

# Impact of the COVID-19 Pandemic on Breastfeeding in Israel A Cross- Sectional, Observational Study

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## Research Article

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# Abstract

**Background** Since the beginning of 2020, the world has been coping with the COVID-19 pandemic. One group particularly affected by the pandemic were mothers to newborns. The Israeli government imposed three lockdowns. The first lockdown was from March 14<sup>th</sup> until May 11<sup>th</sup> and the most rigid with the strictest rules causes emotional effects like panic and stress. Mothers to newborns coped with new challenges as they stayed without help from the vast family, could not meet breastfeeding support, and stayed longer on maternity leave.

**Methods** A cross-sectional, observational study collected data by an online survey in Israel. The survey was distributed through social media between the 27<sup>th</sup> of April to 11<sup>th</sup> of May 2020. The survey contained 42 multiples choice questions and open questions regarding breastfeeding.

**Results** 580 women participated in the study. Most of the mothers were over 30, mean age 32.55, married with a university degree (81.5%). From 580 participants, 127 (22%) women reported changes in their lactation plans. 85 (15%) responded that due to the COVID-19 pandemic they extended their lactation and 42 (7%) responded they shortened it. We found a significant relationship between extending the plan duration of breastfeeding and returned to work later than expected  $p < 0.001$ . We asked the mothers to rank the steps Israel should take to encourage breastfeeding. The highest agreement with 96% was to extend maternity leave. More than 90% believe that receiving breastfeeding consultations at home and in the hospital will encourage breastfeeding.

**Conclusions** The finding of this study demonstrated that women experienced difficulties during the lockdown. However, some of the women lengthen their breastfeeding, because they stayed home longer than they expected due to the pandemic. This finding should be considered for future emergency situations.

## Background

Since the beginning of 2020, the world has been coping with a global pandemic of COVID-19 disease due to SARS-Cov2 virus. This virus has led to lifestyle and behavior changes including social distancing, quarantine, and lockdown. In Israel, the government imposed the first lockdown on the country's residents from the 14<sup>th</sup> of March until the 11<sup>th</sup> of May. People, other than essential workers, were instructed to stay within 100 meters of their home and schools with the exception of special education.

One group in particular affected by lockdown measures were parents of infants, especially mothers. In many maternity wards, mothers were sent home as early as possible (36 hours) to minimize crowding. Others increased rooming in to prevent exposure in nurseries. Staff shortages due to staff quarantine and moving staff to corona wards led to fewer nurses available for breastfeeding counseling.

Once at home, many in-person medical and breastfeeding support services were offered primarily online. Lockdown rules often removed the possibility of family support, meeting with friends and physical

activity. All of these are likely to have emotional effects especially at this vulnerable time of life. Some women extended their maternity leave, either by choice or because they were laid off or put on an unpaid leave. The unemployment rate in Israel rose from 8.3% in 2019 to a high record of 35% in April 2020 in the general population, and over 40% in the women population. Families with additional children had to manage them all at home.

It is essential to breastfeeding infants, especially during the COVID-19 pandemic. Breastfeeding provides appropriate nutrition, and in the mother's milk, there are anti-infective and anti-inflammatory factors that pass to the baby. In general, Israel has a high rate of breastfeeding initiation. Based on a study of a representative sample of the 2009 birth cohort, 90% of women-initiated breastfeeding in the hospital. According to 2019 data from a nationwide database of maternal child clinics, representing 7% of the population, at one month 50% of women were exclusively breastfeeding and an additional 84% percent were partially breastfeeding. By 6 months, these numbers were 18% and 45% respectively.<sup>6</sup>

Considering this reality, the goal of this study was to examine the effect of the COVID-19 crisis on breastfeeding patterns among mothers to newborns up to the age of 6.5 months in Israel. In addition, the fact that the maternity leave was extended de-facto for many women compared to normal times, provided us with a "natural experiment" that allowed us to examine the effect of maternity leave extension on breastfeeding.

## Methods

### Study design, participants, and data collection

A cross-sectional, observational study collected data by an online anonymous survey in Israel. The questionnaire was distributed in Google form in Hebrew between April 27, 2020 and until May 11, 2020 (the last day of the first quarantine in Israel). The survey form was distributed using individual mother's social media pages on Facebook. Participants were encouraged to re-post the survey link on their own home page on social media to expand the exposure.

The study was approved by the institutional ethics board of Haifa University, Israel. All respondents provided electronic informed consent prior to an initiation of the survey.

Since we used social media to recruit participants, we are using a convenience sample method.

The survey contained 42 multiple choice and open questions regarding maternal age, marital status, number of children in the family, type of birth, feeding habits before and during the crisis. In addition, the questionnaire included questions about social support regarding breastfeeding, the employment status of the mother and her partner, and an open-ended question about the actions that can be taken to promote breastfeeding during this period.

Inclusion criteria: Mothers of single healthy newborns up to 6.5 months old, who breastfed during the COVID-19 period.

Exclusion criteria: Mothers of babies older than 6.5 months, mothers who stopped breastfeeding before the COVID-19 pandemic in February or did not breastfeed at all, mothers of multiples, and unfinished surveys.

## **Statistical analysis**

Data were summarized using descriptive statistics (means, medians, standard deviations, and frequencies) and coded to binary answers. Multivariate logistics regression analysis was performed to determine the factors associated with the decision to breastfeed longer than planned due to the pandemic.

## **Results**

580 women out of 669 responders were enrolled (Figure 1). The basic characteristics of the study population are presented in Table 1. Participant's mean age was 32.55 (std. 4.197) range 21-48. The majority of participants were multiparous. The mean infant age was 3.04 months. Most mothers were still on maternity leave at the time of the questionnaire.

Table 1  
Background characteristics of women who completed the survey:

Data	Category	Count (%)
Mother's age	≤ 21	2 (3)
	22-29	125 (21.6)
	30-39	428 (73.8)
	≥ 40	25 (4.3)
	Total: mean 32.55 st.d* 4.197	
Baby's age (months)	Mean: 3.04, st.d* 1.671	
Parity	First child	203 (35)
	Had other kids	377 (65)
Marital status	Married	572 (98.6)
	Not married	8 (1.4)
Type of birth	Regular	497 (85.6)
	Cesarean	83 (14.3)
Currently employed	yes	70 (12)
	Maternity leave	324 (56)
	No	186 (32)
Partner working status	works	457 (79)
	Does not work	115 (20)
	Do not have a partner	8 (1)
Education	Less than 12 years	2 (0.3)
	High school	30 (5)
	Professional diploma	34 (6)
	Bachelor's degree	276 (47.5)
	Master's degree and above	238 (41)

Participants were asked about their breastfeeding during the quarantine and if they received support from friends, family, and/or breastfeeding consultation since the birth (Table 2). Most of the women had not been in quarantine due to Covid-19 disease or exposure since the birth. Of those who were, less than 1%

were separated from their children during the quarantine. Most women reported support from their partner, mother, mother-in-law, and friends. At the time of survey completion, 74% of the children were breastfed. Most women reported breastfeeding consultation in the hospital, but less than 50% received such consultation after discharge.

Table 2  
Summary of survey answers regarding breastfeeding

<b>Data</b>	<b>Number of Women answered Yes (Percent %)</b>	<b>Number of Women answered No (Percent %)</b>
In quarantine since birth	51 (9)	529 (91)
Separate from the baby	4 (0.7)	578 (99.3)
Taking a stroll to unwind	493 (85)	87 (15)
Breastfeeding consult in the hospital	393 (67.8)	187 (32.2)
Breastfeeding consult at home	261 (45)	319 (55)
Breastfeeding consult in the hospital and at home	216 (37.2)	363 (62.8)
No consult (hospital or home)	438 (75.5)	142 (24.5)

#### Influence on Breastfeeding

Participants were asked to rank in their opinion, the influence of different steps which can influence and encourage breastfeeding. They could fill in their opinion if the step will help, will not help or is irrelevant to them. More than 90% of the women reported a positive impact of extending maternity leave, receiving breastfeeding consultation at home and in the hospital. More than 80% of the women reported a positive impact from instruction on pumping milk, having the opportunity to work from home, receiving telephone breastfeeding consulting and watching guidance videos for breastfeeding. However, only 70% of the women believed virtual meeting groups with other mothers would encourage breastfeeding.

Participants were also given the opportunity to provide free-text answers regarding association of lactation and the COVID-19 pandemic. Out of 580 participants, 96 women answered this question and discussed challenges they faced during the first lockdown. The main issues raised were lack of spare time due to other children in the house, financial difficulty, mental stress, and dissatisfaction with breastfeeding consultations they received.

Women were asked what was the effect of the COVID-19 pandemic on their planned breastfeeding duration. Out of 580 women, 127 (22%) women reported changes in their lactation plans. Of these, 85 (15%) said the COVID-19 pandemic extended their lactation and 42 (7%) said it shortened it.

Table 3  
 Logistic regression analyzing factors associated with longer than planned breastfeeding due to the pandemic.

Criterion	Odds ratio	95% Confidence interval	
		2.50%	97.50%
(Intercept)	0.03	0	0.41
Baby younger than 3.5 months	1	reference	
Baby older than 3.5 months	1.47	0.91	2.36
Marital status- not married	1	reference	
Marital status - married	1.71	0.2	14.59
Baby has siblings	1	reference	
Baby is the only child	1.2	0.73	1.96
Returned to work at the expected time	1	reference	
Returned to work later than expected	2.4	1.47	3.92***
Mother's age	1	0.98	1.02
No academic education	1	reference	
University degree	2.03	0.83	4.97

\*\*\*p <0.001

Table 3 shows the results of a logistic regression analyzing factors associated with longer than planned breastfeeding due to the pandemic. Participants who reported their maternity leave was de-facto extended due to the pandemic were 2.38 times more likely to breastfeed for a longer period than they expected.

## Discussion

This study examined the impact of a tight nationwide lockdown due to the COVID-19 pandemic on mothers to newborns. Only 25% of the women reported that the COVID-19 pandemic influenced their plans to breastfeed.

We also found that women whose maternity leave was extended due to the pandemic were significantly more likely to breastfeed longer than they planned. This result may shed light on the effect of a policy change extending the paid maternity leave in Israel. It provides evidence that extending the paid maternity leave period may result in a longer breastfeeding period.

This finding is in concert with a study from Belgium which found that 91% of the breastfeeding mothers claimed they did not change their infant feeding due to the COVID-19 pandemic. There too, in the few

where it did change their plans, it was to increase breastfeeding. The primary reasons given for the increase were the increased time at home and a desire to protect the infant against the COVID-19 through breastmilk. In this study 8% cited they stopped breastfeeding, mainly consequently from the lockdown. The main reasons provided for a decline in breastfeeding were a reduction in milk production given due to anxiety due to the pandemic and increased childcare responsibilities at home. It should be noted that in the Belgian study, 41% of the respondents were pregnant. In our study, all women were postpartum.

A study conducted in the United Kingdom (UK) among mothers to infants ages zero to twelve months during the pandemic found that 41.8% of women prolonged their breastfeeding due to lockdown. However, 27.0% stopped breastfeeding before they were ready. The main reasons for breastfeeding cessation were given lack of face-to-face support, worries about the safety of breastfeeding and for a few, infection with COVID-19. This study indicated a higher impact of lockdown in the UK population than in Israel. The UK study found a connection between lower education and ethnic background and breastfeeding cessation. Not such connection was found in Israel.

When asked if lack of contact with their family or friends affected their breastfeeding, 16% of women reported a change. The women who claimed lack of contact encouraged their breastfeeding; from this they felt less judgment from the society and pressure if they wanted to breastfeed outside. The women also spent more time with their infant, and it was easier for her and the baby. Those who said they decreased their breastfeeding related it to the effect of isolation on their mood and lack of help from others. Depression during lockdown has been reported in many other studies. It is crucial to give effective social support to influence the mother's ability to breastfeeding. And it is important to encourage breastfeeding specially during respiratory viruses because of the advantages of breastfeeding for the mother and the baby. We found no evidence that the viruses are transmitted via breast milk.

### Limitations

Since we used social media to recruit participants, we used a convenience sample method. As such, the results may not be representative towards the general population.

Our study was sent as a link only in one social media- Facebook. Hence, the study population contains only women who had an internet connection and were actively using this social media. Furthermore, the incidences of higher university degrees are higher than in the regular population.

## Conclusion

The findings of this study demonstrate that women experienced difficulties during the nationwide lockdown. However, most of the women reported that the pandemic did not influence breastfeeding duration. For women for whom it did, the results were divided between situations where lengthened and those were shortened. The difficulties raised should be taken into account for preparing for future emergency situations.

# Abbreviations

United Kingdom

UK

# Declarations

Consent for publication- “Not applicable”

Ethics approval- number 2392 from Haifa university.

Availability of data and materials- “Not applicable”.

Competing interests- “The authors declare that they have no competing interests”.

Funding- No funding was given for doing the study.

## Author’s contributions:

Moran Blaychfeld Magnazi- Researcher and questionnaires author.

Gaya Sartena- Researcher and questionnaires designing.

Michal Goldberg- Statistics advisor

Denna Zimmerman- Professional of maternity child and adolescent

Einat Ofir- Breastfeeding professional

Ravit Baruch-Professional in maternal child

Ronit Endevelt- Professional in nutrition and policy

Acknowledgement: No need for acknowledgement

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## Figures

Figure 1- Excluded criteria

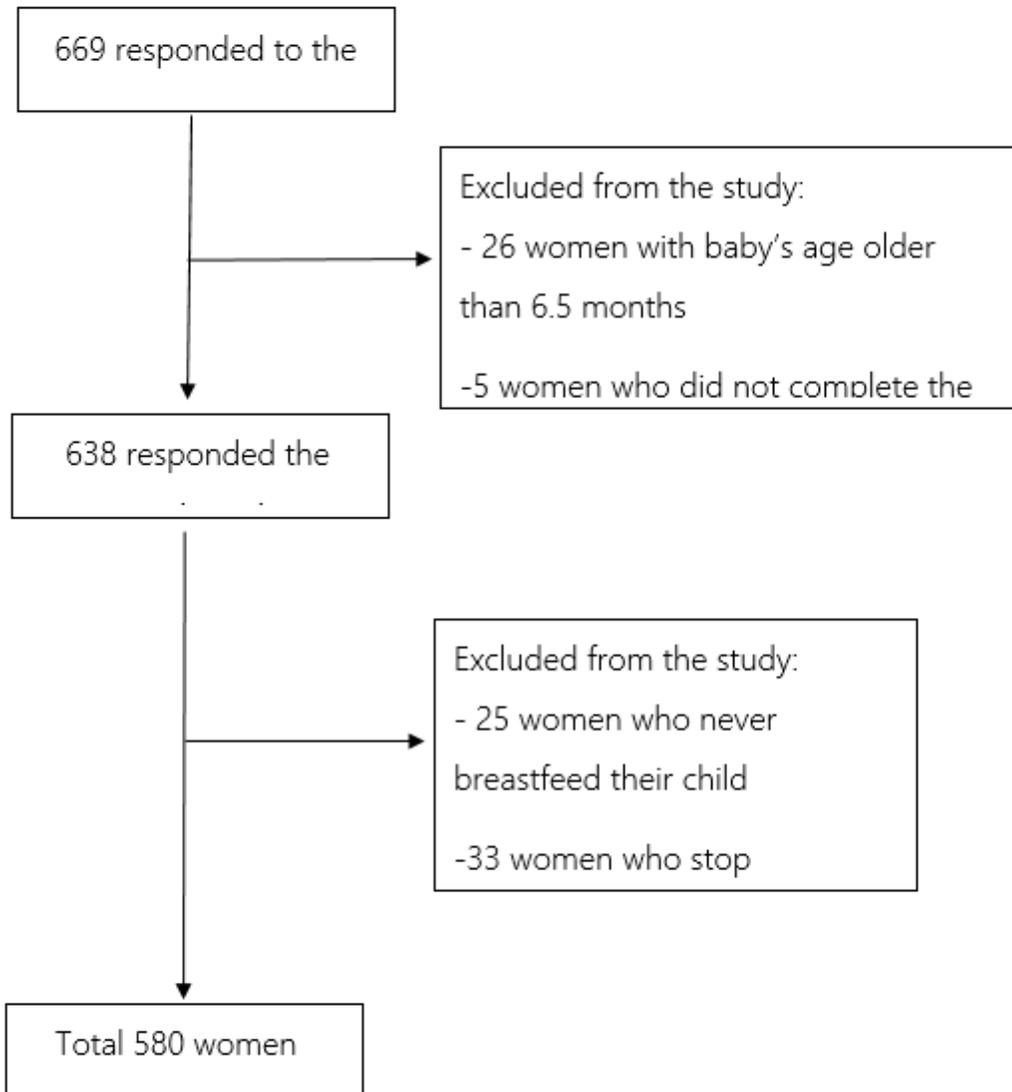


Figure 1

Exclusion criteria flowchart

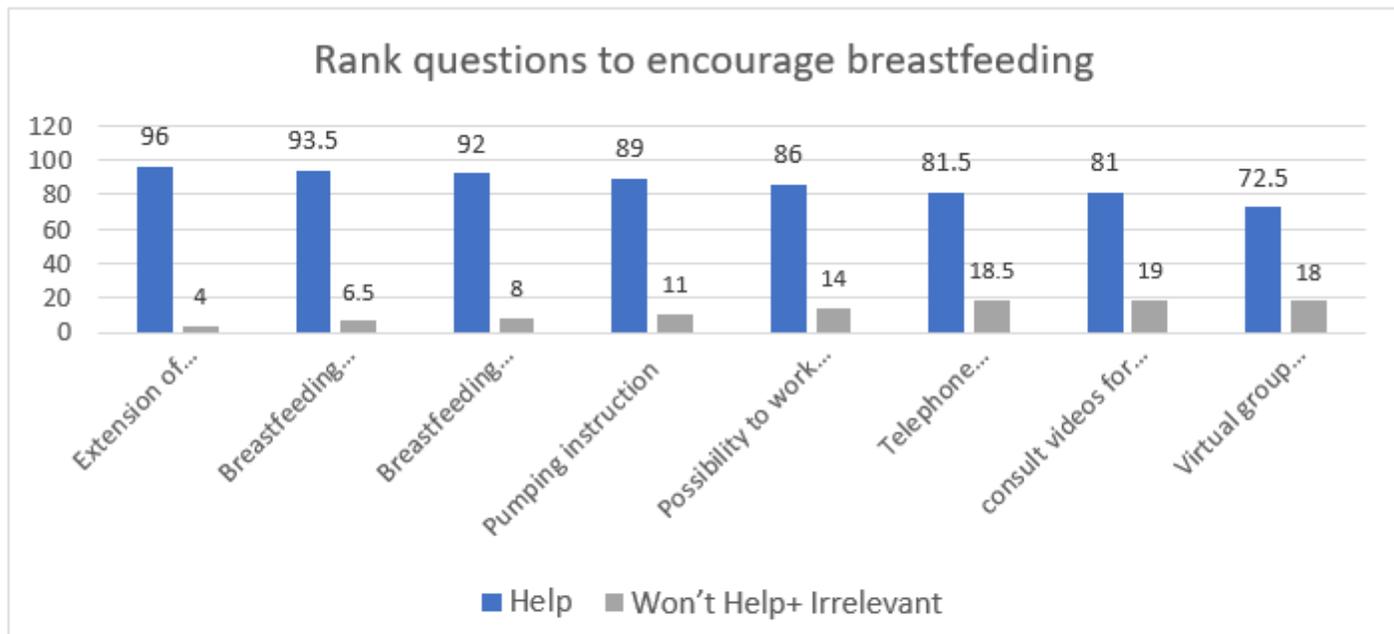


Figure 2: Rank of the questions to encourage breastfeeding

**Figure 2**

Present the rank of questions for potential actions to encourage breastfeeding.