Knowledge of working lactating women about breastfeeding protection laws before and after educational intervention: a quasi-experimental study

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Abstract

Objectives: to compare the knowledge of lactating workers about the laws that protect breastfeeding before and after an educational intervention.

Methods: quasi-experimental study conducted from May to August 2024 in the Rooming-In wards of a university hospital in Minas Gerais, Brazil. Fifty postpartum women engaged in paid work and intending to breastfeed were included. Knowledge was assessed using a validated questionnaire applied before and after the exhibition of an educational video on current legislation. Means were compared using the paired t test, with significance set at $p \leq 0.05$.

Results: the mean score increased from 5.02±2.31 in the pre-test to 7.72±0.83 in the post-test ($p<0.001$), with more than 92% correct answers after the intervention.

Conclusion: the video intervention effectively increased lactating workers' knowledge about breastfeeding protection laws, representing a simple and applicable strategy in different healthcare settings.

key-words *Breastfeeding, Women working, Right to work, Parental leave, Instructional Film and video, Child health*

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Introduction

Historically, gender roles have assigned women the central responsibility for family care, particularly as mothers and wives.[1] From the 19th century onward, the inclusion of women in the labor market introduced the burden of a double workday and the need to reconcile domestic and professionals.[1,2] Data from IBGE (Portuguese acronym for Brazilian Institute of Geography and Statistics) demonstrate that women dedicate twice as much time to domestic tasks compared to men, and that over half them comprise the workforce.[2] However, motherhood impacts employment retention: after the first child, only 59.3% remain employed; this figure drops to 47.6% after the second child, and 42.1% after the third.[3]

The female overload is reflected in the practice of breastfeeding (BF), a right of both women and children protected by legislation.[4-6] Law number 13.257/2016 promotes exclusive breastfeeding (EBF) for up to six month and the Consolidation of Labor Laws (*Consolidação das Leis do Trabalho* – Portuguese) ensures a 120-day maternity leave.[5,6] However, factors such as the premature return to work and unfavorable working conditions are associated with early weaning.[7] A review indicates that motherhood may be penalizing, affecting income, mental health and the continuation of breastfeeding.[10]

The maintenance of BF is influenced by social determinants (educational attainment, income, support network) and by the actions of employers and managers.[11,12] Lack of awareness or non-compliance with legislation in workplaces constitutes a barrier to breastfeeding, and the literature on breastfeeding mothers' knowledge of their rights is limited.[13,14] The empowerment through information is essential, as knowledge strengthens decision-making.[15]

Accordingly, being familiar with the legislation is essential for breastfeeding mothers to secure their rights and fully practice breastfeeding.[11] However, national studies still do not adequately explore this perspective. Given the benefits of BF, the existence of protective laws and the challenges imposed by maternal employment, it is relevant to assess women's knowledge of their rights.

Therefore, the aim of this study was to compare the knowledge of working breastfeeding mothers regarding the laws protecting breastfeeding before and after an educational intervention.

Methods

This was a quasi-experimental before-and-after study, conducted between May and August 2024, in adherence with the guidelines for non-randomized studies – TRENDS (Transparent Reporting of Evaluations with Nonrandomized Designs).[16]

The study was conducted in the Rooming-in wards of a teaching hospital in inland Minas Gerais, which operates exclusively for the Unified Health System (SUS – Portuguese acronym). The facility, a reference center for high-risk pregnancies and pathological prenatal care, also assists conventional pregnancies of the institution and from municipalities in the Triângulo Sul region, which has a population of approximately 150,000 and provides coverage to neighboring municipalities lacking hospitals.

A pilot study with ten breastfeeding mothers guided the sample size calculation, resulting in a minimum estimate of 34 participants, requiring a 5% significance level and 80% power. Considering potential losses, the plan was to include 40 women. Eligible participants were puerperal women who were hemodynamically stable, had paid employment, hospitalized in the Rooming-in ward, whose newborn was more than hours old, and who were breastfeeding or intending to do so.

We excluded breastfeeding mothers whose newborns had malformations or required intensive care, or whose own severe clinical conditions prevented participation. The final sample comprised 50 women. Data collection consisted of administering a validated questionnaire before and after the educational intervention: the pre-test assessed the knowledge of protective laws for breastfeeding, followed by the showing of a validated educational video (8min28s) and the immediate reapplication of the questionnaire (post-test).

The variables investigated were age, educational attainment, occupation, duration of maternity leave, and knowledge of protective laws for breastfeeding. The validated questionnaire was administered in individual interviews, featuring multiple-choice items whose score was the number of correct answers. Both the questionnaire and the educational video underwent content validation by a panel of experts. Data were tabulated in Excel software and analyzed with SPSS software, employing descriptive statistics and a paired *t*-test to compare the pre- and post-intervention scores, with a 5% significance level. The validation details for both the questionnaire and the video are presented in a supplemental file.

The study was approved by the Research Ethics Committee under protocol number 6.451.972, dated October 24, 2023 (CAAE: 71757123.0.0000.8667).

Results

A total of 50 working breastfeeding women participated in the study. The mean age was 28.4±5.2 years; 70% had, at least, completed high school, 60% had formal

employment and the average time of maternity leave was 119.5±10.2 days.

The questionnaire included12 items on labor laws protecting breastfeeding, previously validated by experts.

There was a significant gain in the knowledge following the educational intervention. The mean score of correct answers increased from 5.02±2.31 in the pre-test to 7.72±0.83 in the post-test ($p<0.001$, paired *t*-test). Furthermore, the proportion of correct answers exceeded 92% in almost all items during the post-test (Table 1).

Discussion

The educational video developed for the study significantly increased working breastfeeding mothers' knowledge of the laws protecting breastfeeding.

Previous studies have demonstrated that educational interventions, in various formats, contribute to greater adherence and continuity of breastfeeding, as well as enhancing the knowledge of its benefits and rights.[17-20] However, few studies have specifically investigated women's legal knowledge, which highlights the originality of this study.

The sociodemographic profile of working breastfeeding mothers resembles findings from a study with domestic workers, where the majority of women are not White, are under 30 years old, do not have higher education, and whose individual income is below two minimum wages.[20] This profile suggests potential precariousness of labor conditions. If these women lack knowledge, they may fail to exercise their constitutional right,[20] which could. consequently, affect their decision-making power regarding the maintenance of exclusive breastfeeding.

In this regard, it is important to reflect on the disparities in breastfeeding rates among social minorities with low socioeconomic conditions. A U.S study indicated that Black women, foreign-born women and other minorities had the lowest rates and were less supported by the enforcement of American laws concerning breastfeeding support.[21] Although there are no studies regarding these disparities in the Brazilian context, motherhood protection is intersected by several factors, including gender, class and race inequalities.[18]

Given the composition of the lactating workforce, the role of the health professional is paramount for maternal-infant health, especially concerning the protective factors for breastfeeding, among them, knowledge of labor laws. It is noteworthy that most women lack this knowledge and legal counseling during pregnancy. Consequently, the American College of Obstetricians and Gynecologists (ACOG) recommends that health professionals provide assistance so that women can better understand their rights regarding work conditions.[22] Furthermore, professionals are reliable sources of information for lactating women, acting as key figures in supporting compliance with the laws protecting breastfeeding.[22] This reinforces the importance of results obtained in this study and the relevance of using different strategies that address the needs of the target population.

Similarly, a study evaluating different health education strategies found that the video format resulted in better comprehension of the presented material by the target audience.[23] The accessible visual presentation, tailored to the target population, facilitates the recall of the transmitted information.[23] It should also be noted that other educational interventions using videos have impacted EBF indicators, leading to an increase in duration,[24-25] suggesting the potential of educational videos.

Given the potential of educational interventions to ensure EBF and extend its duration,[24-25] it is necessary to further reflect on these indicators from the working mother's perspective. A systematic review reported an EBF prevalence of 25% after returning to work, though with high heterogeneity, varying from 2% to 98%, with differences between countries and influence of cultural aspects.[26] Moreover, although maternity leave exists, it does not cover the ideal period for exclusive breastfeeding globally.[27] Therefore, women should be supported to continue it, even upon returning to work. Women who feel supported to maintain breastfeeding in the workplace show greater productivity and job satisfaction.

The limited duration of maternity leave, increased workload and lack of occupational breastfeeding support policies appear to be barriers to the maintenance of exclusive breastfeeding, as well as for maternal mental health. Support from the partner and family, and the opportunity of flexible work hours post-childbirth appear

Table 1

Knowledge of labor laws protecting breastfeeding: pre- and post- educational intervention comparison. Uberaba, MG, 2024.

Questionnaire item	Pre-test (% correct answers)	Post-test (% correct answers)	*p*
Right to 120 days maternity leave	65.0	98.0	<0.001
Breaks for breastfeeding during workday	52.0	96.0	<0.001
Provision of an appropriate space for breastfeeding/pumping	40.0	94.0	<0.001
Protection against dismissal during pregnancy/leave	58.0	92.0	<0.001
Total score (mean± SD)	5.02 ± 2.31	7.72 ± 0.83	<0.001*

*Paired t-test.

to increase both breastfeeding initiation and duration. Women who continue breastfeeding after returning to work seem to experience greater work-family conflict and burdens. Accordingly, the return to work appears to be one of the most significant barriers to exclusive breastfeeding or continued breastfeeding, highlighting the crucial nature of support from coworkers and supervisors, along with the institutional philosophy.[30]

Finally, the significance of knowledge of the legislation is highlighted for empowerment and as a tool to secure their rights. However, studies addressing working mother's knowledge of this legislation are scarce. While studies have evaluated the knowledge and compliance of laws by companies and employers[13-14], even though women are central to the breastfeeding issue, their perspective remains a research gap.

As limitations, we emphasize the absence of the characterization of workers' social security status, the exclusion of adoptive and unemployed women, and the fact that the study was conducted in a single hospital, which restricts the generalizability of the findings. The limited interval between assessments may not reflect longstanding learning, reinforcing the need for longitudinal studies in different contexts. Furthermore, the study material may require future updates due to legislative changes. The scarcity of similar studies also limited the comparability of results, however, at the same time, indicates potential gaps for further research.

The development of the educational video is a key strength of this study, as it represents a simple, low-cost strategy that is highly applicable across various healthcare settings. For the investigated group, the video proved to be a valid resource for improving lactating workers' knowledge of their rights, suggesting that similar interventions can be integrated into clinical practice. Further multicenter and longitudinal studies will be able to verify the long-term sustainability of this effect and support the adoption of this educational technology in breastfeeding promoting policies.

The educational video intervention on breastfeeding protection laws proved effective in increasing the knowledge of working lactating women. This finding underscores the relevance of accessible health education strategies focused on securing rights and promoting breastfeeding, potential for integration in various healthcare settings and for informing public policies.

Authors' contribution

Silva AFS, Castro MLM and Ruiz MT: conceptualization and project, data analysis and interpretation, manuscript writing, critical review of the intellectual content.

Santiago LB, Contim D, Galon T and Linares AM: manuscript writing, critical review of the intellectual content. All authors approved the final version of the article and declared no conflicts of interest.

Data availability

All datasets supporting the result of this study are included in the article.

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