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1 ABSTRACT

2 **Background:** The World Health Organization recommends exclusive breastfeeding as the
3 main source of nutrition for infants during their first six months of life. However, despite this
4 well-known recommendation, not all mothers breastfeed, whether partly or fully, during this
5 time.

6 **Objective:** The aim of this systematic literature review was to compile evidence regarding
7 sociodemographic, physical, mental, and social factors that influence breastfeeding mothers
8 to stop breastfeeding before the infant reaches six months.

9 **Search method:** A systematic search was conducted in four databases.

10 **Selection criteria:** Studies with quantitative research were included.

11 **Data collection and analysis:** Totally, 186 abstracts were read, 83 seemed relevant but 18
12 were found to be duplicates. Finally, 27 articles met the inclusion criteria and were included.

13 The quality assessment was done with a quality assessment template from the Swedish
14 Council on Technology and Assessment and the grading of the result was carried out
15 according to GRADE

16 **Results:** The association of breastfeeding cessation between the mother`s young age, low
17 level of education, return to work within 12 weeks postpartum, caesarean birth and
18 inadequate milk supply was found to have a low level of evidence. The link found between
19 depressions among the mothers with the cessation of breastfeeding was found to have a very
20 low level of evidence.

21 **Conclusions:** Sociodemographic factors appeared to have caused cessation of breastfeeding
22 in some of the included articles. The preventive work should focus on how to improve the
23 knowledge of health-care professionals and targeted interventions must address mothers who
24 are at risk of ceasing breastfeeding before the recommended time.

25 **Keywords:** breast feeding, review, risk factors, weaning

26

27 INTRODUCTION

28 According to World Health Organization [1], exclusive breastfeeding is recommended for
29 infants during their first six months of life. This should be continued in conjunction with the
30 appropriate complementary food for up to two years or beyond.

31 Studies have shown that breast milk protects against obesity later in life [2, 3]. The
32 mechanism underlying this protection could be related to a greater sensitivity to the amount
33 of food given to the child. It could also be the result of breast milk containing lower levels of
34 insulin compared to infant formula [2]. Studies showed that breast milk contains protection
35 against several infections such as gastroenteritis, upper respiratory infections, and ear
36 infections [4, 5]. Another study showed that infants who were not breastfed at four months,
37 had increased odds of needing health-care [6] . Furthermore, as the child grows, breast milk
38 has been found to offer protection against some forms of cancer [7], and breast milk has also
39 been associated with better cognitive development of the child [8]. Exclusive breastfeeding
40 among mothers has shown to be associated with postpartum maternal weight loss [9] as well
41 as reduced rates of ovarian cancer, reduced premenopausal breast cancer, type 2 diabetes and
42 heart disease [10].

43 Despite all the aforementioned health advantages, breastfeeding is sometimes ceased before
44 the recommended time. There are several possible reasons for this, such as difficulties with
45 lactation, inadequate infant weight gain, medical indications regarding the mother, or due to
46 the great effort it takes expressed out milk [11].

47

48 OBJECTIVE

49 To the best of our knowledge, no earlier systematic reviews have focused on evidence
50 grading related to sociodemographic (e.g. mother's age, and level of education), physical
51 (e.g. birth complications, and obesity), mental (i.e. depression), and social factors (e.g.
52 intimate partner violence and support) and its' contribution to the cessation of breastfeeding
53 before six months. Since the recommendation is exclusive breastfeeding until the infant is six
54 months of age, reasons why mothers stop breastfeeding earlier must be considered to be
55 important. Therefore, the aim of this systematic literature review was to compile evidence
56 regarding sociodemographic, physical, mental, and social factors that influence breastfeeding
57 mothers to stop breastfeeding before the infant reaches six months.

58

59 METHOD

60 The method for this literature review followed the protocol of the Swedish Council on
61 Technology and Assessment [12] and the researchers adhered to PRISMA guidelines for
62 systematic reviews [13].

63

64 **Inclusion and exclusion criteria's**

65 Inclusion criteria concerned studies in English or a Scandinavian language (i.e. Swedish,
66 Norwegian and Danish) and studies containing sociodemographic, physical, mental, and
67 social factors relating to the cessation of breastfeeding before the child reached six months
68 were included. Studies containing any kind of breastfeeding, both partly and exclusive
69 breastfeeding as well as breast milk given after expression were included. Studies with
70 quantitative research such as cross-sectional studies, case-control studies, and cohort studies
71 were included. Criteria for exclusion were those studies examining chronic diseases regarding

72 the mother (e.g. Diabetes, heart failure) and studies focusing on factors relating to the child,
73 such as prematurity or low birth weight.

74

75 **Search strategy**

76 The search was performed in Medline, CINAHL, and PsycINFO and the Cochrane Library.

77 Three blocks were built into the search: “breastfeeding”; “factors that contributed to

78 cessation”; and lastly, “cessation”; (see Table 1). The main search was done in September

79 2015 and an updated search in May 2016. There were no limits selected for publication dates

80 of the studies. The search in the Cochrane Library did not result in any systematic reviews or

81 trials.

82 **Insert Table 1.**

83

84 **Selection process**

85 The total amount of articles in the three databases was 1,159; (See Figure 1). First, the titles

86 were screened, and if they were in line with the aim, the abstract was read (n=186). Eighty-

87 three articles appeared to be relevant, and 18 articles were found to be duplicates. All the

88 authors reached agreement on which studies should be included. In this third phase, 57 papers

89 were excluded after scientific appraisal, as they did not meet the inclusion criteria; In the end,

90 27 papers were included, and quality assessments were made concerning these.

91 **Insert Figure 1**

92

93 **Quality assessment**

94 The remaining 27 papers were assessed for the quality of the method and the credibility of the

95 results. The scientific quality was examined independently by two of the authors. In this

96 examination, a quality assessment template from SBU [12] was used by the authors. The

97 questions in the template concerned the selection process for the participants for the study,
98 the loss of participants, and how the loss of participants was taken into account. Thereafter,
99 the assessment bias and reporting bias were considered. A general appraisal of the study
100 quality on a three-grade scale was also performed and graded for: high scientific quality,
101 moderate scientific quality, and low scientific quality [12]. Criteria for the quality assessment
102 can be found in Table 2. The authors met on a regular basis to discuss methodological quality,
103 validity, and applicability of the chosen articles and discussions were conducted until
104 consensus was reached in the quality assessment.

105 **Insert Table 2.**

106

107

108 **Analysis process**

109 The 27 papers included in this systematic review were categorized according to factors
110 presented in the studies. In some of the articles, several factors for the cessation of
111 breastfeeding were assessed, and as a result, some of the papers are presented by a variety of
112 factors. The grading of the result was carried out according to GRADE [14], as was the
113 criteria for assigning grades of evidence. The grading resulted in one evidence table (see
114 Table 3), and the grading was done by decreasing or increasing the evidence level of different
115 outcomes measured across the studies. Aspects that affected the evidence level of each
116 outcome were related to limitations, inconsistency, indirectness, imprecision, publication
117 bias, and quality across the studies [14]. All included studies were observational studies,
118 which according to GRADE meant that the evidence level for each outcome measure started
119 on low level and if none of the increasing or decreasing aspects mentioned above were
120 identified across the studies, the evidence level for the actual outcome remained on low level.
121 Observational studies that only were presented with prevalences were not included in the

122 grading of evidence. The result with summary measures and information about the included
123 studies can be found in Table 4.

124 Given the wide variation in the methodology of studies, we decided against a quantitative
125 analysis of the data in the form of meta-analysis and limited this report to a qualitative
126 synthesis of available evidence.

127 **Insert Table 3.**

128

129 RESULTS

130 **Insert Figure 2.**

131

132 A total of 26 studies presented in 27 papers were included in the result, and the following
133 areas were represented: United States (n=7), United Kingdom (n=6), Australia (n=6), Hong
134 Kong (n=2), Nicaragua (n=1) Taiwan (n=1), Denmark (n=1), Sweden (n=1), Brazil (n=1),
135 and Canada (n=1). The included studies were published between the years 1982 and 2013.

136 The articles and factors are sorted into the following headings: sociodemographic factors,
137 physical factors, mental factors, and social factors. A figure for all the factors and the number
138 of papers included in the result as well as the quality assessment can be found in Figure 2. In
139 accordance with the different factors, an evidence table is presented (see Table 3). With every
140 factor presented, the studies with the highest scientific quality are presented first, and
141 thereafter, the studies with moderate quality are presented.

142

143 **Sociodemographic factors**

144 Sociodemographic factors include the following outcomes *mother's age, level of education,*
145 *employment status and income, primipara, and ethnicity.*

146

147 *Mother's age*

148 The high quality study by Taveras et al [15] and the following four studies Hauck et al [16],
149 Ayton et al [17], Avery et al [18], Tarrant et al [19] with their moderate quality, focused on
150 the association between young maternal age and the cessation of breastfeeding before 12
151 weeks. All five studies showed a significant association between the mother's young age and
152 the cessation of breastfeeding. However, the evidence level regarding this association was
153 considered to be low, since it only included observational studies and no aspects that
154 increased or decreased the evidence level were identified across these studies (see Table 3).

155

156 *Level of education*

157 Taveras et al [15] with their high-quality study, and the moderate quality studies by Avery et
158 al [18], Ayton et al [17] and Hauck et al [16] examined the association between mother's low
159 level of education and the cessation of breastfeeding before six months. All four studies
160 showed a significant association between low maternal educational level and cessation of
161 breastfeeding before six months. However, the evidence level of this association was also
162 considered to be low, since it was only observational studies and no increasing or decreasing
163 aspects were identified across the studies (see Table 3).

164

165 *Employment status and Income*

166 Six studies investigated the association between returning to work within 12 weeks post-birth
167 and the cessation of breastfeeding before six months. The high quality study by Taveras et al
168 [15] and moderate quality studies by Bick et al [20], McCarter-Spaulding et al [21], Schwartz
169 et al [22], Tarrant et al [19], and Cameron et al [23] found a significant association between
170 the mother's return to work and the cessation of breastfeeding, and the evidence level was

171 considered to be low here as well, since it was only observational studies and no increasing or
172 decreasing aspects were identified across the studies (see Table 3).

173

174 Thereafter, one study of moderate scientific quality showed that being a working mother
175 during the first six months of the infant's life increased the odds of early cessation of
176 breastfeeding [24]. This assumption has also been described by a prevalence study [25]. In
177 the high quality study by Taveras et al [15] a mother's enrolment in doing part-time studies
178 post-birth showed a significant association with the cessation of breastfeeding before six
179 months. This was also the case, in the study with moderate quality by Lindenberg et al [26].
180 In the study by Taveras et al [15], two significant predictors for a mother's discontinuation of
181 breastfeeding at two and twelve weeks were studying and low income. Another study of high
182 quality showed that being unemployed prior to giving birth increased the odds for the
183 cessation of breastfeeding, but this association was not significant [27].

184

185 *Primipara*

186 In two studies of moderate scientific quality by Agboado et al [28] and Hauck et al [16],
187 primiparae were more likely to stop breastfeeding than multiparae, and the association was
188 significant in this case.

189

190 *Ethnicity*

191 In one study of moderate quality from the UK [28], white mothers were more likely to stop
192 breastfeeding compared to non-white mothers. In two studies of moderate quality from Hong
193 Kong, weaning from breastfeeding was significantly associated with a longer residential stay
194 in Hong Kong [19, 24]. Further, in a high quality study by Taveras et al [15], women of Asian

195 origin had significantly increased odds for the cessation of breastfeeding at two and twelve
196 weeks post-birth.

197

198 Regarding the sociodemographic factors and their association with the cessation of
199 breastfeeding, low evidence was found for the cessation of breastfeeding before six months
200 and being a young mother. Also, low evidence was found, with the mother having a low level
201 of education and her employment status 12 weeks post-birth. More studies are needed in
202 regard to primiparae and the cessation of breastfeeding as well as with regard to ethnicity and
203 its association with the cessation of breastfeeding.

204

205

206 **Physical factors**

207 The group physical factors included the following outcomes *birth complications,*
208 *breastfeeding problems, and overweight/obesity.*

209

210 *Birth complications and anesthesia during labor*

211 In the British study of high quality, a planned caesarean birth increased the odds for the
212 cessation of breastfeeding before three months, and after adjustments were made, the
213 association was significant [29]. In three studies of moderate scientific quality, birth
214 complications such as caesarean births were considered as a determinant for the early
215 cessation of breastfeeding [16, 17, 28]. Together, these three studies were considered to have
216 a low level of evidence relating to the association between caesarean birth and the cessation
217 of breastfeeding, since it was only observational studies and no increasing or decreasing
218 aspects were identified across the studies (see Table 3). In the study by Brown and Jordan
219 [30], postpartum hemorrhage was also considered a birth complication which significantly

220 affects the early cessation of breastfeeding. In addition, having epidural anesthesia during
221 labor was shown to be significantly associated with the early cessation of breastfeeding in
222 one study of high quality [27] and in one study with moderate quality [31]. Being given other
223 kinds of anesthesia during labor was also shown to be significantly associated with early
224 cessation [27].

225

226

227 *Breastfeeding problems*

228 Several studies covered the fact that breastfeeding problems were a factor associated with the
229 cessation of breastfeeding before six months. To perceive or to experience inadequate milk
230 supply was one of the common reasons for cessation. Also, the delayed onset of lactogenesis
231 II was significantly associated with the cessation of breastfeeding before four weeks in the
232 study by Brownell et al [32]. In the study by Cooke et al [33], inadequate milk was
233 significantly associated with cessation at 2-6 weeks. In the study by Avery et al [18] there
234 was also a significant association between perceived insufficient milk and the early cessation
235 of breastfeeding. These three studies were judged to have moderate scientific quality and the
236 evidence level was considered to be low regarding the association between inadequate milk
237 supply and cessation of breastfeeding before six months, since it was only observational
238 studies and no increasing or decreasing aspects were identified across the studies (see Table
239 3). Two prevalence studies confirm the result that inadequate milk supply is a common reason
240 for the early cessation of breastfeeding [25, 34].

241

242 Several studies have reported that sore or painful nipples have an association with the early
243 cessation of breastfeeding, and a significant association was found in the moderate quality
244 studies by Avery et al [18] and Cooke et al [33]. In the American study comparing women

245 from Nebraska and Michigan, they found an association between sore nipples and cessation
246 before six months, but the result was non-significant [22]. A prevalence study strengthens the
247 assumption that sore nipples have an association with cessation of breastfeeding [25].

248

249 How physical factors such as mastitis affect cessation is unclear because the included studies
250 concerning this factor are small and diverse. A moderate quality study by Schwartz et al [22]
251 showed a significant association between mastitis and cessation in women from Michigan
252 during weeks 1-3 but was non-significant regarding the women from Nebraska during weeks
253 4-12 post-birth. In the prevalence study by Rousseau et al [25], mastitis was given as the
254 reason for 12 % of the women weaning their infant within the first four months.

255

256 Predictors for discontinuation at two and twelve weeks due to the experience of having
257 problems breastfeeding at work or school were found to be significant in a study of high
258 quality by Taveras et al [15]. This assumption is confirmed by the prevalence study of
259 Chuang et al [34] regarding the same factor.

260 In the moderate quality study by Avery et al [18] the association between cessation and lack
261 of comfort was significant. Further, engorged or leaking breasts were nonsignificant factors
262 associated with cessation [18, 22, 33].

263

264 In the moderate quality study by Almqvist-Tangen et al [35], a significant association
265 between breastfeeding problems and the cessation of breastfeeding at one month post-birth
266 was found. In the moderate quality study by Cooke et al [33], breastfeeding problems in
267 general showed increased odds for cessation, but were nonsignificant.

268

269 *Overweight/Obesity*

270 In the high quality study by Kronborg et al [17, 36] and in the moderate quality study by
271 Ayton et al [17], there were a significant association between high BMI among mothers and
272 the cessation of breastfeeding. In the moderate quality study by Bartok et al [37], a significant
273 association was found between being an obese mother and having ceased breastfeeding
274 before six months, and the association remained after adjustments for confounding factors.
275 Together, these three studies were considered to have a low level of evidence relating to the
276 association between overweight/obesity and the cessation of breastfeeding since it was only
277 observational studies and no increasing or decreasing aspects were identified across the
278 studies (see Table 3).

279

280

281 Regarding physical factors and its association with cessation of breastfeeding before 6
282 months, there was low evidence for the association between cessation of breastfeeding and
283 caesarean birth, having inadequate milk supply and overweight/obesity. Regarding sore
284 nipples, mastitis, engorgement, and breastfeeding problems in general, there were diverse and
285 contradictory results.

286

287 **Mental factors**

288 The mental factor that was derived from the studies with the outcomes *depression/anxiety*.

289

290 *Depression/Anxiety*

291 Having symptoms of depression were significantly associated with the cessation of
292 breastfeeding before six months in the study of high quality by Taveras et al [15] and also in
293 the studies of moderate quality by Bick et al [20] and Ayton et al [17]. However, in the
294 moderate quality studies by Schwartz et al [22] and Cooke et al [38], no association between

295 depression and cessation of breastfeeding were found. This inconsistency in the association
296 between depression regarding the mother and cessation before six months led to very low
297 evidence (see Table 3). In the high quality study by Clifford et al [27], having a high level of
298 anxiety increased the odds of cessation, and the association was significant.

299

300 The result was contradictory regarding the mental factor of depression symptoms and the
301 cessation of breastfeeding before six months. Two studies showed an association with the
302 cessation of breastfeeding, and two studies did not. Therefore, the evidence level regarding
303 this association is very low.

304

305 **Social factors**

306 Social factors included the outcomes of *intimate partner violence, smoking and support*

307

308 *Intimate Partner Violence*

309 The moderate quality study by Moares et al [39] focused on the impact that intimate partner
310 violence can have on the duration of breastfeeding. It reveals that severe physical violence
311 during pregnancy was positively associated with the cessation of breastfeeding before five
312 months, but after adjusting for confounders, the association became nonsignificant.

313

314 *Smoking*

315 In the moderate quality study by Giglia et al [40], the increased odds for cessation were
316 observed concerning women who smoked during pregnancy. The association was significant
317 between two weeks and six months, even after adjustment for confounders. In another study
318 of high quality by Clifford et al [27], a significant association was seen between the early
319 cessation of breastfeeding and a smoker residing in the home. In addition, in the moderate
320 quality study by Almqvist-Tangen et al [35], there was a significant association between

321 maternal smoking and the cessation of breastfeeding at one month post-birth was found. In
322 the moderate scientific quality study by Liu et al [41], early weaning was significantly
323 associated with persistent smoking and postpartum relapses of smoking. This was significant
324 for >10 cigarettes per day, but was nonsignificant for mothers who smoked fewer cigarettes
325 (1-9 per day). In the moderate quality study by Ayton et al [17], mothers currently smoking
326 increased the odds for cessation of breastfeeding.

327

328 *Support*

329 In the high quality study by Bick et al [20], it was shown that women who received regular
330 child-care support from female family members were significantly more likely to cease
331 breastfeeding. In the high quality study by Oakley et al [29], non-attendance at baby cafe
332 increased the odds for cessation but became nonsignificant after adjustments were made.
333 Further, having no feeding help or advice from parents or a peer group increased the odds for
334 cessation and remained significant after adjustments were made. The same study showed that
335 having no feeding help or advice from voluntary organizations increased the odds for
336 cessation and remained significant after adjustments were made. In the moderate quality
337 study by Lindenberg et al [26], it was found that having only occasional support from others
338 had a significant association with cessation before four months. Taveras et al [15], in their
339 high quality study, found a significant association between perceiving a lack of support from
340 the father and ceasing breastfeeding at two weeks. In the moderate quality study by Cameron
341 et al [23], the mothers were divided into groups. Among the group that consisted of a high
342 percentage of women who ceased breastfeeding, lack of support from the father significantly
343 increased the odds for the cessation of breastfeeding between six weeks and six months.

344

345 Regarding social factors and their association with the cessation of breastfeeding before six
346 months, a few studies were found which focused on smoking and its association with
347 cessation of breastfeeding but at different times during pregnancy and after birth. As a result,
348 it was difficult to grade the evidence level concerning this association.

349 Regarding the association between support and the cessation of breastfeeding, the result was
350 inconsistent because the studies were looking at different kinds of support. Therefore, more
351 studies are needed for the accurate assessment of the evidence. Only one study was found
352 regarding the association between intimate partner violence and cessation of breastfeeding;
353 therefore, more studies are needed.

354

355 **Insert Table 4.**

356

357 DISCUSSION

358 Considering the sociodemographic factors and their association with the cessation of
359 breastfeeding before six months, low evidence was found for the association regarding the
360 mother's young age, low level of education, and return to work within 12 weeks post-birth.

361 The evidence was low taking into account the effects of physical factors such as a caesarean
362 birth, overweight/obesity and inadequate milk supply and its association with the cessation of
363 breastfeeding before six months. Regarding mental factors, the evidence was very low
364 concerning depression among the mothers and its association with the cessation of
365 breastfeeding. However, since the possibility to perform any other study design than
366 observational studies for this topic might be seen unethical, we consider our result to be based
367 on the highest possible level of evidence.

368

369 The result also shows that mothers who are young and have a low level of education are
370 significantly associated with the cessation of breastfeeding before six months. This is
371 confirmed in another study by Dubois and Girard [42] where the combined effects of the
372 mother's age and level of education was so strong that family income, family type, and
373 employment status became nonsignificant in the adjustment model [42]. The reason behind
374 low maternal educational level and cessation of breastfeeding could be explained by both
375 motivational and social influences. Therefore, the support given should be done through
376 reliable and practical advice, tailored to existing parent motives and varying child
377 characteristics and framed in motivating ways [43].

378

379 Six studies focused on returning to work within 12 weeks post-birth and the association of
380 this with the cessation of breastfeeding before six months [15, 19-23]. One explanation for
381 this could be practical issues related to working and continuing to breastfeed at the same
382 time. According to the study by Tarrant et al [19], women who start working early in the
383 postpartum period introduce formula at an early stage so the child can get used to it, and that
384 could explain the cessation of breastfeeding. In light of this, health-care advisors and nurses
385 could advise women on how best to continue breastfeeding when returning to work.

386

387 Birth complications, such as caesarean births, were considered to be a determinant for the
388 early cessation of breastfeeding in several studies [16, 17, 28, 30]. The reason behind this
389 association could be related to operative deliveries possibly having a detrimental effect on
390 breastfeeding and may be explained by a delayed breastfeeding initiation [28]. A study by
391 Grassley et al [44] showed that formula was more common among babies delivered by
392 caesarean birth and according to Parry et al [45] delayed initiation of breastfeeding along
393 with early and frequent introduction of formula could explain why caesarean birth is

394 associated with early cessation of breastfeeding. Another study by Hung et al [46] showed
395 that early skin to skin contact between baby and mother after cesarean birth could reduce the
396 amount of formula given after the surgery. Nurses and midwives should be leaders in
397 incorporating this practice as routine care after cesarean birth.

398

399 To perceive or to experience inadequate milk supply was one of the common reasons for
400 cessation before six months [18, 32, 33]. According to the study by Kent et al [47], the
401 problem with the experience of having insufficient milk supply is that it's common for people
402 to harbor misconceptions. The misconceptions can be such things as using the baby's satiety
403 as a parameter and whether the women's breasts feel softer after a few weeks. Other
404 misconceptions include, the baby being unsettled and then settling better after formula given
405 and a decrease in growth after three months. However, these signs are not accurate indicators
406 of milk supply. Better parameters of whether or not milk supply is adequate are the number of
407 wet nappies produced, infant alertness, skin color, muscle tone, and consistent growth and
408 weight gain. This information and knowledge needs to be given from the nurses working
409 within child health care as well as the midwives working in the maternity ward.

410

411 The contradictory result regarding depression and cessation of breastfeeding resulted in a
412 very low quality of evidence and more studies are needed. However, another study conducted
413 by Schmied and Barclay [48] found that breastfeeding was central to a woman's maternal
414 identity. But only a few women interviewed in this study thought breastfeeding was a
415 pleasurable activity. Most of the women described breastfeeding with ambivalent feelings and
416 disappointment and this could explain the contradictory result [48]. Breastfeeding could be an
417 emotionally loaded experience and maternal depression could be either a cause or a
418 consequence of decisions to cease breastfeeding. Health care professionals should assist

419 women by considering the psychosocial context of women`s lives when supporting them in
420 their infant feeding [49] .

421

422 Methodological considerations

423 Additional search terms, search blocks, or inclusion as well as exclusion criteria could have
424 been used. The preassigned search terms is a limitation, since some risk factors could have
425 been unknown or only partially studied (eg. alcohol or drug use, severe psychiatric illnesses
426 (psychosis), breastfeeding confidence as a mental factor, support)

427 For this study, low birth weight and prematurity were exclusion-criteria. This resulted in
428 many articles being excluded from this study because many of the studies found had included
429 these populations. However, earlier studies have shown a significant association with the
430 early cessation of breastfeeding and low birth weight as well as prematurity [50, 51]. As a
431 result, the studies including these infants were excluded. The fact that the inclusion and the
432 exclusion criteria have been firm from the beginning and were followed closely and strictly
433 throughout the data collection process could be seen as an asset in this study. Many duplicates
434 were found in the three databases and suggests that the search area was wide. The quality
435 assessment of the studies has been undertaken by the first and the last author, and agreement
436 has been reached between the authors. Many of the included articles were judged to have
437 medium quality. The reasons for this were i) it was rare to find studies with information about
438 the loss of participants, ii) what the characteristics concerning these looked like and iii) what
439 kind of selection bias that could have resulted in. In many cases, observational study is the
440 only possible design for the topics, since you cannot perform trials of eg. caesarean section,
441 depression, or employment to study the effect on breastfeeding. Therefore, the review
442 presents the highest possible evidence level.

443

444 Conclusions

445 Sociodemographic factors were seen to have caused cessation of breastfeeding in some of the
446 included articles, and a focus should be placed on how to improve the knowledge of health-
447 care professionals as it is clear that sociodemographic factors have an effect on health
448 behavior. Physical, mental, and social factors could be seen more as a result of health and
449 behavior which is affected by the sociodemographic factors. These factors should be
450 considered through targeted interventions focusing on mothers who are at risk of ceasing
451 breastfeeding before the recommended time. The focus should be on identifying both mothers
452 who are at risk because of known factors and behavior that can be prevented. To prolong the
453 breastfeeding period, targeted attention and suitable interventions should be directed towards
454 mothers who are at risk of early cessation of breastfeeding.

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