

1 **Impact of the COVID-19 pandemic on breastfeeding support services and women's**
2 **experiences of breastfeeding: a review in high-income countries**

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14 **Abstract**

15 Objective: The aim of this systematic review was to explore the impact of the COVID-
16 19 pandemic on breastfeeding support services and continuation rates.

17 Methods: Electronic searches were undertaken in seven databases: Academic Search
18 Complete, Springer Nature Journals, CINAHL Medline, Health Source:
19 Nursing/Academic Edition, Masterfile premier, and SocINDEX. Publications following
20 the COVID pandemic between January 2020 and March 2022 were searched for using
21 the following keywords: impact or effect or influence and breastfeeding support and
22 breastfeeding continuation and COVID-19 or coronavirus. Fifteen studies were
23 included for investigation and extracted to identify seven themes related to
24 breastfeeding support during COVID-19.

25 Results: Factors which impacted breastfeeding support during the COVID-19 pandemic
26 included separation, lack of skin-to-skin contact, fears of the pandemic, the impact of
27 the pandemic on breastfeeding experiences, online breastfeeding support, insufficient
28 support, and the need for additional support. The pandemic mostly influenced
29 breastfeeding support negatively, with a small exception occurring where some
30 mothers experienced lockdown as positive since it protected the mother-infant dyad
31 from unwanted visitors. Virtual breastfeeding support was introduced in many contexts;
32 however, practitioners and mothers reported that this could not replace the need for
33 face-to-face support.

34 Conclusions: Breastfeeding is a lifesaving intervention, especially in the face of a
35 disruption such as a pandemic. This work highlights the need for clear, consistent, and
36 evidence-based information about risks, and for key practices to be maintained
37 including not separating mothers and infants, promoting skin-to-skin contact, and
38 ensuring availability of high-quality breastfeeding support.

39 **Introduction**

40 The COVID-19 pandemic has disrupted everyday life since December 2019 (1-3) when
41 the outbreak began in Wuhan, central China. Apart from mortality and morbidity, the
42 pandemic has also impacted all areas of health service delivery including breastfeeding
43 (4). At the start of the pandemic, the medical and scientific community lacked information
44 regarding the route of transmission of the virus, thus many preventative measures were
45 launched to protect mothers and babies. When it became evident that it is a respiratory
46 virus, the next question was whether mothers could infect their infants during
47 breastfeeding.

48 Leaning towards the side of caution, exposed or infected mothers and babies were
49 separated to prevent potential transmission (5). As more evidence became available
50 highlighting that infants are unlikely to contract the virus, some practices changed and
51 guidelines were published towards zero separation (6). However, despite these
52 guidelines, some facilities did not support or enable breastfeeding particularly when
53 mothers were exposed to or have contracted COVID-19. During the COVID-19
54 pandemic, breastfeeding support services, especially in hospitals, were limited if not
55 ceased. The reason was to prevent potential transmission of the virus. Hospitals and
56 healthcare facilities restricted all non-essential staff's access to their institutions. In some
57 cases, this even meant that parents were not allowed into the neonatal intensive care
58 unit (NICU) for skin-to-skin contact or breastfeeding (7-10). A review by Lalor and
59 colleagues concluded that "parental experiences highlighted how maternity care during
60 the COVID-19 pandemic did not adhere to World Health Organization standards of
61 quality maternity care" (11).

62 Breastfeeding and mother-infant closeness are strongly connected. Mother-infant
63 separation therefore presents several challenges and complications. In separation, the
64 infant is not being provided with the health benefits associated with breastfeeding, such

65 as immuno-protection, transfer of antibodies (12), protection against diarrhea and severe
66 respiratory syncytial virus (RSV) and hospitalization (13). Separation of the mother and
67 infant proposes a risk for malnutrition and even death (13, 14). While separation
68 inevitably decreases breastfeeding rates, the mother-baby dyad is also deprived of the
69 benefits of stimulating hormones and bonding (15-17). In order to protect and support
70 breastfeeding, mothers and infants should never be separated, thus avoiding separation
71 has been an essential component of breastfeeding support programs such as the Baby-
72 Friendly Hospital Initiative (BFHI) (18) and Neonatal-BFHI (19). Further, immediate and
73 early skin-to-skin contact is strongly recommended to support the initiation of
74 breastfeeding (20).

75 Breastfeeding support is rooted within international and national policies and
76 recommendations, but in everyday life, it may range from mothers receiving peer or
77 partner support to structured support provided by a professional (21). In this paper,
78 breastfeeding support refers to practices and policies in birth hospitals and after
79 discharge, as well as online methods such as healthcare professionals providing group
80 or one-to-one breastfeeding support via Zoom, Microsoft Teams or other digital
81 platforms.

82 Several practice advisories or guidelines to support breastfeeding, especially during a
83 pandemic such as COVID-19, are available (19); however, little has been published to
84 date to evaluate the influence of the pandemic on breastfeeding support and
85 continuation. This review aimed to explore the impact of the COVID-19 pandemic on
86 breastfeeding support services and continuation rates across the world and in all
87 settings.

88 **Materials and Methods**

89 This review was conducted in accordance with the Preferred Reporting Items for
90 Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidance (21). The review

91 question was formulated using the PIO format: Population: breastfeeding mothers,
92 Intervention: COVID-19 pandemic, Outcome: breastfeeding support and continuation.
93 The review question was: *How did the COVID-19 pandemic impact breastfeeding*
94 *support services and continuation rates?*

95 **Data sources and search strategy**

96 The following seven electronic databases were searched: Academic Search Complete
97 (n=102), Springer Nature Journals (n=70), CINAHL with full text (n=13), Medline (n=6),
98 Health Source: Nursing/Academic Edition (n=5), Masterfile premier (n=3), and
99 SocINDEX with full text (n=1). The total number of hits at this point was 200. Keywords
100 for this search (identified after various pilot searches) were impact or effect or influence
101 and breastfeeding support and breastfeeding continuation and COVID-19 or
102 coronavirus. The review question and keywords were agreed upon by all reviewers. An
103 academic librarian was also consulted to support the development of the search strategy.

104 As we were only interested in studies undertaken in relation to the pandemic, we focused
105 on studies published from 2020 and up to when the initial searches were undertaken
106 (March 2022). Additional articles from reference lists were identified during the critical
107 appraisal process and any suitable articles published between March and May 2022
108 were included (see Fig. 1: PRISMA diagram).

109 **Inclusion and exclusion criteria**

110 Studies were included if they discussed breastfeeding support (provided by healthcare
111 professionals or peer-to-peer support) during or related to the COVID-19 pandemic and
112 reported on primary research, discussion pieces as well as reviews. Studies reporting on
113 breastfeeding rates and the effect of support interventions during COVID-19 were also
114 included. Only studies written in English were included, since it is the language shared
115 by all the review team members. However, no studies in other languages were located.

116 Articles were excluded if they only suggested that breastfeeding support should be
117 provided, but did not actually explore the effect of support, or if the support did not refer
118 specifically to the COVID-19 pandemic (refer to Figure 1).

119 **Screening**

120 In Figure 1, the number of articles identified and excluded at each stage of the screening
121 process is detailed. Although 200 articles were originally identified from searching the
122 databases, 137 were duplicates and excluded before screening, using the database
123 search engine of the first author's institution. A further 37 articles had titles that were
124 clearly not answering the review question and were excluded. The initial screening
125 search and deduplication were undertaken by WL. Two reviewers (WL and HNV)
126 independently reviewed the titles and abstracts of the remaining 26 articles to determine
127 whether full text should be read. While some of the articles had titles that suggested it
128 may be relevant to the review question, upon reading the abstract, a further 13 were
129 excluded. The full text of the remaining 13 articles was screened by WL and HNV, and
130 another seven articles were excluded for reasons such as the articles discussing human
131 milk banking, maternal health, the media, or not discussing COVID-19 or breastfeeding.
132 At this point, six articles were eligible for inclusion in the critical appraisal phase.

133 The reference lists of eligible articles were then searched, and another 21 articles were
134 identified. Seven were excluded at the abstract review stage for similar reasons as
135 reported above. The full texts of the remaining 14 articles were read with a further three
136 excluded for not discussing breastfeeding support or discussing hospital-related issues.
137 Overall, this led to a final sample of 17 articles included for critical appraisal.

138 **[Preferred placement of Fig. 1: PRISMA diagram]**

139 **Study quality assessment checklists and procedures**

140 The Johns Hopkins tools for research and non-research were used to determine the rigor
141 and quality of each study (with permission) (22). These tools assess research design,
142 sampling, measurement, ethics, and outcomes. The evidence level of each article is
143 rated from Level 1 being the highest level of evidence demonstrated through randomized
144 controlled trials (RCTs), systematic reviews and meta-analyses, to Level 5 being the
145 lowest and including experiential and non-research evidence, such as integrative
146 reviews, literature reviews, quality improvement and program evaluations, as well as
147 case reports and expert opinions. Within each of these levels, a quality rating was also
148 given as: A – High quality, B – Good quality or C – Low quality or major flaws. Articles
149 with a C rating were omitted from the review. Two reviewers (WL, HNV) independently
150 rated the quality of all 17 articles with agreements made by consensus. Two articles were
151 excluded due to poor quality of evidence, leaving a total of 15 articles for inclusion. Their
152 evidence level and quality ratings are presented in Table 1.

153 [Preferred placement of Table 1: Evidence level and quality rating of articles included for
154 synthesis]

155 **Results**

156 **Data extraction strategy**

157 Fifteen studies of good quality and high levels of evidence were included as the final
158 sample for this review. Data were extracted into a data extraction table (EB, GT)
159 according to the following elements: Primary author(s), year and country of publication,
160 purpose, design, sample, and key findings.

161 **Synthesis of the extracted evidence**

162 GT analyzed the data by organizing the information into descriptive themes and
163 subthemes, with all analytical decisions shared and agreed upon by all authors. Below,
164 seven themes are presented that detail the key factors which impacted breastfeeding

165 support and women's experiences of breastfeeding during the COVID-19 pandemic:
166 separation, lack of skin-to-skin contact, insufficient support, online breastfeeding
167 support, the impact of the pandemic on breastfeeding experiences, fears of the
168 pandemic, and the need for additional support.

169 **Separation**

170 Some of the papers highlighted the impact of separation between mothers and infants
171 and between mothers and birth companions on breastfeeding rates (23, 24). The papers
172 by Gribble et al. (25) and Brown and Shenker (26) highlighted the unnecessary and
173 detrimental impact of separating mother-infant dyads after birth, and particularly for those
174 with additional vulnerabilities due to being born premature and/or sick, with Gribble et al.
175 (25) arguing how this occurred "despite no evidence of risks". In the paper by Brown and
176 Shenker (26), approximately a quarter of mothers who had an infant in the neonatal unit
177 were told that they could not visit their infant, and this lack of contact was significantly
178 associated with breastfeeding cessation.

179 The study by Del Río et al. (10) found a strong positive correlation in breastfeeding rates
180 among mothers who had a companion present during the birth ($r = 0.833$), and a strong
181 negative correlation between the percentage of newborn infants who were receiving
182 exclusive breastfeeding at discharge and those who were separated from their mothers
183 at birth ($r = -0.862$). Gonçalves-Ferri et al. (9) undertook a cross-sectional multicenter
184 study at 24 hospitals in Brazil. They found that distancing and breastfeeding
185 recommendations were carried out in all hospitals, with one hospital recommending dyad
186 separation, and in the majority (83.3%), a companion was forbidden.

187 **Lack of skin-to-skin contact**

188 Several studies reported on how the pandemic had restricted mother-infant skin-to-skin
189 contact after birth. Brown and Shenker (8) found that a small number of women surveyed

190 were not supported to have skin-to-skin contact with their infant (7.8%) or to breastfeed
191 soon after birth (4.6%). Del Rio et al. (10) found a strong positive correlation between
192 the percentage of newborn infants who received exclusive breastfeeding at discharge
193 and infants who received immediate skin-to-skin contact after birth. Gonçalves-Ferri et
194 al. (9) also reported that most of the hospitals surveyed (79.1%) did not encourage or
195 enable skin-to-skin contact immediately after birth. Moreover, Spatz et al. (7) highlighted
196 that despite recommendations from the WHO to continue to promote early, direct
197 breastfeeding and skin-to-skin contact, these recommendations were not being followed
198 in the clinical setting.

199 **Insufficient support**

200 The lack of professional support during the pandemic was highlighted, often associated
201 with limited in-person breastfeeding support in the hospital unit and within the community
202 (23, 24, 27, 28), with some women reporting that they felt they were doing it “on their
203 own” (29). While women were generally able to access different types of support, e.g.,
204 health professionals and lactation consultations (30), the quality and quantity of support
205 were restricted. However, it interesting to note that in the study by Vazquez-Vazquez, it
206 was found that while 45% of women reported insufficient feeding support during
207 lockdown, between 57% and 69% of women reported decreased feeding support before
208 lockdown (28).

209 Spatz et al. (7) argued how families were not receiving breastfeeding support largely due
210 to a lack of knowledge and miscommunication about the impact of COVID-19 on human
211 milk, and how the care of childbearing families had been de-prioritized during the
212 pandemic. Brown and Shenker (26), in a survey of United Kingdom (UK) mothers,
213 highlighted how a lack of professional support was the most common reason for
214 breastfeeding cessation. While only small numbers referred to a lack of support in
215 hospital (21.2%), 70.3% of the sample highlighted a lack of face-to-face contact once

216 home. Mothers reported that they struggled to relay their issues over the telephone and
217 missed having someone observe their breastfeeding to help rectify any positioning
218 issues. There were complaints of women not being given information on expressing milk,
219 with under 40% perceiving that they received sufficient practical or emotional support,
220 while those who considered that they had sufficient support were the most likely to
221 continue breastfeeding. They also found that not being able to attend breastfeeding
222 support groups and the closure of baby clinics were significantly associated with
223 breastfeeding discontinuation. From those who had older children, 67% considered that
224 they had had less support during the pandemic than with their other children.

225 A survey study undertaken in America by Schindler-Ruwisch highlighted difficulties
226 among lactation professionals in providing support when wearing personal protective
227 equipment (23). For example, they referred to how the protective mask made their
228 speech muffled and that they were unable to use their mouths to demonstrate infant
229 latch, thereby negating the support they could provide. The Brazilian study by
230 Gonçalves-Ferri et al. (9) found that 98.5% of the hospital services surveyed allowed
231 breastfeeding while implementing respiratory hygiene practices to prevent transmission
232 of COVID-19. However, most did not encourage breastfeeding in the first hour after birth
233 (87.5%).

234 Some of the studies reported the impact of early hospital discharge, thereby limiting the
235 amount of support to help women establish breastfeeding (7, 23, 28). In the study by
236 Gonçalves-Ferri et al. (9), it was found that hospital discharge was recommended within
237 24 to 48 hours in all but one hospital, whereas prior to the pandemic, neonatal discharge
238 occurred after more than 48 hours. Furthermore, while all the hospitals surveyed
239 recommended maintaining breastfeeding at home, there was a lack of community
240 support reported in 83.3% of the hospital sites.

241 A particular issue reported in the study by Brown and Shenker related to a lack of
242 specialist support in diagnosing and dividing tongue ties (26). This meant that women
243 were having to express due to pain or poor latch, introduce formula, and stop
244 breastfeeding prematurely. Issues of newborn weight not being taken consistently,
245 coupled with a lack of knowledge of infant weight leading to increased use of formula,
246 were also reported in the study by Schindler-Ruwisch (23).

247 **Online breastfeeding support**

248 The move to providing online breastfeeding support via virtual visits had mixed results in
249 some of the studies. For example, the study by Rice reported that online breastfeeding
250 support was uniformly experienced as unhelpful (27). In the study by Schindler-Ruwisch
251 (23), however, most participants reported that their patients largely preferred telehealth
252 contacts (phone, FaceTime, Duo, Zoom, MyChart, WhatsApp, or HouseParty app). The
253 professionals who provided the groups felt that they were less effective (23).
254 Furthermore, in the review by Turner and colleagues (24), it was highlighted how mothers
255 expressed difficulties in receiving professional help with breastfeeding techniques online.
256 Conversely, in the paper by Feinstein (31), converting an in-person breastfeeding
257 support event to a telehealth environment, with parents viewing online breastfeeding
258 sessions, was positively received. The authors argued that online methods may provide
259 a solution for better breastfeeding support as they increased accessibility to free, high-
260 quality telehealth care. Although, they acknowledged the challenges of mothers not
261 being as comfortably able to demonstrate breastfeeding problems to the lactation experts
262 when compared to face-to-face contact.

263 **Impact of pandemic on breastfeeding rates and experience**

264 Several studies explored how the pandemic has impacted the prevalence of
265 breastfeeding initiation and duration and women's experiences of breastfeeding. Brown
266 and Shenker (8) asked participants in the UK whether they felt the lockdown had a

267 positive or negative impact on their breastfeeding experience. Overall, 41.8% felt it was
268 positive, 29.5% neutral, and 27.0% negative. A further 1.7% were unsure of its impact.
269 The authors found little difference in mothers' intentions to never introduce formula
270 between those who gave birth before (70.6%) or after (67.7%) the pandemic.
271 Furthermore, similar percentages of women who gave birth before and after the
272 pandemic breastfed exclusively for longer than intended. This was similar to the findings
273 by Vazquez-Vazquez who found that breastfeeding initiation did not differ between pre-
274 and post-pandemic groups (28). However, in the study by Latorre et al. (32) in Italy, it
275 was found that when comparing breastfeeding practices among women who gave birth
276 before or during pandemic, the use of infant formula was higher during the pandemic,
277 and exclusive breastfeeding rates were reduced (74.2% vs 32.8%). Furthermore, the
278 study by Sakalidis et al. (33) undertaken in Australia reported a reduction in the odds of
279 exclusive breastfeeding as infant age increased, associated with low milk supply. Turner
280 et al. (24) explored how the pandemic restrictions and positive COVID-19 status of the
281 mother impacted breastfeeding initiation, duration, and mothers' self-reported
282 breastfeeding experiences in Australia, New Zealand, Canada, the UK and the United
283 States of America (US). This work found that seven US studies and one UK study linked
284 the pandemic to changes in breastfeeding initiation and duration, and that in most studies
285 including COVID-19-positive mothers, a reduction in breastfeeding initiation and duration
286 was observed.

287 Some studies highlighted how certain groups of women had been disproportionately
288 affected in their ability to access breastfeeding support during the pandemic. These
289 included minority groups, under-/uninsured, those who did not speak English as their first
290 language, groups with higher rates of COVID-19, and COVID-19-positive women (23).
291 Although, Vazquez-Vazquez (28) found that among younger women (who are generally
292 those less likely to breastfeed), 59% of infants were exclusively breastfed/mixed-fed

293 during lockdown, compared to 39% before lockdown. In the study by Snyder (30), women
294 also reflected on how breastfeeding would be particularly problematic for first-time
295 mothers, with one mother stating:

296 “It was hard for me to know if it was because of like COVID-19 but I really didn’t
297 get help at all at the hospital. She did latch on pretty easily, but no one came in
298 to help or you know anything like that. I never got any support at the hospital”
299 (31, Caucasian, teacher).

300 Positive improvements in breastfeeding rates and experiences during the pandemic
301 were associated with visitor restrictions in the postnatal units and within the home (29),
302 greater partner support (24), and more time at home with infants to establish
303 breastfeeding (23, 29, 30). There were also accounts of mothers being more likely to
304 breastfeed due to limited formula availability or wanting to provide immunity to their
305 infants from COVID-19 (23, 30). Turner et al. (24) also reported that while mothers did
306 report positive experiences with breastfeeding, these were mentioned less frequently
307 than negative experiences.

308 **Fears of the pandemic**

309 A few of the studies described pandemic-related fears. Brown and Shenker (26)
310 highlighted how just over 30% of the women surveyed did not contact health
311 professionals for support due to pandemic-related anxieties. A very small percentage of
312 women (~4%) were told that breastfeeding might not be safe during COVID-19, and ~3%
313 were advised that they would not be “*allowed*” to breastfeed if they had symptoms (26).
314 Just over 20% of mothers were worried about the safety of feeding, and 6.5% stopped
315 breastfeeding due to COVID-19 symptoms. Furthermore, those who had stopped
316 breastfeeding were more likely to have been told by a health professional, friends, and/or
317 family that breastfeeding was not safe or that breastfeeding would not be allowed with
318 symptoms of COVID-19.

319 Increased stress as well as isolation among new mothers were reported in the papers
320 by Snyder (30) and Wilson (29). In the review by Turner et al. (24), they highlighted how
321 some women had fears of developing low milk supply due to the stress of living in the
322 pandemic. The lactation staff in the paper by Schindler (23) also expressed concerns
323 that breastfeeding was an additional stressor in an already stressful life period.
324 Moreover, Spatz (7) expressed fears that these fundamental changes in the care of
325 childbearing families imposed by social distancing and lockdown measures would be
326 permanently adopted.

327 **Need for additional support**

328 Several of the papers highlighted the need for additional support to rectify harmful
329 practices instilled during the pandemic. This included re-lactation support, use of donor
330 milk, appropriate use of formula, responsive formula feeding, sensitive caregiving, and
331 attachment development (25). Sakalidis et al. (33) also highlighted the need for good
332 mental health support due to the number of women who suffered psychological issues
333 during the pandemic.

334 Spatz et al. (7) argued that the need to promote messages of breastfeeding is a lifesaving
335 intervention and all families should have equal access to lactation education and
336 practical support. Hirani et al. (34) described innovative practices that highlight the
337 importance of engagement and collaboration with community partners to protect
338 breastfeeding during the pandemic. They developed an animated video on
339 “Breastfeeding during COVID-19: An Information Guide” and described how an
340 informational, evidence-based, user-friendly e-resource that shares knowledge on the
341 benefits of breastfeeding can help sustain breastfeeding in areas where access to
342 healthcare services is compromised. Turner et al. (24) stated how professional
343 recommendations need to reflect best evidence and how a precautionary approach can
344 lead to breastfeeding being deprioritized. They suggest further work to evaluate how the

345 pandemic affected professional guidelines to help protect breastfeeding during future
346 pandemics.

347 **Discussion**

348 For many years, the international professional community has influenced culture in all
349 maternity care settings towards positive breastfeeding practices with initiatives such as
350 the Baby-friendly Hospital Initiative, lactation consultant services, and more. However,
351 the pandemic seems to have disrupted these breastfeeding successes both by limiting
352 mother-infant closeness and the de-prioritization of support services. The lack of
353 knowledge and continuous misinformation about the pandemic and its potential impacts
354 for breastfeeding have affected mothers and families around the world.

355 Evidence from this review highlights that mothers and infants have been **separated**
356 against evidence of any need therefore during the COVID-19 pandemic (9, 10, 23, 24).
357 Further, **skin-to-skin contact has been restricted**. While the intention was to protect
358 mother-infant dyads and families, as these practices were in contrast with available
359 evidence, they created much more far-reaching risks. There is clear evidence on the
360 benefits of couplet care, where the mother-infant dyad is never separated. With close
361 proximity and skin-to-skin contact, not only is breastfeeding ensured, but it can help the
362 bonding process and facilitate a positive mother-newborn, two-way relationship where
363 milk production is enabled, the newborn is protected with powerful life-enabling nutrition,
364 and the mother recovers faster from childbirth (35). Closeness can help to stabilize the
365 hormonal balance of both mother and infant and supports mental health (36). Keeping
366 the family together can reduce feelings of stress, isolation, anxiety, and depression.
367 There is a high risk for this disruptive policy that surfaced during the pandemic crisis to
368 subtly become standard practice.

369 Mothers reported both **positive and negative experiences** of breastfeeding during the
370 pandemic. Some mothers enjoyed lockdown, since it brought the family into a cocoon of

371 peace and calm. Mothers felt that they could focus on their newborn and practice
372 breastfeeding without the disruptions of guests and visitors. Positive factors also included
373 greater partner support. However, there were mothers who felt isolated and afraid (23,
374 26). They feared, for instance, that they would develop a low milk supply due to the stress
375 of living in the pandemic (24). It was evidenced in the wider literature that mothers need
376 face-to-face (peer and professional) support to ensure successful breastfeeding (37), but
377 the pandemic did not provide these circumstances. A lack of breastfeeding support
378 contributed towards early breastfeeding cessation, before the mothers felt ready to do
379 so.

380 Good **mental health** and quality lactation services are required to support breastfeeding
381 continuation (33).

382 **Breastfeeding support services** changed during the pandemic (23). Mothers reported
383 a lack of care provided in the hospital (24) and in the community (7, 23). Breastfeeding
384 support visit frequency decreased, as did referrals to lactation support (23).

385 Some breastfeeding support transferred to **online modes** (28). Some professionals
386 reported that their breastfeeding women preferred telehealth contact sessions, although,
387 in one study, 70% of professionals who provided support via online groups felt they were
388 less effective compared to in-person groups (23). Mothers also reported that the online
389 breastfeeding support they received was inadequate (24), which could be due to
390 difficulties in receiving remote professional help with breastfeeding techniques (23). It is
391 noteworthy to highlight that although some studies verified positive aspects of the
392 pandemic, these positive aspects, for example, online support, are restricted to families
393 with better socioeconomic conditions. This suggests that the pandemic affected
394 vulnerable families more seriously.

395 Midwives and nurses are in key positions to support breastfeeding during exceptional
396 circumstances (5). Lessons learnt from this pandemic should be shared to enable

397 professionals to stand in guard of evidence-based practices to promote successful
398 breastfeeding and to ensure that families have the best start.

399 **Limitations**

400 In this review, data and publications were only available for high-income countries. The
401 authors acknowledge this finding and highlight that this review did not intentionally
402 exclude low- and middle-income countries (LMICs) but recognize that this may relate to
403 slower rates of recording and publishing from these settings. The lack of evidence from
404 LMICs provides a gap in evaluating the impact across different contexts and should be
405 further explored. Several practice advisories were published since the COVID-19
406 pandemic started; however, less research on the actual impact of the pandemic in
407 general is available.

408 **Recommendations**

409 This review highlights the importance of women and professionals being provided with
410 clear and consistent evidence-based guidance regarding the actual risks of transmission.
411 It also calls for zero separation, especially during a pandemic, to ensure optimal initiation
412 and continuation of breastfeeding and to help protect parental mental health. Strategies
413 evidenced to be effective in supporting breastfeeding need to be continued, such as
414 promoting and enabling skin-to-skin contact and providing early and proactive
415 breastfeeding support (virtual, if necessary, and face to face, where possible). Although
416 the available published articles reported on high-income countries, the support needs to
417 be observed in low- and middle-income countries as well and research to determine the
418 impact of the COVID-19 pandemic in diverse settings is needed.

419 **Conclusion**

420 Many publications on practice advisories for breastfeeding support from the World Health
421 Organization to country and hospital level are available. However, to date, there is limited
422 research that explores and measures the actual practices and impact of the pandemic
423 on breastfeeding, particularly in low- and middle-income settings. Good research
424 evidence on the protective benefits of breastfeeding, the importance of zero separation,
425 the importance of early and proactive support towards successful initiation, and the
426 continuation of breastfeeding is common knowledge and included in recommended
427 practice over the past decades. However, these practices were largely neglected once
428 the COVID-19 pandemic began, and preference was given to precautionary measures.
429 Breastfeeding has been established as a lifesaving intervention in all environments.
430 Breastfeeding should be guiding the medical care of the newborn and young infant,
431 especially in the face of a pandemic, to successfully prevent and decrease mortality and
432 morbidity of mothers and infants. Breastfeeding is the protective measure infants require
433 for a good start in life and contributes greatly to maternal health and should therefore be
434 protected and supported.

435 **Conflict of Interest**

436 The authors declare that they have no conflicts of interest.

437 **Ethical Issues**

438 Not applicable.

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