




# BMJ Open They push their products through me: health professionals' perspectives on and exposure to marketing of commercial milk formula in Cape Town and Johannesburg, South Africa – a qualitative study

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## ABSTRACT

**Objective** To understand the views of public and private sector health professionals on commercial milk formula, to describe their exposure to companies that market commercial milk formula within their workplaces and to describe their awareness of South African (SA) regulations.

**Design** A qualitative study consisting of semistructured interviews.

**Setting** The study was conducted in Cape Town and Johannesburg, SA.

**Participants** Forty health professionals who had regular contact with pregnant or postnatal women were interviewed between February 2020 and February 2021.

**Results** Analysis of the interviews revealed six themes. Health professionals in the private sector reported frequent contact with industry representatives with over two-thirds reporting exposure to industry representatives to present products, provide training or sponsor educational activities. Participants held strong opinions regarding the equivalency of breastfeeding to commercial milk formula citing information from industry representatives and product packaging. Health professionals were very knowledgeable on so-called formulas for special medical purposes and these were valued as solutions to infant feeding challenges. Of the 40 health professionals interviewed, less than half (19) had ever heard of the SA regulation related to marketing of breast milk substitutes (R991).

**Conclusions** This study demonstrates clearly that health professionals, particularly in the private sector, are exposed to and promote the use of commercial milk formula among SA women. The findings of this study should be used to catalyse policy responses, social movements, consumer and professional association action to strengthen monitoring and enforcement of the Code regulations in order to protect breastfeeding and support the optimal health and well-being of the population.

## Strengths and limitations of this study

- This is the first study in South Africa to explore the views of health professionals on commercial milk formula and its marketing.
- We included health professionals from both public and private sector health facilities.
- Due to the COVID-19 lockdown, nine of the interviews were conducted using telephone or voice over internet protocol. This may have limited the rapport between the interviewer and interviewee and impacted on the observation of non-verbal responses.

## INTRODUCTION

Breastfeeding is critical to achieve a number of the Sustainable Development Goals. Not only do optimal breastfeeding practices play a major role in maternal and child health and survival, the protection persists until later in life and confers large societal benefits. The disadvantages of commercial milk formula compared with breastfeeding are universally recognised. Not breastfeeding is associated with economic losses globally of about US\$302 billion annually or 0.49% of world Gross National Income.<sup>1</sup> Specifically for South Africa (SA), a more recent analysis using the 'Cost of Not Breastfeeding Tool' estimated the total future cost (health system, mortality and cognitive) attributed to not breastfeeding (exclusive breastfeeding, EBF 0–5 months vs non-EBF) at 0.68% of Gross National Income (95% CI 0.21% to 2.62%).<sup>2</sup>

Despite this knowledge, global rates of breastfeeding, particularly EBF, are low.<sup>3</sup> In an effort to protect breastfeeding and respond to growing evidence of aggressive and



inappropriate marketing strategies of commercial milk formula companies,<sup>4 5</sup> the 34th World Health Assembly (WHA) in 1981 adopted Resolution WHA34.22, which included the International Code of Marketing of Breast-milk Substitutes (the Code) as a ‘minimum requirement’ to be adopted ‘in its entirety’.<sup>6</sup> Globally, 136 out of 194 countries have Code-related legislation, yet contraventions and violations persist in the face of weak monitoring and enforcement mechanisms.<sup>7 8</sup> Commercial milk formula marketing has been found to influence infant feeding behaviours, health system practices and community norms around the social acceptability and desirability of formula use through multiple channels<sup>9 10</sup> including endorsements by health professionals.<sup>10–12</sup>

SA has historically reported one of the lowest EBF rates in Africa. Demographic and health surveys conducted between 1998 and 2016 reported EBF rates in SA infants, aged 0–6 months ranging from 7% to 32%.<sup>13</sup> The HIV epidemic has been a contributing factor for avoiding breastfeeding due to the provision of free commercial milk formula through the prevention of mother to child transmission of HIV programme between 2001 and 2012.<sup>14 15</sup> In 2011, the National Minister of Health held a consultation on breast feeding, which led to a clear shift in national policy to promote EBF, through the release of the Tshwane Declaration of Support for Breastfeeding in SA.<sup>16</sup>

Since its adoption by the WHA, ‘the Code’ was first applied on a voluntary basis in SA. It had no legal standing until 2012 when SA enacted legislation on ‘the Code’ through the Regulations Relating to Foodstuffs for Infants and Young Children (R991) in terms of section 15(1) of the Foodstuffs, Cosmetics and Disinfectants Act.<sup>17</sup> R991 aims to protect and promote optimal infant and young child feeding practices and to encourage the safe and appropriate use of commercially processed foods through regulating the labelling, advertising, sale and promotion, and the provision of information and education relating to infant and young child feeding and nutrition.<sup>18</sup> The regulations are accompanied by a separate document providing guidelines for industry and health-care personnel which aims to interpret the provisions in the regulations in a ‘question and answer’ format.<sup>19</sup> In the 2020 status report on national implementation of the international Code, SA scored 87 out of 100 in terms of having legal measures aligned with the Code (table 1).<sup>7</sup> The only category where SA scores low is in terms of provisions on informational and educational materials from industry. Despite the presence of legal measures which are substantially aligned with the Code, recent research has documented widespread violations.<sup>11 20 21</sup>

Healthcare services in SA are provided through both a private and a public sector. The public health sector serves more than 80% of the population (around 40 million South Africans) who are without private health insurance. However, the General Household Survey and other sources indicate that the uninsured population make significant use of private sector services

on an out-of-pocket basis, and the insured population also makes some use of public sector services.<sup>22</sup> The SA government is preparing to implement a National Health Insurance (NHI) scheme<sup>23</sup> as a mechanism towards provision of universal health coverage. Under the NHI, public resources will be used to strategically purchase health services for the entire population from both the public and private sectors.<sup>24</sup>

Almost a decade since the enactment of regulation R991, this qualitative interview study sought to understand the views of public and private sector health professionals on commercial milk formula and the marketing thereof, to describe their exposure to companies that manufacture, distribute or sell commercial milk formula within their workplaces and to describe health professionals’ awareness of SA regulations.

## METHODS

### Study design

This qualitative interview study<sup>25</sup> aimed to understand the views of public and private health professionals on commercial milk formula and to describe their exposure to companies that manufacture, distribute or sell commercial milk formula.

### Study setting and sampling

The study was undertaken in metropolitan areas of Cape Town and Johannesburg. Urban settings were selected as these are generally considered trend-setters for health practices and therefore commonly targeted for marketing activities. A list of appropriate health professionals categories was created by the study team. Appropriate health professionals were deemed as having regular (at least three times a week) contact with pregnant women and mothers. The study team identified public and private health facilities (hospitals, clinics and private practices) that offered antenatal, maternity or postnatal services. Health professionals were recruited through a range of methods including visits to the identified health facilities, and through snowball referral sampling, where a respondent recommended another health professional for interview. Where health professionals were recruited at their place of work, the heads of the identified health facilities were contacted for approval to approach staff for participation in individual interviews.

Health professionals approached for participation included paediatricians, general practitioners, midwives, nurses and lactation consultants who had regular contact with pregnant or postnatal women. Potential respondents were provided with an informed consent form outlining the purpose of the study. The researchers aimed to recruit 20 health professionals per metropolitan area and when this initial number was reached it was determined that further interviews would be unlikely to reveal new information. All potential participants who were approached agreed to participate.

**Table 1** Status of South Africa's legal measures aligned with provisions in 'The Code'

Categories monitored	Legal provisions	Score
Scope (out of 20)	BMS products covered up to age 36 (months)	20
Monitoring and enforcement (out of 10)	Identifies who is responsible for monitoring compliance	8
Informational/educational materials (out of 10)	<p>The benefits and superiority of breast-feeding</p> <p>Maternal nutrition and maintenance of breast-feeding</p> <p>The negative effect on breast-feeding of introducing partial bottle-feeding</p> <p>The difficulty of reversing the decision not to breastfeed</p> <p>Proper use of infant formula</p> <p>Social and financial implications of its use</p> <p>Health hazards of inappropriate feeding</p> <p>Health hazards of inappropriate use of powdered formula</p> <p>Risk of intrinsic contamination of powdered formula</p> <p>Reference to proprietary products</p> <p>Pictures or text idealising BMS</p>	4
Promotion to general public (out of 20)	<p>Advertising</p> <p>Samples to public</p> <p>Promotional devices at point of sale</p> <p>Gifts to pregnant women and mothers</p> <p>Contact with mothers</p>	20
Promotion in healthcare facilities (out of 10)	<p>Overall prohibition on use of healthcare facility for promotion</p> <p>Display of covered products</p> <p>Display of placards or posters concerning covered products</p> <p>Use of health facility to host events, contests or campaigns</p> <p>Use of personnel provided by or paid for by manufacturers and distributors</p>	10
Engagement with health workers and systems (out of 15)	<p>Overall prohibition of all gifts or incentives to health workers and health systems</p> <p>Financial or material inducements to promote products within the scope</p> <p>Fellowships, study tours, research grants, attendance at professional conferences</p> <p>Donations of equipment or services</p> <p>Donations prohibited only if they refer to a proprietary product</p> <p>Product samples</p> <p>Product information restricted to scientific and factual matters</p> <p>Sponsorship of meetings of health professionals or scientific meetings</p>	13
Labelling (out of 15)	<p>Prohibition of nutrition and health claims</p> <p>The words 'important Notice'</p> <p>Statement on superiority of breast-feeding</p> <p>Statement on use only on advice of a health worker</p> <p>Instructions for appropriate preparation</p> <p>Warning against the health hazards of inappropriate preparation</p> <p>Warning that powdered formula may contain pathogens</p> <p>Pictures that may idealise the use of infant formula</p> <p>Recommended age for introduction of the product</p> <p>Importance of continued breast-feeding for 2+ years</p> <p>Importance of no complementary foods &lt;6 months</p> <p>Importance of no complementary foods &lt;8 months</p> <p>Messages that recommend or promote bottle-feeding</p> <p>Professional endorsements</p>	12
<b>Total score</b>		<b>87/100</b>

Green indicates that the provision is included in the national legal measures (R991); red indicates that the provision is not included in R991.



## Participants and data collection

A semistructured interview guide was developed with key areas to be covered including health professional exposure to commercial milk formula marketing, knowledge of current legislation to protect breastfeeding and health professionals' interactions with manufacturers of commercial milk formula.

Although there is a WHO and UNICEF quantitative toolkit of protocols (NetCode) available for ongoing and periodic assessment of adherence to the Code,<sup>26</sup> we chose not to apply the periodic assessment protocol for the objectives of this study. NetCode is a quantitative assessment using a survey tool to interview health professionals with the aim to report on indicators related to the prevalence of contact with industry. For our qualitative study we chose to rather use a semistructured interview tool to enable us to explore in-depth health professionals' views on marketing and their understanding of national regulations. Our interview tools allowed for participants to share experiences beyond the opening questions. Some of the themes covered however were the same as those asked in the periodic assessment tool and could thus inform the national monitoring process.

Seven female interviewers (three in Cape Town and four in Johannesburg) conducted the interviews. Each interviewer had at least 3 years' experience working as a qualitative researcher and received additional study specific training by a member of the research team. These sessions provided background to the study, objectives of the study, recruitment and screening processes, discussed COVID-19 safety protocols, provided an overview of the ethical considerations for the study and a thorough review of the interview guide.

Semistructured interviews were conducted with 40 health professionals (table 2) between February 2020 and February 2021, 21 in Cape Town and 19 in Johannesburg. Fieldwork was paused from February to September 2020 due to the COVID-19 lockdown restrictions and restarted in September 2020. COVID-19 safety protocols were introduced on resuming fieldwork. Nine of the interviews were undertaken using telephone or voice over Internet protocol (Zoom). The remainder of the interviews were conducted at the participants' place of work in a private room, or at a venue of their choice. Interviews lasted between 45–60 min. All interviews were conducted in English, audio recorded and transcribed verbatim.

Out of 40 health professionals, 23 worked in the private sector and 17 in the public sector. Details of the profession and sex of participants can be found in table 2.

## Data analysis

Transcripts were validated against the recording to ensure accurate transcription. Thematic content analysis using an inductive, iterative approach was applied.<sup>25 27</sup> Five members of the research team (TD, CH, SL, CJP-K and LH) read transcripts and met frequently over a 3-month period to agree on a coding framework and major themes. Results are reported in narrative form in this paper.

**Table 2** Profile of participants

	Public sector (17)	Private sector (23)
<b>Study site</b>		
Cape Town	8	13
Johannesburg	9	10
<b>Profession</b>		
Nurse/midwife	11	8
General practitioner	1	7
Paediatrician	5	3
Lactation consultant	0	5
<b>Gender</b>		
Female	17	21
Male	0	2
<b>Place of work</b>		
Clinic	5	4
Hospital	12	12
Private retail pharmacy store	0	1
Private ambulatory GP practice	0	6

GP, general practitioner.

## Patient and public involvement statement

Patients/the public were not involved in designing this study. We plan to produce a dissemination presentation and brief to help to disseminate the findings to the public.

## RESULTS

Analysis of the interviews revealed six themes related to health professionals' contact with commercial milk formula companies, views and experiences of commercial milk formula within their workplaces and awareness of the South African legislation R991. Similarities and contrasts between public and private sector health professionals are highlighted throughout.

### Health professionals as strategic allies in the marketing of commercial milk formula

Private sector health professionals, both doctors and nurses described frequent, often monthly, contact with representatives of companies manufacturing commercial milk formula. Sixteen of the 23 health professionals working in the private sector reported direct contact from these companies in their workplaces.

I see the formula reps a lot. I see at least 3 of them that I see regularly. They tell me all the latest and I can never remember all of the special things that they tell me. I have millions of pamphlets. Yeah, and they push their products through me. (IDI-23, general practitioner, private practice, Cape Town)

We do, we see the formula reps and they give us information. Ja, they must, otherwise how will we know?

I think we just sort of have our regulars, that once a month visit. (IDI-37, postnatal nurse, private baby clinic, Cape Town)

It's only the reps who will give you the nutritional information and why that is a good formula, and why you have to recommend it. But I think that we need (that), because if we don't have that info, who does? (IDI-40, lactation consultant, private hospital, Cape Town)

One health professional commented that contact between manufacturers and health professionals had been reduced following implementation of the R991 legislation, which she did not agree with because she considered advising mothers regarding the benefits of formula to be part of her role:

It was a lot before. Not anymore, it's from government, it was stopped, they said they must stop bribing nurses and all that. And it wasn't bribing us, it was like, motivating us to sell and to motivate mummies with good nutrition. (IDI-19, paediatric nurse, private retail pharmacy, Johannesburg)

Industry representatives also gave educational talks to staff at private hospitals where their products were on display and manufacturers sponsored health professionals to attend training. Two of the 17 public sector health professionals and 13 of the 23 private sector health professionals had attended events sponsored by manufacturers, most commonly educational lectures and training. Almost all private health professionals felt that the information they received from companies was important, that companies were the only possible source of information for them on commercial milk formula and they did not perceive the contact to be a conflict of interest as several participants explained:

I think that it is important for health care professionals to be educated on formula, I do believe in that ...I don't believe that you should say no to a rep because you need to be knowledgeable... Ya they always message me to give me the latest updates and I think it is important to have it. They often give me a chart with all the different ones and it helps the parents a lot when they are asking you and you can show them the chart (IDI-38, lactation consultant, private practice, Cape Town)

Nestle NAN would come and they would give in-service training on their new products and stuff. Maybe once every 4 to 6 months. It would just be about the new type of NAN and the added benefits as opposed to the old NAN—that's basically it and how it affects the gut and things like that.'(IDI-27, maternity and postnatal nurse, private hospital, Cape Town)

Only two health professionals, a lactation consultant in a private hospital and a paediatric nurse at a private hospital believed that the education from companies was

bordering on product promotion and negatively influenced the promotion of breastfeeding. One example is given below:

To say that we can't be doing advocating for this and then having this company coming to advertise themselves to us as if we endorsing them. Because if you have your brand and I go around telling people about your brand I might as well be endorsing you even though on the side I still say breast milk. If we constantly get representatives coming to us or having direct contact with us for us to promote their formula, then we ultimately stop promoting breast milk' (IDI-05, paediatric nurse, private hospital, Johannesburg)

In contrast, none of the 17 health professionals working in the public sector reported having been directly contacted by a company that sells commercial milk formula and participants described this as being due to the legislation:

No, no one is coming. In the olden days they used to come. Before this—they are not allowed to advertise anywhere. So they used to come, but now nothing, nothing. We don't even—it is not even around the clinics to come and talk about it. We don't encourage anything about the formula feeding. They are no longer coming to us to advertise. Even if a person approach we say – no, get out. We don't want anything about that here. We are not allowing anything about those agencies coming.' (IDI-13, maternity nurse, public sector clinic, Johannesburg)

'No, they are not allowed to do any promotions or marketing. They are not allowed to bring reps into the hospital.' (IDI-08, Paediatrician, public hospital, Cape Town)

### Health professionals' perceptions of commercial milk formula marketing

Health professionals in both the public and private sectors described a common perception regarding commercial milk formula, namely that they believe it has become similar or equivalent to breastfeeding. They had gathered this information either from the formula packaging or from information received during the regular industry representative visits. Health professionals were able to describe the new components that have been added to formula, such as human milk oligosaccharides (HMOs), to make them appear more similar to breast milk and they shared being impressed with these advancements. Some health professionals went as far as conveying this message to mothers regarding the equivalence of commercial milk formula with breast feeding and they described using this argument as a way of reassuring mothers if they had chosen not to breastfeed. The following quotes illustrate these views and understandings:

The formula milk advertised that it's as good as breast milk, because they think it's the same as breast milk... they put a lot of HMOs in the milk, human milk. The

NAN Supreme is the first formula with a HMO. So there's a lot of new things that they have. They bring all that stuff that is in breast milk, they put it in the formula milk. And there was a rep now, there's a new S26 Gold, it's the latest thing they put in for the brain development. But it is not the same. Nearly the same, but not. (IDI-40, lactation consultant, private hospital, Cape Town)

What we're telling them, it is the best because nowadays, there's those formulas who are made really exactly like breast milk.' (IDI-19, paediatric nurse, private retail pharmacy, Johannesburg)

There are formulas that are very close to having ingredients, if I may call it that, that are in breast milk. I found that there are such formulas that give almost the same amount of nutrients and it's very close to breast milk. There are formulas that have gone that far. (IDI-20, antenatal and postnatal nurse, public clinic, Johannesburg)

Participants also spoke of several marketing tactics used by companies including using language such as 'hungry baby', messages on the tins suggesting health benefits of formula and the way it is placed within shops to attract mothers to purchase it. Health professionals described that the messages used in commercial milk formula marketing can sway women's choices especially if they are experiencing challenges with breastfeeding as several participants explained:

Using everyday terms like a hungry baby and a colic baby to attract the attention of a mother on the tin. Mothers are strange things, and especially new mothers ... if you put something like for a hungry baby, I think my baby's hungry. And it's not true, there's no difference from that one and there's no evidence it works, like manipulating things' (IDI-28, family physician, public clinic, Cape Town)

I think that because formula is marketed and branded in a certain way, we believe that it's good for our babies. I think a mom who has had a tough day or a tough week breastfeeding, who walks past those aisles might think, uh you know, maybe this is what my baby needs (IDI-21, general practitioner, private practice, Cape Town)

I also think that the companies make it very glamorous for moms to formula-feed your baby, and they tell the mummies that it's the same as breast. Also, if you're tired and you heard on the radio that the formula milk is just as good as breast milk and it's so wonderful and this and that, this nutrient and that nutrient—if you're tired then you go, oh wow, then I can just buy a tin of formula. So they definitely make it for mummies very attractive to formula-feed. (IDI-40, lactation consultant, private hospital, Cape Town)

So I mean, if you have a healthy, happy baby smiling on the TV, drinking NAN, then you're going to go

for it.' (IDI-01, general practitioner, private practice, Johannesburg)

### Formulas for special medical purposes

Health professionals across public and private settings described the biggest advances in commercial milk formula being the growth in so-called 'specialist' formulas. Participants were very aware of the many different types of specialist formulas and described them as being a very helpful solution to common infant health challenges, often recommended as such by industry representatives, and as an easier alternative to providing counselling and support for breastfeeding. As several participants explained:

We have a rep that comes and tells us about Novalac and explains the difference between the different types—the one for colic and the one for diarrhoea. There's formula for regurgitation, for colic, for babies that are crying excessively, those who have gas, those who are constipated quite often, those who have diarrhoea breastfeeding. So yeah, there's something for everybody...Yes, every type of baby. (IDI-01, general practitioner, private practice, Johannesburg)

Some of the Doctors, the Paediatricians, they don't want to sit the whole day with these feeding problems, then they will say, okay no it looks like it's an intolerance. You know without support or anything—it's an intolerance and I'm going to do that—try that. (IDI-34, paediatric nurse, public hospital, Cape Town)

So I think they are more advanced and they help deal with more baby deficiencies or diagnoses that babies come up with—malnutrition, colic, allergies. (IDI-15, paediatric nurse, public hospital, Johannesburg)

Allergies and reflux were described as being common complaints and the solution was seen by health professionals to be the introduction of products claiming to be formulas for special medical purposes as several participants described:

Now with these formulas, they try to cover everything. If the baby's got diarrhoea at least they're trying to make those formulas for that period that the baby's having diarrhoea. If the baby has got allergies and all that, we can actually advise about the Nan HA (hypoallergenic). (IDI-19, paediatric nurse, private retail pharmacy, Johannesburg)

So I know with the anti-reflux I know the frustration that the moms have because the child is also uncomfortable and they're vomiting the whole time, so I think the specialised milks are very helpful. (IDI-27, maternity and postnatal nurse, private hospital, Cape Town)

Only one health professional acknowledged that few infants have a legitimate need for a formula for milk protein allergy.

There is probably only a couple of percent of babies that really legitimately have a milk protein allergy (IDI-38, lactation consultant, private practice, Cape Town)

### Relationships between manufacturers of commercial milk formula and private hospitals

There was a stark contrast in terms of mechanisms for procurement and visibility of commercial milk formula between private and public sector health facilities. Nurses working in private hospitals described the processes that are followed to decide which commercial milk formulas to keep in stock. Across the private hospitals represented in this study the arrangements ranged from rota systems, long-term affiliation to a particular brand and periodic changes based on new products available.

Participants from the private sector spoke about needing to ensure fairness between companies by changing contracts (and therefore products) regularly. They even viewed this process as a way for the companies to advertise their products as one neonatal nurse described:

Not everybody will like to breastfeed, then there's a formula in the hospital. Every three months we change the company so that everybody can get a fair share. There are so many companies and I think they're giving a fair share to advertise their product. I think it's procurement who are doing it and the doctors also. I think it's discussed on a management level that everybody gets a fair share. (IDI-04, neonatal nurse, private hospital, Johannesburg)

Participants described that these decisions are made following visits by industry representatives to inform hospital management, paediatricians and nurses on new products and sometimes following a trial period of products in the wards. Nurses were aware of the 'political' and economic nature of these decisions where some hospitals tend to have long-term affiliations to certain brands and other companies are vying for their place as two nurses described:

They recommend, because when these reps come, they come, they present. Then it is tested, but the doctors now come together and say—okay, we are happy about this. Then when they are happy it is pushed into the wards. The reps belong to the formula company—they come and present to the paediatrician. Then the paediatricians they have a board where they sit and decide. (IDI-06, postnatal nurse, private hospital, Johannesburg)

It's quite political—certain hospitals have certain brands and so like at (name of hospital in Johannesburg) it's less there, so more the other brands fighting to get in there. Unless a mom comes in with their own tin of formula that she wants to use, the babies are routinely all put onto a Nestlé. (IDI-07, paediatric nurse, private hospital, Johannesburg)

In contrast, none of the health professionals from the public sector spoke about the decision-making process regarding formula procurement and they described having very little contact with commercial milk formula which is only used when medically indicated as several public sector health professionals explained:

Every time we prescribe formula, it's on a prescription type of thing, it's not seen as a normal thing in our practice in any case. We want breast milk. (IDI-29, paediatrician, public hospital, Cape Town)

It's been a while since we saw those formula. Even with the dieticians, they don't give us anymore. They don't have. Everything is being done correctly by saying breastfeed. (IDI-17, nurse, public hospital, Johannesburg)

### Introduction of formula after delivery entrenched in private sector practices

A stark contrast that emerged from these interviews between private and public sector health professionals was the practice of giving formula 'top-ups' in the first few days after birth because of the belief that colostrum is insufficient. These 'top-ups' were described to be almost routine in some hospitals as a private general practitioner stated:

Some moms will produce tiny bits of Colostrum until 5 days and then the milk comes in and the baby has to have a top-up formula—there's nothing you can do. (IDI-24, general practitioner, private practice, Cape Town)

Nurses acknowledged that introducing formula early after birth did influence long-term breastfeeding success, which they felt was related to lack of confidence in breastfeeding, as two nurses in private hospitals shared:

Post-delivery a few of them a few hours later, well I am not getting enough milk uhm I think we might just have to give formula feed. So, for the first few days I would say 6 out of 10 actually struggle. Hence once they start formula then most of them will ultimately continue with formula. (IDI-05, paediatric nurse, private hospital, Johannesburg)

Very, very few women come in and say, I've been breastfeeding exclusively. The odd mom will say, my baby had one or two top-ups in hospital, we haven't done it since then. Because as I say, it's a confidence thing. The moms are going out of the hospitals topping up. (IDI-07, paediatric nurse, private hospital, Johannesburg)

Health professionals viewed the giving of top-up formula as the solution to breastfeeding challenges and a form of support for women while acknowledging that it goes against infant feeding guidelines as one private paediatrician explained:

'Look the modern way is not to top them up, but there are moms that after 6 hours of screaming, I'll

give them a little bit of a top up with formula.... if there is a problem we have to support them through it and if they need a bit of top up, a bit of extra formula, we have to do it. (IDI-02, paediatrician, private hospital, Johannesburg)

Health professionals in the public sector considered insufficient breast milk to be a rare event which could be managed through lactation support and counselling. Only two public sector health professionals, both nurses from Johannesburg, mentioned using formula to top up breast milk in hospital and in one of these participants it was described in relation to women post caesarean section.

That is a very rare case. It is very rare for a mom not to have enough breast milk if she is regularly breastfeeding her child and she is eating well and well hydrated and she is drinking enough and resting enough. So those are the first few things we would try. (IDI-11, paediatrician, public hospital, Johannesburg)

'Then we give them formula because we cannot starve the baby. If the mother doesn't have enough breast milk we cannot keep forcing her. So we do give them formula. Most of the mothers that usually top up are the ones that have done caesarean section because they're usually out of it after a caesarean section and ... so in that moment when the mother is not ok we give the baby formula.' (IDI-14, paediatric nurse, public hospital, Johannesburg)

### Health professional knowledge and perceptions of Regulation 991

Of the 40 health professionals interviewed, less than half (19) had ever heard of the South African regulation relating to foodstuffs for infants and young children (R991), which prohibits the marketing of breast milk substitutes. Awareness of the legislation was higher among health professionals in the private sector (13 out of 23) compared with the public sector (6 out of 17). The vast majority of health professionals agreed that the legislation was necessary although considerable sentiment was expressed that this legislation was harsh for the companies. Among private health professionals, some acknowledged that they had obtained information on the legislation from companies themselves as the representatives explained during their interactions what they were not permitted to do as several participants explained:

I think we've heard more from the actual manufacturers what's required, than anyone else I'd think. So we have had exposure, but funny enough mainly from the actual manufacturers and what they can't do' (IDI-02, paediatrician, private hospital, Johannesburg)

I wasn't aware (of the legislation) and the thing is—now that you ask me, I feel like we had conferences, educational conferences, paediatric ones, where there has been nutrition companies who have

given us information on different types of formula. (Paediatrician, public hospital, Johannesburg)

Obviously for the companies and them it's not so nice for them. So maybe they cannot be too strict on advertising and just allow some advertising'. (IDI-14, paediatric nurse, public hospital, Johannesburg)

Several health professionals stated that the legislation prevented them and mothers from receiving information about commercial milk formula. They see manufacturers as having an important role to play in educating about their products to both mothers and health professionals.

Really I think that's not a good thing because it was going to give us more knowledge, even for the mummies' (IDI-19, paediatric nurse, private retail pharmacy, Johannesburg)

They are not really allowed to anymore but I have a bit of a problem with that because how are people supposed to know, if you can't advertise (IDI-37, post-natal nurse, private baby clinic, Cape Town)

Only one health professional, a lactation consultant in a private hospital, believed that enforcement of the legislation should be strengthened and one family physician working in a township clinic in Cape Town stated that relaxing the legislation would have negative consequences for breastfeeding.

What I think could be worked into it is stronger repercussions for this regulation to be broken, because I think where it is broken we report it and then... it gets taken down, but there's no repercussion for it. So I feel like that might be changed. (IDI-39, lactation consultant, private hospital, Cape Town)

And I think if you change legislation and make it easily accessible and advertising, the incidence of exclusively breastfeeding for six months is going to just become worse and we don't need that in our lives. So despite regulations formula feeding is still happening and still flourishing.' (IDI-28, family physician, public clinic, Cape Town)

## DISCUSSION

This is the first study in SA to explore views and experiences of both public and private sector health professionals on commercial milk formula and their interactions with formula companies. The results reveal that commercial milk formula is being marketed through health professionals in SA, especially in the private sector. The study is extremely timely given the forthcoming implementation of NHI which will lead to greater interactions between the public and private sectors through a single purchaser arrangement for all health services.<sup>23</sup>

We found stark differences in the experiences of public and private sector health professionals in terms of contact with representatives of formula companies, practices such as commercial milk formula 'top-ups' in hospital and their



awareness of SA regulation R991. Health professionals in the private sector reported frequent contact with industry representatives with over two-thirds reporting exposure to companies in their workplaces to present products, provide training or sponsor educational activities. This exposure to commercial milk formula within health facilities undermines the ethical responsibility of health professionals to protect, promote and support breastfeeding.

Our study highlights the large effect of marketing on the views and perceptions of health professionals towards commercial milk formula. Participants held strong opinions regarding the equivalency of breastfeeding to commercial milk formula citing information from industry representatives and product packaging. It is extremely worrying that some health professionals saw their role to be promoting products on behalf of companies, a trend that has been described in other countries.<sup>28</sup> We also found that health professionals were very knowledgeable on so-called formulas for special medical purposes and these were valued as solutions to infant feeding challenges rather than provision of lactation support. The overdiagnosis of cow's milk protein allergy has been described in the UK with a 500% increase in prescriptions for specialist formula milks.<sup>29</sup> Moreover, a briefing document by Baby Milk Action, UK reports that there is limited evidence of efficacy for many of the products claiming to be formulas for special medical purposes. Many are more expensive than standard formulas and carry highly promotional, misleading and unsubstantiated claims that medicalise common feeding occurrences.<sup>30</sup> Addressing the use of packaging as a marketing tool should also be a priority as marketing messages were clearly reflected in the views of health professionals and therefore their choices in terms of their professional practice.

Health professionals in private hospitals were well aware of the procedures that were followed to select companies as suppliers for commercial milk formula, and this process involved frequent contact with industry representatives and the notion of being 'fair' in the selection process so that all brands could benefit. In the context of high visibility of formula companies in private hospitals we found a common practice of providing 'top-ups' of formula milk in the early postnatal period due to perceived breast milk insufficiency on the part of health professionals. Early introduction of commercial milk formula has several undesirable effects on newborns including negatively impacting maternal breast milk production, shortening the duration and exclusivity of breastfeeding and changing the gut microbiome.<sup>31</sup> Community-wide impacts also include normalising the introduction of commercial milk formula from an early age. A recent study exploring use of commercial milk formula prior to discharge after delivery in Phnom Penh and Kathmandu Valley found that recommendations from health professionals to mothers to feed formula were significantly related to formula use.<sup>32</sup> In our study this practice was almost exclusively described among health professionals in private health facilities, very few of which are accredited as being 'baby friendly',

which is referred to as the Mother Baby Friendly Initiative (MBFI) in SA. Commercial milk formula top-ups are not allowed according to the WHO 10 steps to successful breastfeeding,<sup>33</sup> which are required for a health facility to receive MBFI accreditation status. SA accredited 405/545 (74%) of public health facilities with MBFI status in the 2016/2017 financial year, while only six private facilities were accredited.<sup>34</sup> There is no information currently on measures being taken to monitor and enforce regulation R991 in private health facilities and it is concerning that these facilities are used as business opportunities related to the promotion of commercial milk formula brands. There is an urgent need to support the enforcement of the regulations and the implementation of the MBFI principles as a standard of care in both public and private hospitals and the monitoring thereof.

The lack of implementation of MBFI and monitoring and enforcement of the R991 regulations in the private sector has been shown to be a threat and is particularly concerning given the greater interaction that private health professionals will have with the current uninsured population of SA once the NHI is implemented. The population currently reliant on the public sector are of low socio-economic status where the health and survival protection from breastfeeding is critical and some of the uninsured population already pay out of pocket for private general practitioner visits.<sup>35</sup> Greater exposure of this population to practices such as early introduction of commercial milk formula and advice to use formula as a solution for common infant challenges would have disastrous consequences.

Despite almost a decade since legislation on 'The Code' was enacted in SA, awareness of these regulations among health professionals was low. Sensitising health professionals to this legislation is urgently needed in both pre-services and in-service settings so that they can become champions in enforcing the regulations rather than conduits for continuing violations. Health professional associations should also issue guidance on ethical practices in terms of sponsorship from commercial milk formula companies and declarations of interest where such relationships occur. There is increasing recognition of the need for declarations of competing interests by individuals working in the health sector.<sup>36</sup>

There is clearly an urgent need to improve the skills and training of health professionals in lactation support to improve their confidence in supporting breastfeeding, particularly those working in the private sector. Breastfeeding promotion has been shown to be a cost-effective and life-saving health intervention.<sup>37</sup> Our participants described their difficulty accessing information on infant feeding and relied on companies as a source of information. Commercial milk formula companies, especially in low and middle income countries, are aware of these gaps in health professional continuing education and offer their resources to become primary educators on infant feeding.<sup>38 39</sup> Given the blatant conflict of interests, this is entirely inappropriate and highlights the need for



sustained investment in health professional development without opportunity for any commercial benefits. A qualitative study among health professionals in Vietnam found that they opposed restrictions on formula industry sponsorship of continuing medical education because government support for ongoing education was inadequate.<sup>40</sup>

The findings from this research are in stark contrast to SAs very high score of 87 out of 100 in the 2020 status report on national implementation of the International Code.<sup>7</sup> Despite being substantially aligned with the Code in terms of the legal provisions in R991, there are important areas that remain without legal provisions (table 1) which this research shows are being actively pursued by industry. These include the lack of requirement that monitoring and enforcement should be independent, transparent and free from commercial influence, and hence the failure to date to enforce any sanctions for violations; the lack of requirement for health professionals to disclose industry funding to their institution; the lack of prohibition of professional endorsement in the labelling of follow-up formula and the lack of prohibition of donations of equipment or services to health services. Furthermore, this research has highlighted that the presence of legal provisions in a context of low knowledge of the regulations among health professionals and weak enforcement by government provides an enabling environment for violations to occur.

### Strengths and limitations

This is the first study in SA to explore the views of health professionals on commercial milk formula and its marketing. We included health professionals from both public and private sector health facilities and from several health disciplines including medical specialists, generalists, nurses and lactation consultants thus enabling a broad view of experiences to be documented. The qualitative approach enabled an in-depth understanding of health professional views regarding commercial milk formula marketing which can complement the quantitative indicators obtained from the periodic NetCode monitoring.

Due to the COVID-19 lockdown, nine of the interviews were conducted using telephone or voice over internet protocol. This may have limited the rapport between the interviewer and interviewee and impacted on the observation of non-verbal responses.

### Conclusions

This study demonstrates clearly that health professionals, particularly in the private sector, are exposed to and are used as conduits to promote the use of commercial milk formula among South African mothers. These health workers are failing the mothers who trust them to provide the best advice and this is an important factor contributing to unacceptably low rates of breastfeeding in SA, which needs to be urgently addressed.

The findings of this study should be used to catalyse policy responses, social movements, consumer and

professional association action to strengthen monitoring and enforcement of the Code regulations in order to protect breastfeeding and support the optimal health and well-being of the population.

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**Contributors** GK designed the study, TD, GK, CH, CJP-K, LH and SL participated in the analysis of the interviews, TD wrote the first draft of the manuscript which was then critically reviewed and revised by the other authors. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted. TD is the guarantor.

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**Patient consent for publication** Not applicable.

**Ethics approval** Ethics approvals were granted by the WHO ethics review committee (approval number ERC 003235) and by the Human Sciences Research Council ethics committee (approval number 3/24/07/19). Interviewees affirmed that they would abide by data security and confidentiality principles and procedures. All health professionals who were approached to participate in an interview were read an information sheet outlining the expectations in terms of length of the discussion, the voluntary nature of the participation and measures to ensure confidentiality. Health professionals who agreed to participate signed an informed consent form.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** To preserve the anonymity of the interviewees, the transcribed interviews are not available for sharing. The lead author (TD) affirms that the manuscript is an honest, accurate, and transparent account of the study being reported and that no important aspects of the study have been omitted.

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## COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
<b>Domain 1: Research team and reflexivity</b>			
			5
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	5
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	5
Occupation	3	What was their occupation at the time of the study?	5
Gender	4	Was the researcher male or female?	5
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	N/A
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	N/A
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	N/A
<b>Domain 2: Study design</b>			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	5
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	5
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	5
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	5
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	5
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Table 1, pg 15
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	5
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	N/A
Duration	21	What was the duration of the interviews or focus group?	5
Data saturation	22	Was data saturation discussed?	N/A
Transcripts returned	23	Were transcripts returned to participants for comment and/or	5
			5
			N/A

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
<b>Domain 3: analysis and findings</b>			6
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	6
Description of the coding tree	25	Did authors provide a description of the coding tree?	6
Derivation of themes	26	Were themes identified in advance or derived from the data?	N/A
Software	27	What software, if applicable, was used to manage the data?	N/A
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			6-12
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	12
Data and findings consistent	30	Was there consistency between the data presented and the findings?	6-12
Clarity of major themes	31	Were major themes clearly presented in the findings?	12-14
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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