Author's response to reviews

Title: Prevalence and outcomes of breast milk expressing in women with healthy term infants: a review of the literature

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Author's response to reviews: see over
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The Editor  

BMC Pregnancy and Childbirth  

Dear Ms Cruz,  

Thank you for your correspondence regarding our manuscript entitled “Prevalence and outcomes of breast milk expressing in women with healthy term infants: a review of the literature.” The manuscript has been modified and detailed below are our responses to the specific points made by the reviewers.  

Please let us know if there are further changes required.  

Yours sincerely,  

Helene Johns
Reviewer 1: Jennifer Fenwick

Minor Essential Revisions

P4: Background
The first paragraph has a number of minor grammatical errors that need correction

These have been corrected

Last sentence – Sentence requires a little rewording. Something like... Only two studies, conducted in Australia and Singapore, measured expressing over time. Both reported an increase xxxx

Reworded, P. 4 paragraph 1:

“Only two studies, one conducted in Australia and one in Singapore, measured expressing over time. Both reported an increase [2, 6].”

P7: Methods
Reword sentence commencing with ‘Figure 1’... Figure 1 presents a summary of all articles obtained from the literature search using the PRISMA guidelines (ref).

Reworded, Methods P.7 paragraph 3:

“A flowchart was developed according to PRISMA guidelines to summarise articles obtained in the literature search [21].”

P8: Results
Remove the reference to figure 1 – not required

Retained as ‘Figure 1’ no longer mentioned previously (in Methods - see above)

P9: 2nd paragraph needs rewording... commencing with Binns etc

Reworded, P.9 paragraph 2:

“Binns et al. reported the proportion of mothers who expressed breast milk (not necessarily expressing exclusively) during the first six weeks after birth and found a 31% increase over ten years as well as a gradual decline in expressing after the first six weeks [2].”

P12: reword the last sentence or two – confusing

Reworded, inappropriate references corrected, P.12 paragraph 3:
“Women express in order to return to paid work [3, 5, 38]. Those who are in paid employment are more likely to express their milk when there are flexible work arrangements and designated places to express [39, 40]. In addition to women who are in paid employment expressing milk, women who have a high income are more likely to do so [3].”

P16: Discussion
Mid discussion is a definition of the let down reflex. I understand the link and argument you are trying to make here but this may not be clear to novice reader. I’d suggest you just reword here to make the point clearer.

Reworded, P.16 paragraph 1:

“The let-down reflex, a physiological response that is the process by which milk becomes available for the baby, can be inhibited by stressful situations such as embarrassment [58]. This may also be the case when unfamiliar equipment such as the breast pump is used.”

Reviewer 2: Jacqueline Kent

Minor Essential Revisions
1. Page 4 first paragraph: reference 2 only discusses studies conducted in Australia, not Singapore

We have added a second reference that discusses work in Singapore, P.4 paragraph 1:

“Only two studies, one conducted in Australia and one in Singapore [2, 6], measured expressing over time. Both reported an increase [2, 6].”

Major Compulsory Revisions
1. Page 5 first paragraph: the last part of the paragraph is subjective and emotive and does not belong in a scientific paper.

We have revised the last part of this paragraph, P.5 paragraph 1:

“Pastel colours, discreet motors and less angular shapes became the norm and these pumps are now promoted with names that are arguably designed to enhance market acceptability.”

2006 did indeed study and discuss mothers of premature infants. However, Reference 11, Green et al 1982, studied mothers of term infants, but suggested that expression may be required for sick or premature infants. Reference 18, Prime et al, 2012, studied mothers of term infants, but suggested further studies for mothers of preterm infants.

We have removed the incorrect references to Green et al (1982) and Prime et al (2012), P.5 paragraph 3:

“Many of the studies about expressing breast milk focus on premature and/or unwell infants [15, 17] reflecting the main reasons women expressed to feed their infants in the past.”

3. Page 8 paragraph 2: this paper mentions three classifications, but the results also include impact on breastfeeding outcomes and other implications.

We have made corrections to include these additional classifications, P. 8 paragraph 2:

“In the Results, the literature has been classified according to: prevalence of breast milk expressing, methods of expressing and reasons why women express. In addition outcomes and other implications of expressing are included.”

4. Page 13 first paragraph: “Some studies suggest that breastfeeding solely at the breast in the early postpartum period is associated with longer duration of breastfeeding [1, 44], while others have found the reverse [2, 45, 46].” The abstract in reference 2, “The expression of breastmilk is an important strategy to enable mothers to continue exclusive breastfeeding.” and the conclusion, “The appropriate use of expressed breastmilk allows a mother to achieve six months of exclusive breastfeeding while giving her more options with regards to paid work or study, and the management of breastfeeding difficulties.” are not based on evidence provided in the paper.

We have revised this paragraph to more accurately reflect the literature, P.13 paragraph 2:

“Some studies suggest that expressing to feed (as opposed to breastfeeding solely at the breast) in the early postpartum period is associated with shorter duration of breastfeeding [1, 41], while others have found the reverse [42, 43]. Binns et al report on trends in the expression of breastmilk and conclude “The appropriate use of expressed breastmilk allows a mother to achieve six months of exclusive breastfeeding while giving her more options with regards to paid work or study and the management of breastfeeding difficulties”[2] (Page 8).

5. Page 13 paragraph 2: Schwartz et al is reference 44, not 42.

6. Page 13 paragraph 2: Win et al does not appear in the list of references. Reference 23 is Moher et al.

We have made corrections and apologise for these errors that have occurred due to some difficulty we have experienced with EndNote, P.13 paragraph 2:
“Women who fed at the breast only were found by Schwartz et al to breastfeed for longer [41] and Chapman et al. reported that expressing did not improve milk volumes or duration of breastfeeding [44]. On the other hand, Win et al. in Perth, Australia, explored the association between expressing and the duration of breastfeeding and reported that mothers who expressed were more likely to be breastfeeding at six months than those who didn’t express [45].”

7. Page 14 second paragraph: “Freezing, defrosting and reheating and microwaving all have the potential to compromise milk quality and safety [50, 51].” Reference 50 is a secondary reference. The original research papers should be quoted.

We have corrected this error, P.14 paragraph 3:

“Freezing, defrosting and reheating and microwaving all have the potential to compromise milk quality and safety [48, 49].”

8. Page 16 first paragraph: “A recent paper from Flaherman et al. reports on an apparent positive effect of hand expressing when compared with bilateral electric pumping [32]. The authors discuss the possibility that hand expressing contributes to less awkwardness or embarrassment for the mother, and that she is more likely to be comfortable hand expressing than using a pump when others are present [32].” While Flaherman et al. do say, “...mothers who hand expressed initially reported greater comfort expressing in front of others than mothers who initially pumped” they also state, “Once a mature milk supply is well established, bilateral electric breast pumping expresses more milk in less time than unilateral pumping, hand pumping, or hand expression. 3,4,39–41 Because electric pumps may remove up to 50% more milk than hand expression with greater ease, mothers who are making mature milk often strongly prefer electric pumps. 42,43 However, individual mothers may prefer manual pumps or hand expression, and many mothers may be able to express adequate milk volumes using any of these approaches.” It seems that Johns et al are making a selective interpretation rather than providing an objective, balanced review of the literature.

We have revised the relevant portion of this paragraph, P.16 paragraph 1:

“A recent paper from Flaherman et al. reports on an apparent positive effect of hand expressing when compared with bilateral electric pumping [30]. The authors discuss the possibility that hand expressing contributes to less awkwardness or embarrassment for the mother, who is more likely to be comfortable hand expressing than using a pump when others are present [30]. After the establishment of a mature milk supply however, a 2013 review of studies comparing different methods of milk expression [37], identifies several that found electric breast pumping to be more effective than any other method in terms of milk volume obtained [49, 56, 57].”

9. Page 17 last paragraph: the authors state, “Breastfeeding has been reduced to a task, ...” but have provided no evidence for this statement.

This section has been reworded, Conclusion P.18 paragraph 1:
“Expressing breast milk has become more common and provides an opportunity for others to feed the baby. It could be argued that, for some families, breastfeeding has been reduced to a task, which is that of providing milk for the baby, quite possibly even beyond arm’s length, something that anyone can do and potentially at the cost to the special relationship between a mother and her infant.”

Reviewer 3: Linda Sweet

Abstract:

Search method in abstract is not the same as in the main text – need to be consistent.

We have corrected this inconsistency to include the sentence indicated below in italics,

Abstract: Methods P. 2:

“Databases (Medline, CINAHL, JSTOR, ProQuest Central, PsycINFO, PubMed and the Cochrane library) were searched using the keywords milk expression, breast milk expression, breast milk pumping, prevalence, outcomes, statistics and data, with no limit on year of publication. Reference lists of identified papers were also examined. A hand-search was conducted at the Australian Breastfeeding Association Lactation Resource Centre. Only English language papers were included. All papers about expressing breast milk for healthy term infants were considered for inclusion, with a focus on the prevalence, methods, reasons for and outcomes of breast milk expression.”

Conclusion: the authors argue that as the reasons for expressing are complex and contradictory more research is needed. I would argue that there is no one answer, and that findings will always be complex, contextual and often contradictory and therefore this argument for more research based on this does not hold. Term accoutrement not common – please reconsider alternate term.

We have revised this section as suggested and substituted ‘accoutrement’ with ‘equipment’,

Abstract: Conclusions P.3:

“There is limited evidence about the prevalence and outcomes of expressing breast milk amongst mothers of healthy term infants. The practice of expressing breast milk has increased along with the commercial availability of a range of infant feeding equipment. The reasons
for expressing have become more complex while the outcomes, when they have been examined, are contradictory.”

**Background**

Line 4 ‘there has been is some’…. Remove ‘is’

*Removed, P.4 line 4:*

“There has been some . . .”

Line 6 only two studies, conducted in …. Suggests that both locations were used in both studies—would read better that one study conducted in Australia and the other conducted in Singapore

*Revised, P.4 paragraph 1:*

“Only two studies, one conducted in Australia and one in Singapore, measured expressing over time. Both reported an increase [2, 6].”

Paragraph 2 is interesting but I do not see the relevance to the purpose of this review. There is little direct relevance of this to expressing for healthy term infants.

*P.4 paragraph 2:*

We feel that a historical perspective is important and that some readers will find it interesting, therefore we have retained this paragraph.

Page 5 paragraph 2: breastfeeding is convenient, and advertising for breast pumps appears to suggest that…. Needs to say breastfeeding is promoted as being convenient, and I suggest you avoid the use of the term ‘appears’.

*Revised, P.5 paragraph 2:*

“Breastfeeding is convenient, and advertising for breast pumps may be interpreted as suggesting that expressing is equally so.”

Page 6 paragraph 1: Previously this was more likely - needs some qualification – what does ‘this’ mean? Also when you bring in the healthy term infants statement this needs to be better worded to say “whereby healthy term infants are more likely to be ....”

*Revised, P.5 paragraph 3:*
“It is likely that up until the last 20 years healthy term infants were either breastfed or bottle fed with infant formula.”

Page 6 paragraph 2: claims in this paragraph need reconsideration as I do not agree that Labbok et al claim breastfeeding to describe any breast milk intake regardless of mode. Although I do not have that specific article at hand – I suggest you recheck the claim as you have stated.

This reference was incorrect and has been substituted with a reference to Aarts, P.6 paragraph 2:

“Defining breastfeeding is complex. Discussion has previously focused on the accurate measurement of breast milk feeding; its exclusivity and duration [18].”

Methods

Reference list searching needs to be said in the abstract as it is in methods.

This inconsistency has been corrected, Abstract: Methods P.2:

“Databases (Medline, CINAHL, JSTOR, ProQuest Central, PsycINFO, PubMed and the Cochrane library) were searched using the keywords milk expression, breast milk expression, breast milk pumping, prevalence, outcomes, statistics and data, with no limit on year of publication. Reference lists of identified papers were also examined.”

Results

I do not understand why method of expressing has been included when the purpose of the review is to explore prevalence, reasons for and outcomes of expressing. Perhaps if method is important this needs to be encompassed in the purpose of review.

This was an omission which has been corrected, the method of expressing is now included as an aim in the appropriate section of the abstract and the main paper:

Abstract P. 2 Paragraph 2
Background P. 7 paragraph 1:

“The aim of this paper is to systematically explore the literature related to breast milk expressing by women who have healthy term infants, including the prevalence of breast milk expressing, and the reported reasons for, methods of, and outcomes related to, expressing.”
Page 10 paragraph 2: the review was meant to have excluded papers that related to expressing for preterm infants however here you include one. This should be excluded.

This reference has been retained. Where relevant, some papers that incorporated components related to expressing for preterm infants were included, we have corrected the appropriate sentence in the Methods section to allow for the fact that we excluded most but not all such papers, P.8 paragraph 1:

“Papers about expressing that focused exclusively on premature infants were not included, except where relevant for other aspects of this literature review (eg. Methods of expressing).”

Page 10-11 why the methods of expressing section??

‘Methods of’ expressing has been included as discussed on P. 7 paragraph 1:

“The aim of this paper is to systematically explore the literature related to breast milk expressing by women who have healthy term infants, including the prevalence of breast milk expressing, and the reported reasons for, methods of, and outcomes related to, expressing.”

Page 11 Paragraph 2: Buckley writes about ‘a breast pump in every room’ – but I wonder what does Buckley actually write about this – is it the need to have, the desire to have or actually having a pump in every room – as a statement it currently does not say anything meaningful.

We have revised this sentence, P.11 paragraph 2:

“Electric breast pumps are a regular feature of postnatal wards of maternity hospitals in Washington, DC where Buckley, examining the views of lactation consultants about breast pumps, writes about the prominence of the breast pump, evidenced by the universality of its provision, in her words, “A breast pump for every room”

Status

Reasons why women express

Page 11 second last sentence: women’s lack of confidence may influence a decision to ... Using the terms may influence does not actually say anything and influences can be positive or negative – if you mean lead to the decision to commence expressing – say this.

We have deleted this sentence to avoid repetition when we address supply concerns subsequently on P.12 paragraph 3
We have made some minor changes to this paragraph which discusses several reasons why women express related to body size and body image. Cultural considerations are also relevant to this discussion, P. 12 paragraph 2:

“We women with an elevated body mass index (BMI) are more likely to express their milk than to breastfeed, perhaps related to anxiety about exposing their bodies [27, 32]. Obese women often have large breasts and may experience difficulty feeding discretely [33]. In addition these women may express because of physical difficulty with breastfeeding. Large breast size may impede maternal ability to see and or facilitate appropriate infant attachment and feeding [33]. Leonard et al. investigated breast milk expressing behaviours and concluded that expressing may support longer durations of breastfeeding in overweight or obese women [32]. Embarrassment about breastfeeding in public has been identified as a reason women express regardless of cultural background or body size [5, 34, 35]. Cultural differences may inhibit women from breastfeeding outside the home, leading to some women expressing so that they can avoid exposing their bodies in public [3, 5, 34].”

We have deleted the earlier mention of concern about adequacy of supply, originally the second sentence under the heading “Reasons why women express their milk” and we have revised the relevant part of this paragraph, P. 12 paragraph 3:

“Other reasons women express include breastfeeding problems such as mastitis and breast engorgement [2]; nipple pain and difficulty with attachment to the breast [5]; concern about oversupply or undersupply [3, 5, 34, 36] and allowing the baby to be fed by someone other than his/her mother [2, 3, 34, 37]. Women express in order to return to paid work [3, 5, 38]. Those who are in paid employment are more likely to express their milk when there are flexible work arrangements and designated places to express [39, 40]. In addition to women who are in paid employment expressing milk, women who have a high income are also more likely to do so [3].”
Impact of expressing Page 13 “Some studies suggest that breastfeeding solely at breast in the early postpartum …..” leads me to ask how this relates to expressing which is the focus of the review – how does this imply expressing outcome?

We have reworded this sentence, P.13 paragraph 2:

“Some studies suggest that expressing to feed (as opposed to breastfeeding solely at the breast) in the early postpartum period is associated with shorter duration of breastfeeding [1, 41], while others have found the reverse [42, 43].”

Paragraph two opens with “An association between…” but does not say if it is a positive or negative association! Need rephrasing – this is also a paragraph that needs to be reviewed for structure as you show a negative then “on the other hand” a positive correlation but then close with another negative.

This paragraph has been revised, P13 paragraph 2:

“Women who fed at the breast only were found by Schwartz et al to breastfeed for longer [41] and Chapman et al. reported that expressing did not improve milk volumes or duration of breastfeeding [44]. On the other hand, Win et al. in Perth, Australia, explored the association between expressing and the duration of breastfeeding and reported that mothers who expressed were more likely to be breastfeeding at six months than those who didn’t express [45].”

Page 13 last paragraph needs restructure as the whole paragraph is not about the opening sentence. Other implications page 14 Unclear why the inclusion of infant outcomes is included when the review was about maternal outcomes.

This paragraph has been revised. The duration of breast milk feeding is both a maternal and an infant outcome, P.13 paragraph 3:

“Studies that looked at duration of breast milk feeding have had differing outcomes. Ortiz et al. explored the duration of breast milk expression for women allocated to a lactation program which provided equipment and support for expressing. Findings indicated that these women were more likely to breast milk feed for longer than those who did not receive such support [39]. Geraghty et al. found that mothers who fed solely at the breast, particularly in the early weeks postpartum, were more likely to breast milk feed for longer than women who had combined breastfeeding with expressing [1].”

Discussion
Claim that baby not welcome is judgemental – as not all mother baby separations are about baby being unwelcome – it may be the baby is sick or unable to feed – suggest you rephrase to say
mother and baby separated or unable to feed for whatever reason.

We have reviewed this sentence, Discussion P.15 paragraph 2:

“Some breast milk expressing deserves consideration as incidental, something a mother might do only on occasion, for example when she needs to go out without her baby, when introducing infant cereal, when the infant is ill or unable to attach or is refusing the breast.”

The claim that clarification of amount, proportion and frequency is necessary is not founded – you have not justified why we need to know this apart from showing we don’t know. What difference will this knowledge make to improving breastfeeding support etc?

We have revised this sentence P.15 paragraph2:

“We know that expressing breast milk has become more common, clarification of the amount, the proportion and the frequency of expressing and breast milk feeding is necessary before we can properly explore the implications of this relatively unexplained shift away from the breast.”

Page 16 No real discussion is provided about the outcomes of and choice between hand and pump expression in relation to expected duration expression is anticipated; Paragraph structure here also needs rethinking.

We have expanded the discussion about types of expressing and revised this section in response to all reviewer comments, P.16 :

“Although concluding remarks in the 2011 Cochrane review identify the relative effectiveness of hand expressing and less expensive breast pumps [28], it is not surprising that regular scheduled expressing is associated with the use of electric breast pumps [3]. Hand expressing barely rates a mention in the literature about expressing breast milk, although breast pump use and ownership are commonly discussed [2, 31, 54, 55]. Thorley describes breast pumps as a substitute for the skill of hand expression [23]. A recent paper from Flaherman et al. reports on an apparent positive effect of hand expressing when compared with bilateral electric pumping [30]. The authors discuss the possibility that hand expressing contributes to less awkwardness or embarrassment for the mother, who is more likely to be comfortable hand expressing than using a pump when others are present [30]. After the establishment of a mature milk supply however, Flaherman in 2013 reviews studies comparing different methods of milk expression [37] and identifies several studies that have found electric breast pumping to be more effective than any other method in terms of milk volume obtained [49, 56, 57]. The let-down reflex, a physiological response that is the process by which milk becomes available for the baby, can be inhibited by stressful situations such as embarrassment [58]. This may also be the case when unfamiliar equipment such as the breast pump is used.”

Page 17 ‘cost broader social change’ needs to have’ cost of broader ‘

Corrected