Authors.

countries (6.1%)[34, 35] and another two in lower middle-income countries (6.1%)[36,37].

The study designs were mainly observational and analytical (n=16; 47.5%)[15,18,20-23,25,28,29,35], followed by qualitative approaches (n = 6; 18.2%)[17,34,36,43-45]. Other types of designs included reviews (n = 9; 27.3%)[2,16,19,24,26,27,29-31], technical notes (n = 1; 3.7%)[33], and other analytical methods (n = 1; 3.7%)[46].

The promotion strategies for breastfeeding in the work context have been described in only a few reports (n = 2; 6.1%)[16,33], while most reports described protection strategies (n = 27; 81.8%)[2,15,17-33,37,39-41,44-46], followed by support strategies (n = 18; 54.5%)[2,19-22,27,32,34,36-45]. Some studies treated more than one type of strategy, for example, protection and support. A synthesis of the characteristics of the strategies cited in the reports is presented in the three charts below (Charts 1, 2, and 3).

Promotion strategies for breastfeeding

In one study, the strategy cited was that of the creation of guidelines for health and nutrition promotion programs in the workplace for pregnant and breastfeeding women, attempting to overcome the shortcomings and challenges faced regarding improvements in the prevalence of breastfeeding in the 1990s in the USA. These actions were successful for the promotion of maternal breastfeeding in large urban areas[16]. Findings from Marinelli et al. (2013)[33] presented a Declaration based on evidence regarding medical, legal, and political challenges faced by mothers who breastfeed and are separated from their children in the workplace or educational environments. The Declaration presents recommendations for doctors and employers concerning how to: avoid the separation of the mother from the child because of work responsibilities, offer adequate maternity leave, reduce the work load of the job/study, and implement formalized breastfeeding programs and physical installations in schools and workplaces.

Protection strategies for breastfeeding

The most frequent protection strategy for breastfeeding in the work context (n = 16; 59.5%) was the right to breaks during working hours to express breastmilk or to breastfeed[2,15,18-20,22,24,26,28-30,32,37,40,41,45]. Some studies described the right to adjust work duties, flexible working hours at home or at work, or the reduction in the workload of the job as ways to pro-

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Chart 1. Narrative synthesis of the support strategies for breastfeeding at work and for working women identified in the selected reports.

Author, year	Characteristics of the strategies for promoting breastfeeding
Barber-Madden, 1990[16]	Promotion actions were developed in order to overcome the shortcomings and challenges for improvements in the prevalence of breastfeeding in the USA during the 1990s. A committee was created to deal with the barriers for promoting breastfeeding. Task groups were formed to implement several actions, including promotion strategies aimed at the working women, with the creation of directives for health and nutrition programs at work for pregnant and breastfeeding women.
Marinelli *et al.*, 2013[33]	A declaration was issued, with the objective of providing to leading doctors in breastfeeding a summary, based on evidence, of the medical, legal, and political challenges faced by mothers who breastfeed and who are separated from their children at work or in educational environments. The declaration emphasizes that the presence of formalized breastfeeding programs, and of support and physical facilities in schools and workplaces, improves the ability of mothers to breastfeed successfully. Employers are advised to stay informed in order to understand how support to working women who breastfeed will positively affect their businesses.

Source: Authors.

tect the mother's right to breastfeed[20,21,37,44]. The execution of the right to maternity leave was also a common strategy among the studies (n = 11; 33.3%)[2,23,25,26,29-31,35,37,39,45], considering that two of these cited parental leave as a strategy[32,35]. Other examples of legislative strategies were the existence of laws and federal and state statutes that forced companies to provide support to their workers who breastfeed by making breastfeeding accommodations available and by offering flexibility in working hours[15,18,19,24,46].

The studies showed that the federal and state laws and policies allow for an increase in the participation of the women and mothers in paid work, improving the household income and general equity, both also associated with improvements in health results for women and children[26,29,31]. Some European countries use political policies in an attempt to boost gender equity and fertility[26,35]. The right to breaks and flexible working hours are low-cost interventions that can reduce absenteeism and improve worker performance and commitment, as well as secure the workforce[2]. Maternity leave was considered to be an important mediator in diminishing "household shortcomings" in terms of income and promotors of economic growth, given that the parents tend not to quit their jobs so that they can take care of their children[26].

Concerning the positive impacts of the laws and/or policies in the breastfeeding practices, one study demonstrated that working at home (> 8 hours/week) presented an 8% increase in the probability of breastfeeding at birth and a 16.8% increase at six months[21]. The right to breaks during working hours and breastfeeding accommodations improved the exclusive maternal breastfeeding rates at six months[15]. Demanding a location and/or break to breastfeed by means of a state statute increased the probability of breastfeeding to six months[18]. The execution of the state law was highlighted as being effective in increasing maternal breastfeeding rates by 2.3 percentage points when compared to states without this type of law, although this impact can only be observed one to two years after the law has been signed[46]. The mothers were more prone to breastfeeding for a longer period of time when they received maternity leave for at least 12 weeks[23,25,39,45]. The prevalence of continuing to breastfeed after six months further improved when the maternity leave was paid[23,39], and served to diminish the neonatal and infant mortality rates by 10%[29].

Some challenges in the execution of protection strategies were described: many employers do not offer decent working conditions for breastfeeding women and the periods of paid maternity leave fall short of that recommended by the ILO[2,23,31,37,39]. In Pakistan, only 45% of the countries offered any type of adjustment in job functions for the mothers during the breastfeeding period and only 15% offered breaks to breastfeed and no more than three months of paid maternity leave[37]. In Taiwan, paid maternity leave lasted for only two months for most mothers, and it was not common for women to opt for longer periods, possibly due to the fear of losing their jobs and income[39]. Another study used data from

Chart 2. Narrative synthesis of the protection strategies for breastfeeding in the work context and for the working mothers identified in the selected reports.

Author, year	Characteristics of the protection strategies for breastfeeding
Abdulloeva and Eyler, 2013[15]	State law for breastfeeding: includes breaks during working hours and a private place, other than bathrooms, where mothers who breastfeed may be able to express breastmilk during working hours, for one year after the birth of the child, as necessary.
Alb et al., 2017[28]	Federal law, which supports breastfeeding at work. The Law requires that the employers provide a break and a private location, other than a bathroom, so that breastfeeding employees are able to express breastmilk for one year after childbirth.
Bradford *et al.*, 2017[17]	State policies and practices of support for breastfeeding in four areas: hospitals, clinics, care environments and early childhood education, and workplaces.
Chen *et al.*, 2006[45]	Maternity leave and the right to have breaks to express breastmilk.
Dozier and McKee, 2011[18]	Existence of a state legislation for breastfeeding at work, which requires a place and a break for breastfeeding.
Grummer-Strawn and Shealy, 2009 [19]	Employers allowed women to have time and a space to express milk at work. The States issued legislation in order to guarantee that accommodations were made for female workers and to protect the right of breastfeeding in public places.
Hauck *et al.*, 2020[46]	States applied the Legislation "US workplace breastfeeding policy" which are laws that support breastfeeding in the workplace with different applications, encouraging or demanding that companies provide facilities where mothers may express breastmilk in privacy and store it properly.
Heymann *et al.*, 2011[29]	Paid Maternity Leave and the right to have breaks for breastfeeding.
Heymann *et al.*, 2013[30]	Paid Maternity Leave and the right to have breaks for breastfeeding.
Hilliard and Brunt, 2020[20]	Política estadual de promoção da saúde implementada para prevenir práticas de emprego injustas contra as mulheres, especificamente mães trabalhadoras que amamentam. Direito a intervalos flexíveis e espaço privado para amamentar. A política dá a designação (selo de certificação) de empresa amiga da criança.
Jacknowitz, 2008[21]	Direito à disponibilidade de horário flexível (horas trabalhadas em casa e trabalhadas em cronograma fixo).
Kozhimannil *et al.*, 2016[22]	Direito a intervalo com tempo suficiente para extrair o leite das mamas.
Lee et al., 2015[39]	Licença maternidade por seis meses.
Marinelli *et al.*, 2013[33]	Licença maternidade. Declaração para líderes médicos sobre evidências dos desafios médicos, jurídicos e políticos enfrentados pela mãe que amamenta separada de seu filho no local de trabalho ou em ambientes educacionais. Entre as declarações, inclui a licença maternidade adequada.
Mirkovic *et al.*, 2016[23]	Licença maternidade remunerada.
Murtagh and Moulton, 2011[24]	Lei federal que exige acomodação para mães que desejam continuar amamentando enquanto trabalham fora de casa e dá o direito de tempo de pausa razoável para extrair o leite das mamas.
Nandi *et al.*, 2018 [31]	Licença parental remunerada.
Ogbuanu *et al.*, 2011[25]	Licença maternidade remunerada.
Rowbotham *et al.*, 2021[44]	Direito a horários de trabalho flexíveis.
Rollins *et al.*, 2016[2]	Licença maternidade e direito a intervalos para amamentar.
Ruhm, 2011[26]	Licença maternidade remunerada; direitos estendidos não pagos, como menor carga horária de trabalho e licença por tempo prolongado.
Soomro *et al.*, 2016[37]	Licença maternidade paga por três meses; direito a ajustes de tarefas e a intervalos durante o período de lactação.
Stumbitz *et al.*, 2018[32]	Direito a tempo para extrair o leite das mamas.
Taylor *et al.*, 2020 [27]	Políticas e leis federais que estimulam as empresas a reconhecer e apoiar as necessidades das funcionárias que amamentam.
Tsai, 2014a[40]	Direito a intervalos para extrair o leite das mamas.
Tsai, 2014b[41]	Direito a intervalos para extrair o leite das mamas.
World Bank, 2012[35]	Licença maternidade e paternidade em Mauricius.

Source: Authors.

Chart 3. Narrative synthesis of the support strategies for breastfeeding at work and for the working women in the selected reports.

Author, year	Characteristics of the breastfeeding support strategies
Burns and Triandafilidis, 2019[43]	Providing a place to store breastmilk expressed by the workers and by the students of the University.
Cervera-Gasch *et al.*, 2020[38]	The existence of university support policies for their workers who breastfeed. Provision of special facilities to express and store breastmilk after returning to work at the university. Promotion of support groups. Having a female supervisor.
Chen *et al.*, 2006[45]	Existence of policies in the companies, to make the workplace more convenient for breastfeeding. Making locations available to express breastmilk.
Febrianingtyas *et al.*, 2019[36]	Having available facilities at offices to express breastmilk. Receiving support from the managers, supervisors, and workmates.
Fernandes *et al.*, 2018[34]	Support from managers so that the employees may have work flexibility in terms of function, hours, and space that allows for breastfeeding. Offering daycare and providing good treatment to the employee.
Grummer-Strawn and Shealy, 2009[19]	Providing rooms for breastfeeding or specific locations for breastfeeding.
Hilliard and Brunt, 2020[20]	Companies should provide a private space - other than bathrooms - so that female workers can express breastmilk, which includes a clean source of water for washing, and providing a refrigerator to store the breastmilk.
Jacknowitz, 2008[21]	Availability of daycare services sponsored by the employer.
Kosmala-Anderson and Wallace, 2006[42]	Development of facilities and general company policies for the well-being of the mothers when they return to work. Access to daycare in the workplace.
Kozhimannil *et al.*, 2016[22]	Access to locations for breastfeeding and to express breastmilk in the workplace.
Lee *et al.*, 2015[39]	Availability of a room for breastfeeding in the workplace.
Rollins *et al.*, 2016[2]	Availability of a room for breastfeeding
Rowbotham *et al.*, 2021[44]	Availability of a location to express milk and store it. Support from the supervisor and workmates.
Soomro *et al.*, 2016[37]	Availability of a location for breastfeeding and/or to express breastmilk and store it, at multinational and national organizations. Availability of a breast pump and of a nursery for daycare.
Stumbitz *et al.*, 2018[32]	Company programs for breastfeeding in small and mid-sized companies to handle pregnancy and the return of mothers to work, offering time and a private space to express breastmilk.
Taylor *et al.*, 2020[27]	Availability of rooms for breastfeeding and to express breastmilk.
Tsai, 2014a[40]	Availability of rooms to express breastmilk after the mothers' return to work.
Tsai, 2014b[41]	Availability of a place in the workplace to express breastmilk after the mothers' return to work, and the promotion of educational actions that include the mother's partner.

Source: Authors.

a nationwide American study and revealed that 28% of the employed women between 2006 and 2010 did not receive any type of paid maternity leave[23]. Systematic reviews[1,2] showed short spans of maternity leave in a number of countries, not reaching the minimum standard of 14 weeks established by the ILO[2].

Support strategies for breastfeeding

Among the 18 reports that cited support strategies, 16 mentioned the availability of a room in the workplace for the mothers to breastfeed and/or express breastmilk and store it in a secure manner (described in this study as support rooms for breastfeeding)[2,19,20,22,27,32,36-42,43-45]. Our study also considered as support strategies the existence of companies' internal policies, which mainly encouraged the installation of support rooms for breastfeeding, breaks to express breastmilk[38,42,45], daycare center subsidies for the workers' children[43], or the availability of daycare centers in workplace[42]. Four reports highlighted the importance of support from the managers

and workmates to create a friendly work environment for breastfeeding and to make resources available that would allow for women to exercise their right to breastfeed[34,36,42,44]. Educational activities were also carried out in combination with other support actions mentioned above[38,41].

Support rooms also showed benefits in the work context, including an infrastructure to better promote worker performance, as well as improvements in satisfaction with their work and reduced absenteeism[2,32]. The use of support rooms in the workplace has grown over the years in Taiwan, from 51.1% in 2008 to 64.1% in 2011[39], and the availability of these rooms can boost the mothers' intention to take breaks to express breastmilk and then return to work[40,41]. Regarding the impacts on breastfeeding practices, the adequate supply of support rooms for breastfeeding was associated with a longer duration of breastfeeding after returning to the work[38,20]. Between 2011 and 2012, in the USA, 40% of the women had access to both breaks and private spaces. These women had a 2.3 times greater probability of breastfeeding exclusively at six months (95% CI, 1.03-4.95) and a 1.5 greater probability of continuing to breastfeed exclusively each month thereafter (95% CI, 1.08-2.06), when compared to women without access to these accommodations[22].

There is still a low supply of these rooms for breastfeeding, and the access to these rooms depends on the organization's size, in which it is more likely that larger companies would be able to provide instrumental support, including rooms to breastfeed or to express and store their breastmilk[36]. The availability of rooms was less common (9%) in small businesses (< 100 employees) when compared to large-scale companies (42%)[19]. One of the factors that makes it challenging to revert this scenario, especially among small businesses, is the lack of mandatory requirements for the employers to provide adequate rooms for breastfeeding[37,44]. Even in studies conducted in high-income countries, such as Australia and England, in some companies, the rooms available for women to express and store breastmilk were found to be kept in unhealthy conditions[42,43].

The existence of a company policy to support breastfeeding, which implements the support rooms for breastfeeding, was one factor associated with mothers continuing to breastfeed ($p = 0.009$)[38]. However, two studies emphasized a low use of the rooms because the mothers did not know of the policy or of their worker rights in maternity[42,45]. One company policy that makes daycare centers available showed a 47% rise in the probability of breastfeeding for six months after birth, according to data from the national studies in the USA in 1979[21]. In one study conducted in England, access to daycare centers in the workplace was available only for a few workers[42].

With regard to the support provided by employers and workmates, these attitudes promote the protection and dissemination of the rights of mothers who breastfeed to return to work[36,44]. A study conducted in Brazil pointed out that the managers show a positive behavior to support and promote breastfeeding when they understand the positive impacts in worker efficiency that can result from maternity support. The opposite was observed when the managers had a negative view in relation to the implementation of rooms for breastfeeding, they did not understand the laws and the workers' needs, or they simply exempted themselves of the responsibility[34]. In a study conducted in England, the lack of support from the employer was seen as a major source of dissatisfaction among working women. This, in fact, was the underlying reason why some stayed on leave for longer periods of time than they wanted or why they resigned after their maternity leave[42].

Educational activities were carried out, in general, in combination with other support actions. Support groups were created in a Spanish university for their workers, and special accommodations were made available for women to express and store their breastmilk. A support policy for breastfeeding was also put into practice at the university. The set of strategies was associated with a longer duration of breastfeeding when returning to work ($p < 0.001$)[38]. In Indonesia, the researchers provided information to pregnant women in the workplace, encouraging breastfeeding, and provided installations where they could express their breastmilk[36]. In Taiwan, educational actions or pre-natal activities were developed in the workplace, which included the partner of the working women. The initial support of the partner to choose breastfeeding, the company's encouragement for women to use the rooms set up for breastfeeding, and breaks during working hours to express breastmilk led to an increase in breastfeeding rates[41].

Potential of the strategies to achieve SDGs

Figure 2 synthesizes the impacts of the promotion, protection, and support strategies for breastfeeding in the work context in better work-

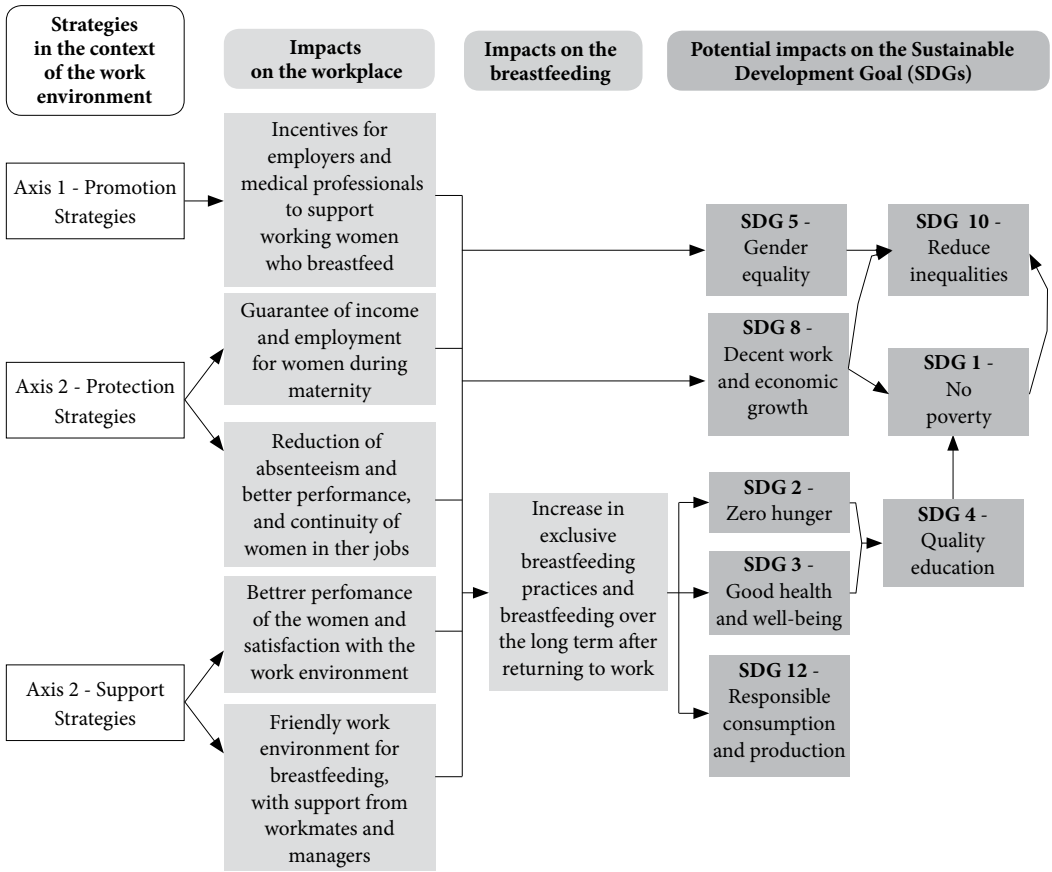

Figure 2. Relations of the results from the protection, promotion, and support strategies for breastfeeding in the work context, with the achievement of SDGs (Sustainable Development Goal).

Source: Authors.

ing conditions for women who breastfeed and who receive the positive results in the breastfeeding practices. These outcomes show connections with the achievement of the SDGs. The impacts of the strategies on women's work has the potential to achieve SDG 5 (gender equality and women's empowerment) and SDG 8 (decent work and economic growth), which increases the possibility of achieving SDG 10 (reduce inequalities) and SDG 1 (no poverty). Concerning the SDG 5, the strategies impact three targets (5.1, 5.6, and 5c) related to eliminating all forms of discrimination against women, thus guaranteeing reproductive rights, in turn adopting and strengthening solid policies and laws to promote gender equality and the empowerment of all women[2,26,29,31,35,47]. As regards SDG 8, the strategies have the potential to achieve two targets (8.5 and 8.8) concerning full and productive employment and decent work for all women and men as well as protect worker rights and promote safe and protected work environments for all workers[2,26,29,31,35,47]. Two targets of SDG 10 (10.1 and 10.2) are achieved indirectly through the impacts of the strategies, which seek to progressively achieve and sustain income growth, and to strengthen and promote social, economic, and political inclusion for all[26,29,31,47]. These actions influence the achievement of two targets (1.2 and 1.3) of SDG 1, since they promote the reduction of poverty and encourage the implementation of social protection systems[26,29,31,47].

The increase in exclusive and continued breastfeeding practices after women return to work increases the potential to achieve SDG 2 (zero hunger), SDG 3 (good health and well-being), and SDG 12 (responsible consumption and production). These results enhance the possibility of achieving SDGs 1, 4, and 10. Concerning SDG 2, a better prevalence of maternal breastfeeding can help to achieve two targets (2.1 and

2.2), since breastfeeding is a means through which to end hunger and guarantee access to safe and nutritional foods for babies. Moreover, good breastfeeding practices are a path toward ending all forms of malnutrition[1,2,47]. In relation to SDG 3, the strategies that increase the number of breastfed children also promote specific targets (3.1 and 3.2), as it has been proven that breastfeeding leads to a reduction in the chances of contracting cancer in women who breastfeed and a decline in neonatal mortality[1,2,47]. As the breastmilk is a natural food source, breastfeeding can also help to achieve a target from SDG 12 (12.3), as it served to diminish food waste and diminish food loss along the food and supply chains[1,2,47]. Good nutrition and health among children promoted by breastfeeding in the two first years of life is essential for a more complete child development, which is one of the targets to be achieved in SDG 4 (4.2: quality education)[1,2,47]. The promotion of high-quality child development promotes the growth of healthier and more prosperous populations, an effect that positively impacts a decline in poverty (SDG 1) and promotes SDG 10 to progressively achieve and sustain income growth[1,2,47].

Discussion

The present study mapped the promotion, protection, and support strategies geared toward working women who breastfeed and demonstrated the potential of these results to achieve SDGs, a theme that is rarely treated in the literature. The results revealed the potential of these strategies to contribute to the achievement of the SDG 5 (gender equality and women's empowerment) and SDG 8 (decent work and economic growth) in a more direct manner, and SDG 1 (no poverty) and SDG 10 (reduce inequalities) in a more indirect manner. The positive impacts of the strategies on the breastfeeding indexes have the potential to achieve SDG 2 (zero hunger), SDG 3 (good health and well-being), and SDG 12 (responsible consumption and production) more directly, as well as SDG 4 (quality education), and SDGs 1 and 10 indirectly.

Most of the studies were conducted in high-income countries, especially in the USA[46], where, although there have been advances to protect and support working women who breastfeed[19,20], the most of the women did not receive paid maternity leave[25] nor breaks during working hours or rooms to breastfeed or to express breastmilk in the workplace[19,22]. According to UNICEF, the richest countries in the world do not offer broad solutions to all families in relation to the duration of paid leave for mothers and fathers[46]. Moreover, it is important to enhance the research agenda on the theme of working women who breast feed in lower-income countries, where the children are at imminent risk of a less than optimum development and where there is also a lack of labor laws and social support during maternity[48].

It was observed that the strategies of axis 1 (promotion) were implemented in only two studies, a much lower frequency when compared to protection and support actions. The interventions for the promotion of breastfeeding include the creation of guidelines for health and nutrition programs in the workplace and campaigns to inform the employers about the potential benefits if they provide support to their workers who breastfeed[2,16]. However, data about the effects of these interventions are rarely reported[2]. Hence, it is clearly important to encourage the scientific disclosure of methods and results of this type of intervention.

In relation to the second axis of strategies (protection), the right to breaks during working hours to express their breastmilk was the most frequent. Expressing breastmilk during working hours, in addition to helping to maintain the production of breastmilk, also alleviates the woman's physical discomfort, allowing for better conditions in which to perform professional activities. The institutions that generally follow this law have rooms reserved for breastfeeding, that is, they also implement support strategies in the company environment[34,36,38,41,44]. These actions can contribute to the promotion of decent work (SDG 8) and to the equity of working conditions for both men and women (SDG 5). Regarding the existence of laws that protect the right to maternity leave, it is understood that these contribute to gender equality and women's empowerment (SDG 5), as they provide the women with the right to receive a source of income while they exercise their reproductive rights[45]. Maternity leave also has the potential to increase employment stability, potentially boosting productivity and resulting in better gains over the long term and in one's career path, which is related to SDG 8. Furthermore, the equity of access to income can contribute to combat poverty (SDG 1) and promote socioeconomic equality (SDG 10) by diminishing unemployment and providing legal social protection[26,35,42]. In Brazil, the Corporate

Citizenship Program, which is a non-mandatory mechanism that concedes fiscal incentives to companies, allows for an expansion of maternity leave from four to six months and of paternal leave from five to 20 days[49].

As regards the third axis (support), studies affirm that when managers and companies adopt strategies, such as providing rooms to express and store breastmilk, or to breastfeed during working hours, this can help to reduce situations of discrimination against working mothers[2,32,34]. Support groups and other educational actions further contribute to improving the support provided by managers and workmates to mothers who breastfeed[2,32,34]. These actions can include the women's partners and significantly influence incentives for breastfeeding[41]. In Brazil, the Primary Health Care (PHC) services receive fathers/partners during pre-natal care and include advice on how to encourage and favor breastfeeding, as well as how to share domestic activities and take care of the child[50]. However, the inclusion of information concerning rights related to breaks and the expression of breastmilk during working hours would also be valid.

Recently, one study analyzed the perception of registered working women in Brazil regarding support rooms for breastfeeding. A favorable relation was found between the rooms and SDGs 5 and 8. The relation between gender equality and women's empowerment (SDG 5) and the support rooms for breastfeeding has been established due to the fact that they help women perform their professional activities without physical and emotional stress, in turn feeling more valued and recognized professionally, allowing them to dedicate themselves to their professional activities, maintaining a certain equality in the workplace when compared to men who do not have these concerns[6]. In relation to decent work (SDG 8), access to rooms provides comfort and well-being, both physical and emotional, for the women to exercise their activities. In addition, it contributes to a good work relationship between employee and employers, given that the women recognize the importance of the rooms in their own performance of work activities, as well as recognize and value the company that meets their needs as a woman, a mother, and a professional[6].

It can therefore be seen that the positive changes in the work context are in line with helping to achieve SDGs 5 and 8. A work environment with these positive changes is friendlier for women who breastfeed, which can be considered decent and safe work. This support can also impact productivity and, consequently, economic growth[6].

As regards the positive impacts of the strategies of the three axes in the increase of the practices of breastfeeding, the evidence is consistent. Many authors have identified the benefits of paid maternity leave in relation to the increase in breastfeeding[2,23,25]. Initiatives of support to maternal breastfeeding, such as the providing of special accommodations to express and store breastmilk, the incentives from workmates and supervisors, and educational actions conducted with the mother and partners are associated with a longer duration of maternal breastfeeding among working women[38] and to the continuity of breastfeeding[41]. A good amount of evidence reinforces the important role of breastfeeding to achieve the SDG 2 (zero hunger). Maternal breastfeeding is considered the primary protection of a child against hunger, and it does not generate costs for the household budget. Breastfeeding is a long-lasting investment in physical, cognitive, and social aspects[51], thus helping to guarantee nutrition and food safety, as well as the child's full growth and development[6]. Many authors have shown the relation between breastfeeding and maternal-child health, a theme from SDG 3 (good health and well-being), given that breastfeeding provides numerous benefits both to the health of the children[1,2,51] and to that of the mothers[1,2,52], also helping to strengthen the affective bond between mother and baby[6]. It is well-known that breastfeeding reduces infant mortality[1,7,51] and can prevent 13% of the deaths in children who are less than 5 years of age worldwide[7].

In relation to SDG 12 (responsible consumption and production), breastfeeding has the potential to achieve SDGs, as it is a sustainable practice. Breastmilk is "a natural and renewable food" of easy access; therefore, it does not cause negative impacts upon the environment[2]. Some workers consider that the use of support rooms for breastfeeding helps to diminish the use of infant formulas[6]. Thus, the higher the breastfeeding rates, the lower the consumption of product packaging to substitute breastmilk, in turn reducing the production of waste and the entire chain of environmental pollution resulting from the production and distribution of these foods[2].

Achieving SDG 4 (Quality education) can be boosted through the increase of breastfeeding practices, since the good nutrition of the child is essential to the child's high-quality development, which is one of the targets of this SDG (4.2)[9]. Moreover, the longer the duration of breastfeed-

ing, the greater the positive impacts upon the intellectual development of the children (average increase of three points in the intelligence coefficient)[2]. These impacts can result in a better performance in school, a better qualification for the work market, a better income in one's adult life, and the reduction of poverty and social inequalities, all themes from SDGs 1 and 10[47].

It is important to highlight that efforts are needed to push countries to include maternity leave in their laws, as well as to have more companies that assume the commitment to provide support rooms for breastfeeding in healthy conditions[7,41,45]. Small and mid-sized companies employ the majority of women around the work, but maternity is one of the primary causes of gender inequality, and maternity management is a common dilemma for small business owners[32]. Thus, it is necessary to encourage and facilitate a friendly work environment for maternal breastfeeding[37], with the institutionalization of a written policy for promotion, protection and support strategies for breastfeeding in the workplace[34]. In this sense, there should be collaborative efforts among managers and employers to guarantee effective strategies, both to improve the outcomes related to decent and productive work for women and gender equality, as well as for the outcomes regarding breastfeeding.

It is understood that the positive results of the strategies to promote breastfeeding to improve one's work performance should be presented to the managers, thereby increasing their adherence to the implementation of company policies[28]. It is also important to highlight that in the major informal work sectors, there are millions of working women who have no maternity protection or who have an inadequate protection[2]. Therefore, the major challenge is to expand promotion, protection, and support strategies for breastfeeding among women who work informally, who are self-employed, and/or who have no specific labor contract.

Final considerations

This critical analysis, based on scientific evidence, allowed us to highlight how the strategies that promote, protect, and support breastfeeding in the work context relate to the promotion of decent work and economic growth (SDG 8) and to gender equality and women's empowerment (SDG 5), in addition to helping to achieve more than six SDGs, such as the reduction of poverty and of social iniquities (SDGs 1 and 10), the reduction of hunger (SDG 2), the guarantee of health and well-being of the woman and child binomial (SDG 3), the full child development and high-quality education (SDG 4), and the environmental impact (SDG 12).

It can therefore be concluded that the actions geared toward working women who breastfeed contribute both directly and indirectly to achieving eight of the 17 SDGs, and should therefore be encouraged and reinforced.

Collaborations

All authors participated in the preparation of the article, read and approved the final version of the manuscript.

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