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Funding received from breastmilk substitute manufacturers and policy positions of national maternity care provider associations: an online cross-sectional review

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ABSTRACT

Objectives Maternity care providers play an essential role in supporting women to breast feed. It is critical that their professional associations limit influence from breastmilk substitute (BMS) manufacturers. Aims of this study were (i) to examine whether maternity care provider associations had policy or positions statements addressing BMS marketing and (ii) to explore the type of funding received by these associations.

Design An online cross-sectional review.

Setting National or regional maternity provider professional associations in Australia, New Zealand, the USA, Canada and the UK.

Participants Twenty-eight maternity care provider (obstetricians, midwives, nurses and others involved in perinatal care) professional association websites.

Interventions Websites were examined from November 2019 to October 2020.

Primary and secondary outcome measures Evidence of BMS industry funding and policy or position statements addressing acceptance of funding from industries such as BMS.

Results Policies addressing the BMS industry were found for 14 associations (50%). UK-based associations (5/5, 100%) and perinatal associations (4/6, 67%) were most likely to have a policy. Six associations (6/28, 21%) received some form of BMS financial support. The highest rates of BMS support were seen in the form of event advertising (5/28, 18%); closely followed by event sponsorship (4/28, 14%). At a provider level, obstetric associations had the highest rates of BMS support (2/4, 50%). At a country level, US-based associations were most likely to receive BMS support (3/7, 43%).

Conclusions BMS industry financial support was received by one-fifth of maternity care provider associations. Half of these associations had policies addressing BMS marketing. BMS industry support can create conflicts of interest that can threaten efforts to support, protect and promote breast feeding. Healthcare provider associations should avoid BMS funding and at a minimum have policy or position statements addressing BMS marketing.

Strengths and limitations of this study

- ► This is the first study to assess the extent of breastmilk substitute (BMS) support and funding in national maternity provider associations, and the presence of policies addressing BMS marketing.
- ► We focused on five Organisation for Economic Co-operation and Development, English-speaking countries with similar health systems and maternity services.
- ► Data were sourced only from publicly available online websites and Facebook pages, printed publications were not examined.
- ► Data regarding the amount of funding provided were not available.
- ► BMS industry websites were not investigated to assess whether maternity provider affiliations were evident.

INTRODUCTION

Breastmilk has short-term and long-term health and well-being benefits for both mother and child.[1–3] For infants in the short-term, breast milk provides protection against respiratory infections and diarrhoeal diseases. These benefits have been associated with a lower mortality in the first 2 years of life, particularly in low-income and middle-income countries and lower hospitalisations in higher income countries.[1] Estimates suggest that optimal breast feeding rates could prevent as many as 823 000 deaths in children under 5 each year.[2] In the long-term, infants who are breast fed are less likely to develop cardiovascular disease, diabetes and obesity. Breast feeding has also been associated with higher performance in intelligence tests.[3] The maternal benefits include improved birth spacing and lower rates of postpartum depression, type 2 diabetes, breast and ovarian cancers.[4] A modelling study estimated optimal breast feeding rates could prevent 20 000 deaths from breast cancer annually.[2]

With the aim to promote and protect breast feeding, the World Health Assembly (WHA) adopted the International Code of Marketing of Breast Milk Substitutes in 1981. The Code defines breastmilk substitute (BMS) as 'any food being marketed or otherwise presented as a partial or total replacement for breast milk, whether or not suitable for that purpose'.[5] Marketing of BMS has been identified as one of the biggest barriers to breast feeding.[5] A number of resolutions accompany the Code to provide guidance to countries on regulating the marketing of BMS. Using extrapolation estimations drawn from one major BMS manufacturer in 2015, it is estimated that the BMS industry invests at least US$7 billion into marketing each year—this is equivalent about a 10th of the industry's worth into marketing.[6] Initially, the BMS industry primarily targeted marketing to consumers, but quickly moved to engaging healthcare workers and their professional associations.[7] The Code and its subsequent resolutions aim to prevent any promotion of BMS products both directly to the general public or via healthcare services and providers.

The Code as passed by the WHA, is unfortunately not legally binding and national governments have been left with the responsibility to legislate, enforce and implement the Code and its resolutions.[5] As a result, since 1981, there continue to be many documented violations of the Code globally. Examples include where mothers are directly given BMS samples,[8] or where healthcare professionals are provided with meals and sponsorships funded by the BMS industry.[9] A recent study found online evidence of financial support from BMS industry for 60% of 114 paediatric associations reviewed.[10] This targeting of healthcare workers is concerning as it has the potential to give rise to a conflict of interest and impact on perceptions and practice. Our study builds on the aforementioned study by expanding the scope of practitioners to include four different maternity care providers' associations in five countries. The aim of this study was to (i) examine whether maternity care provider associations had policy or positions statements addressing breast feeding and BMS marketing and (ii) explore the type of funding received by maternity healthcare provider associations in five countries.

METHODS

A cross-sectional review of publicly available online data was performed. Data were collected from national (n=26) and regional (n=2) maternity provider associations from the following five countries—Australia, New Zealand, the USA, Canada and the UK. As neighbouring countries, Australia and New Zealand share some joint maternity provider associations that represent both nations with a regional approach. Associations were eligible for inclusion if they were involved in maternity care provision, are national or regional associations based in one of the five selected countries, and their websites were in English. The five countries were selected due to their similarities—all are Organisation for Economic Co-operation and Development countries, English speaking, have similar health systems and maternity services. Maternity care provider associations for the four main maternity care providers were chosen—obstetrics, midwifery, nursing and perinatal care. To ensure that each country's relevant associations were included, the lists of associations were cross-checked with relevant international bodies, including the International Federation of Gynaecology and Obstetrics; International Confederation of Midwives; International Council of Nurses and World Association of Perinatal Medicine. Data collection was performed by the first author from November 2019 to October 2020 with the review taking place in January 2020. Any doubts were clarified with a second researcher.

For the five selected countries, relevant maternity provider association websites were reviewed for evidence of BMS industry funding. Data were collected primarily from selected associations' websites. This involved first identifying whether the association had an advertising/sponsorship policy, and/or a breast feeding or BMS position statement. If such a policy was found, it was reviewed to determine if it acknowledged the International Code of Marketing of Breast Milk Substitutes or had a standpoint regarding BMS industry funding. Any relevant policy or position statements identified were extracted into a predesigned Excel spreadsheet. Policies and statements were descriptively analysed to determine whether the association had a position regarding breast feeding and/or BMS use, and whether the Code and its resolutions were explicitly supported. To obtain further information regarding the associations' position on BMS funding, emails were sent to eight associations. Responses were received from only three associations. No further information was obtained and thus this approach was not pursued for the remaining associations.

Webpages were then searched to explore BMS industry funding or sponsorship. To obtain the associations' most current stance on marketing of BMS, events and publications from the previous 12 months were examined. This included looking for names, logos and other branding present through any journal, conference or newsletter websites/pages, professional development events or other grant websites/pages associated with the organisation. For conferences and other events, this included reviewing the list of sponsors and exhibitors. Where event information was unavailable on official websites, the associations' event websites or official Facebook pages were examined for any photos or slides from the event that served as evidence of sponsorship acknowledgement.

Companies were considered to be BMS manufacturers if their products aligned with the aforementioned definition of BMS presented in the International Code of Marketing of Breast Milk Substitutes. BMS sponsorship or advertising was deemed to be evident if the logo or name of a BMS manufacturer was identified within publicly accessible online platforms. In instances, where it was unclear if the sponsor was a BMS manufacturer, the logo

or name of a suspected BMS manufacturer was assessed via a Google search. This step identified BMS sponsors that were a subdivision or smaller company within a larger BMS corporation. Funding was categorised into either 'advertising' or 'sponsorship'. If the BMS manufacturer sought only recognition, for example, having the company logo on the website or event page, in return for their funding, it was considered 'sponsorship'. Where manufacturers sought to display and promote their products through publications, events or exhibitions, this was considered 'advertising'. For the purposes of this paper, any BMS industry advertising or sponsorship will be referred to as 'BMS industry support' henceforth.

Data regarding evidence of BMS industry support was extracted into an excel spreadsheet. Findings were tallied and cross-tabulated to obtain the proportion of associations with evidence of BMS industry support based on country and maternity care profession type.

Patient and public involvement

No patients were involved.

RESULTS

Twenty-eight maternity care provider association websites were identified from Australia, New Zealand, the USA, Canada and the UK (table 1). Of these, four were obstetrics and gynaecology (O&G) associations, eight were midwifery associations, ten were nursing and were six perinatal associations.

Across all 28 associations, half (14, 50%) had a policy addressing BMS marketing (table 2 and online supplemental table 1). The perinatal associations were the most likely (4, 67%) to have a BMS marketing policy. This was followed by the nursing (5, 50%) and midwifery associations (4, 50%). Only one (25%) obstetric association had a policy. At a country level, the UK associations were the most likely to have a BMS marketing policy (5 of 5 associations, 100%). Sixty per cent of Canadian and Australian maternity provider associations had policies that addressed BMS marketing. Publicly available online policies that addressed BMS marketing were not found for the Canadian or Australia/New Zealand obstetric associations. All of the New Zealand-based nursing and midwifery associations had policies. Policies that referred to BMS marketing were not found for any of the USA-based maternity provider associations.

The policy and position statements of associations expressed their stance on BMS funding in different ways (online supplemental table 1). One association described BMS companies as a 'conflict sector'. Other associations said that they would not engage in any 'advertisements … for artificial milk formulas, nipple creams or baby foodstuffs' and another specified that they supported 'no promotion of formula, bottles, pacifiers, or teats'. Many associations were specific and stated that they endorsed the Baby Friendly Hospital Initiative or that they were compliant with the 'WHO International Code of Marketing of Breast Milk Substitutes'. Some associations who had previously received BMS support expressed a shift with declarations such as 'no further funding will be accepted [from BMS companies]'. One association conditionally declined BMS support by stating it 'will decline any money from formula milk companies except for exhibition stands'.

Of the 28 associations, 6 (21%) were found to receive some form of financial support from the BMS industry (table 3 and online supplemental table 2). The most common type of financial support received was for events, with 5 (18%) having online evidence of BMS advertising and 4 (14%) were seen to have BMS sponsorship. Only one of the associations demonstrated BMS funding for their general website. None of the associations were seen to have BMS sponsorship associated with publications or scholarships.

The O&G associations were more likely to have BMS industry support (table 3), with two (50%) of the O&G associations receiving some financial support. Two of the four O&G associations had received BMS industry support for event sponsorship and advertising. The midwifery associations had the second highest proportion of BMS support with two out of the eight midwifery associations receiving BMS industry support (25%). One was for event sponsorship and the other for event advertising. Both the perinatal and nursing associations had one association that received BMS industry support. The one perinatal association that received BMS industry support, received support for several purposes including sponsorship of events, event advertising and website funding. The one nursing association received BMS industry support for event advertising.

Evidence of BMS industry support was highest (3, 43%) for USA-based associations (table 4), most commonly in the form of event sponsorship. Of the seven USA associations reviewed three (43%) received BMS industry support for advertising at events, two (29%) for event sponsorship and one (14%) received general website funding. The next highest instances of BMS industry support were linked with the Australia/New Zealand associations, with one (50%) receiving BMS industry support. Of the two reviewed, one received BMS industry support for both event sponsorship and event advertising. Of the five Australian and five UK associations reviewed, each country had one (20%) association that received BMS sponsorship; for event and website funding, respectively. None of the five Canadian or four New Zealand associations showed any evidence of BMS industry sponsorship.

DISCUSSION

Professional associations for maternity providers play a significant role in developing guidelines and providing education, determining patient advice, setting ethical and professional standards for their members and advocating in the best interest of mothers and babies.[11] Despite the critical role that maternity providers play in protecting

Table 1 List of associations based on profession and country or region

Profession	Associations	Country/region					
		Australia	New Zealand	Australia and New Zealand region	Canada	UK	USA
O&G	Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)			X			
	American College of Obstetricians and Gynecologists (ACOG)						X
	Society of Obstetricians and Gynaecologists of Canada (SOGC)				X		
	Royal College of Obstetricians and Gynaecologists (RCOG)					X	
Midwifery	Australian College of Midwives (ACM)	X					
	New Zealand College of Midwives (NZCoM)		X				
	Nga Maia Maori Midwives Aotearoa (Nga Maia)		X				
	American College of Nurse-Midwives (ACNM)						X
	Midwives Alliance of North America (MANA)						X
	Canadian Association of Midwives Association canadienee des sages-femmes (CAM ACSF)				X		
	National Aboriginal Council of Midwives (NACM)				X		
	Royal College of Midwives (RCM)					X	
Nursing	Congress of Aboriginal and Torres Strait Islander Nurses and Midwives (CATSINaM)	X					
	Australian College of Nursing (ACN)	X					
	Maternal, Child and Family Health and Nurses Australia (MCaFHNA)	X					
	Australian Nursing and Midwifery Federation (ANMF)	X					
	College of Nurses Aotearoa NZ (CNANZ)		X				
	New Zealand Nurses Organisation (NZNO)		X				
	American Academy of Nursing (AAN)						X
	American Nurses Association (ANA)						X
	Canadian Nurses Association (CNA)				X		
	Royal College of Nursing (RCN)					X	
Perinatal	Perinatal Society of Australia and New Zealand (PSANZ)			X			
	National Perinatal Association (NPA)						X
	South-eastern Association of Neonatologist (SAN)						X
	Canadian Association of Perinatal and Women's Health Nurses (CAPWHN)				X		
	British Association of Perinatal Medicine (BAPM)					X	
	The Neonatal society (TNS)					X	

O&G, obstetrics and gynaecology.

and promoting breast feeding, only half of their associations had policies or position statements that addressed marketing of BMS. Most of these policies or position statements expressed compliance with the Code. Only one partially adhered to the Code. These differences may relate to inter-country variability associated with legislation of the Code's resolutions. Of all the five countries included in this study, only the UK has legislated parts of the Code. The four remaining countries seem to have no legal measures in place.[12] Some of these countries have instead adopted self-regulatory agreements, for example, the Manufacturers and Importers Agreement[13] in Australia and the New Zealand Infant Formula Marketers' Association Code of Practice.[14] Self-regulatory agreements are associated with low industry participation rates, lack of compliance and less stringent accountability measures—making them a sub-optimal method for regulating BMS marketing.[15]

Over a fifth of maternity provider associations reviewed had some form of BMS industry support. At a country level, the USA-based associations were most likely to receive financial support, which reflects the aforementioned lack of legislation of the Code or it is resolutions by the USA.[12] At a maternity provider level, we found

Table 2 Number of maternal and health child associations that had a policy addressing marketing of breastmilk substitutes

Maternity care provider group	Australia n (%) (N=5)	New Zealand n (%) (N=4)	Australia and New Zealand region n (%) (N=2)	USA n (%) (N=7)	Canada n (%) (N=5)	UK n (%) (N=5)	Overall
Obstetrics N (%) (N=4)	–	–	0 (0%)	0 (0%)	0 (0%)	1 (100%)	1 (25%)
Midwives N (%) (N=8)	1 (100%)	1 (50%)	–	0 (0%)	1 (50%)	1 (100%)	4 (50%)
Nursing N (%) (N=10)	2 (50%)	1 (50%)	–	0 (0%)	1 (100%)	1 (100%)	5 (50%)
Perinatal N (%) (N=6)	–	–	1 (100%)	0 (0%)	1 (100%)	2 (100%)	4 (67%)
Overall	3 (60%)	2 (50%)	1 (50%)	0 (0%)	3 (60%)	5 (100%)	14 (50%)

that O&G associations were most likely to receive BMS industry support, most commonly associated with events. Other forms of support, such as, for publications, were difficult to access on publicly available webpages, often inaccessible to non-members. It is likely that our results may underestimate the true amount of funding support provided by the BMS industry to maternity care provider associations. At a minimum, this finding suggests a need for further transparency regarding advertising and sponsorship.

There is significant evidence that commercial sponsorship and advertising can influence health practices. This concept has been referred to as the 'commercial determinants of health' and defined as 'strategies and approaches used by the private sector to promote products and choices that are detrimental to health'.[16] As our study and others before have found, one of the strategies used by BMS industry to exert its corporate influence is to target marketing towards healthcare professionals and their associations. The BMS industry's engagement with healthcare providers and their associations is often justified by arguing it facilitates the dissemination of scientific findings related to infant nutrition.[17] However, this and any opportunistic affiliation, has the potential to create a conflict of interest and influence healthcare provider perceptions and practices.

A conflict of interest in the healthcare setting occurs when there is a clash between a healthcare organisation or professionals' interest in patients' health and personal or organisational interest. These interests are typically financial but can also be related to career advancement or reputation.[18] Many studies have shown that conflicts of interest can impact patient care and research. Some have found that healthcare organisations or professionals with financial ties to pharmaceutical companies were more likely to recommend a certain product.[19–21] Other research has shown that researchers with financial ties to the tobacco industry were more likely to reach conclusions that undermined effects of smoking.[22] Any form of industry funding can create a conflict of interest. While the WHO Code is a key reference document, there may be a need for a global standards document specifically regarding industry funding for professional organisations, with recognition of the potential impacts on professional standards and undergraduate/postgraduate training.

We found that for maternity care providers, events were most commonly associated with BMS funding. When the private sector sponsors an event it may influence the information presented.[23] Exhibitions by industry at events, such as conferences, can subconsciously influence attendees perceptions of BMS products. The provision of gifts by exhibitors like branded pens, is a well-known way

Table 3 Number of maternal and health child associations that receive any support from breastmilk substitutes manufacturers based on website review, by type of support and by profession

Type of financial support	Obstetric n (%) (N=4)	Midwifery n (%) (N=8)	Nursing n (%) (N=10)	Perinatal n (%) (N=6)	Overall (N=28)
Event sponsorship	2 (50%)	1 (13%)		1 (17%)	4 (14%)
Publication sponsorship					0
Scholarship sponsorship					0
Funding website or general use				1 (17%)	1 (4%)
Advertising in publications					0
Advertising at events (exhibitors)	2 (50%)	1 (13%)	1 (10%)	1 (17%)	5 (18%)
Any financial support	2 (50%)	2 (25%)	1 (10%)	1 (17%)	6 (21%)

Table 4 Number of maternal and health child associations that receive any support from breastmilk substitutes manufacturers based on website review, by type of support and by country

Type of financial support	Australia n (%) (N=5)	New Zealand n (%) (N=4)	Australia and New Zealand region n (%) (N=2)	USA n (%) (N=7)	Canada n (%) (N=5)	UK n (%) (N=5)	Overall (N=28)
Event sponsorship	1 (20%)		1 (50%)	2 (29%)			4 (14%)
Publication sponsorship							0
Scholarship sponsorship							0
Funding website or general use				1 (14%)			1 (4%)
Advertising in publications							0
Advertising at events (exhibitors)			1 (50%)	3 (43%)		1 (20%)	5 (18%)
Any financial support	1 (20%)	0 (0%)	1 (50%)	3 (43%)	0 (0%)	1 (20%)	6 (21%)

of garnering subconscious support.[24] Many studies have found that, regardless of how small a gift may be, there is not only brand recognition but also a human tendency to feel indebted to repay the industry in question and in turn this influences health professional practices.[25] Although our findings were highest BMS support for events, it is possible that our findings underestimated the true BMS industry engagement with association's events. This underestimation is due to our study being limited to a review of publicly accessible information over the last 12 months.

In our study, we were not able to determine the true extent of BMS industry funding of publications as many were inaccessible to non-members on public facing websites. However, a previous study that examined the presence of any financial support associated with paediatric associations, found that around 4% of association publications received BMS support.[10] BMS funding of healthcare association journals has the potential to skew not only current stances on breast feeding but also future healthcare practices. Ultimately, all forms of BMS industry funding of healthcare associations has the potential to undermine efforts to support, protect and promote breast feeding—the key tenets of the WHO/UNICEF Baby-friendly Hospital Initiative.[26]

We recognise and acknowledge that healthcare associations need funding to continue their work and thus some level or type of industry funding may not be completely avoidable. First, associations need to be selective with the types of industry that they engage with and ensure this engagement does not introduce a conflict of interest. Second, healthcare associations should look to alternative sources of funding. Given most (almost 80%) of the associations in our study did not have BMS funding, seeking alternative sources of funding is possible. Some medical societies have chosen to completely reject industry support.[21] There is an ongoing need to seek ethical sources of funding to curb the undue influence of industry, like BMS manufacturers. Previous studies suggest that associations can increase the membership costs to cover costs or lower costs by opting for cheaper alternatives.[27 28] Third, associations, at a minimum, should have a policy or position statement expressing their support for breast feeding, their stance on BMS and BMS marketing. Our study found that only half of the associations had an online statement addressing breast feeding and BMS industry. Some associations that had policy statements still had evidence of BMS industry support. In one case, the BMS sponsorship link was discreet, a small arm of a larger BMS manufacturer. This is a challenge that may be faced by healthcare associations in recognising and minimising BMS sponsorship in the first place. Many BMS manufacturers are a part of a larger parent business group that have multiple other branches that appear unrelated to BMS manufacturing. On first glance, if another branch sponsors the association, it may appear as though BMS industry support is not present. However, because all branches of the company are funded by the parent business group, there is still an affiliation present. To help maternity care provider associations avoid this type of covert affiliation, it may be useful to develop a public registry of BMS manufacturers.

There is a need for maternity provider associations to consider legally binding declarations of industry sponsorship and have strategies to manage conflicts of interest. Legally binding declarations would ideally limit undue industry influence on professional organisations' involvement in position statements or guideline development. With respect to conflict of interest disclosure policies, these are a common and cost-effective strategy to further promote transparency and reduce industry influence. However, some studies have found that disclosure can sometimes have unintended ramifications[29 30] where it increases the occurrence of industry engagement.[23] In fact, the recent research on BMS industry support in paediatric associations suggests that associations with disclosure policies were more likely to have BMS industry support[9] suggesting the need for additional conflict of

interest management protocols. This may include transparency around the amount of funding received and the way this funding is used.

Strengths

This study is the only study that gives insight into the evidence of BMS industry support for maternity healthcare provider associations. Strengths of this study include that it undertook a systematic, objective and comprehensive search on 28 associations across five countries. Our study is also the first to examine the presence of policies addressing BMS marketing in these professional associations.

Limitations

The main limitation of the study was the reliance on publicly available online information. Many associations have website pages and other associated publications that are available for members only, for example, in the form of printed publications. Non-public pages and publications could not be accessed and examined for BMS sponsorship. This may mean that the findings of BMS industry support were underestimated.

The study was limited to a select number of high-income countries. Future studies should include non-English speaking countries and low-income and middle-income countries as these are areas of high concern in terms of breast feeding, infant mortality and exploitation by the BMS industry. We limited our search to events and publications within the last 12 months in order to reflect the association's current BMS funding, but this may not reflect their historical and overall approach to BMS industry support. This study examined for the presence of policy and position statements addressing BMS marketing but, an analysis of the policies and position statements were not performed. This study did not investigate the websites of BMS manufacturers for evidence of affiliation with certain healthcare provider associations. This was not performed due to the sheer volume of companies that exist and the fact that company structures may mean it is difficult to elicit connections with smaller companies to BMS manufacturers.

CONCLUSION

Based on publicly available data, we found that over one-fifth of maternity provider associations reviewed receive financial support from the BMS industry. Of the different types of financial support investigated in this study, BMS industry support was most commonly targeted towards event sponsorship and advertising. Only half of the associations had policies addressing BMS funding and marketing. Any funding from BMS has the potential to unduly influence the practice of maternity providers who play a critical role in protecting, promoting and supporting breast feeding. To prevent conflicts of interest, maternity healthcare provider associations should avoid BMS funding and seek out alternate options. It is essential that maternity provider professional associations have clear position or policies statements regarding breast feeding, receiving BMS funding and make efforts to avoid funding from the BMS industry wherever possible.

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Contributors ANW, CSEH and SQ came up with the idea for the study. SQ collected the data and drafted the paper. ANW and CSEH oversaw the data collection, conducted data analysis and contributed to the draft. ANW is guarantor. All three authors reviewed the final paper.

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Patient consent for publication Not applicable.

Ethics approval Due to the nature of the study and the use of only publicly available data, ethics approval was not required. This study does not involve human participants.

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