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# Marketing of sugar-sweetened children's drinks and parents' misperceptions about benefits for young children

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## Abstract

Despite expert recommendations, US parents often serve sugar-sweetened children's drinks, including sweetened fruit-flavoured drinks and toddler milks, to young children. This qualitative research explored parents' understanding of common marketing tactics used to promote these drinks and whether they mislead parents to believe the drinks are healthy and/or necessary for children. We conducted nine focus groups in Washington, DC and Hartford, CT with parents of children (9–36 months) of diverse race/ethnicity and socioeconomic status ($N = 50$). Semistructured discussions elicited parents' responses to four concepts designed to correct common misperceptions about toddler milks and sweetened fruit-flavoured drinks (fruit drinks and flavoured waters) by providing information about drink ingredients and potentially misleading marketing tactics. Participants expressed widespread misperceptions about sweetened fruit-flavoured drinks and toddler milks, including perceived healthfulness and benefits for children and confusion between sweetened and unsweetened drink categories (sweetened fruit-flavoured drinks vs. juice, toddler milk vs. infant formula). They confirmed that common marketing strategies contributed to misperceptions, including front-of-package claims and marketing messages that imply benefits for children and/or hide problematic ingredients; cross-branding and product extensions from trusted brands; side-by-side shelf placement at retailers; lower price than healthier products; and targeted marketing to children and parents. Some parents expressed anger about deceptive marketing and supported increased regulation and consumer education campaigns. Findings support the need for policies to address potentially misleading marketing of sweetened fruit-flavoured drinks and toddler milks and revealed opportunities to reduce parents' provision of these drinks through countermarketing campaigns communicated via trusted sources.

**KEYWORDS**
child feeding, child growth, child nutrition, food policy, maternal public health, parenting

Work was conducted while Lindsay Phaneuf was a research assistant at the Rudd Center.

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## 1 | INTRODUCTION

Child health experts recommend that young children should not consume drinks with added sugars (Guidelines for Americans, 2020; Lott et al., 2019; Muth et al., 2019; Vos et al., 2017). However, 9% of US children ages 6–11.9 months, 27% of children ages 12–17.9 months (Roess et al., 2018), and nearly one-half of 2- to 4-year-olds consume sugar-sweetened drinks on a given day (Kay et al., 2018). Providing sugar-sweetened drinks during the transition from breastmilk and/or infant formula in particular reduces the acceptance of plain milk and water (Baker-Smith et al., 2019; Grimes et al., 2017; Kay et al., 2018; Pérez-Escamilla et al., 2017). Early introduction of sweetened drinks is also associated with a higher weight trajectory among infants, increasing the risk for obesity in childhood (Pan et al., 2014; Rybak et al., 2021).

Two categories of sugar-sweetened drinks present special concerns for older infants' (9–11.9 months) and toddlers' (12–36 months) nutrition and health: sweetened fruit-flavoured drinks and toddler milks. Sweetened fruit-flavoured drinks are defined as drinks that contain up to 52 g of added sugar per serving with little or no juice (10% or less) (Harris et al., 2019). Both fruit drinks and flavoured water are sweetened fruit-flavoured drinks and are marketed as appropriate for young children (Harris et al., 2019). Fruit drinks are the top source of added sugars in US toddlers' diets (Herrick et al., 2019) and the type of sugar-sweetened drink most commonly consumed by children under 5 years (Kay et al., 2018). Flavoured water products are labelled as 'water beverage' on packaging and tend to be lower in calories than fruit drinks, with added sugar and no juice. Most fruit drinks and flavoured waters marketed for children also contain nonnutritive sweeteners (NNS) (Harris et al., 2019), which experts do not recommend for children (Lott et al., 2019).

The other concerning category of sugar-sweetened children's drinks, toddler milks, are defined as drinks, typically in powder form and offered by infant formula manufacturers that are marketed for children (12–36 months) as the next step after infant formula (Harris et al., 2019; Pomeranz et al., 2018). These products typically consist of powdered milk, added sugar (corn syrup solids or other sweeteners), and vegetable oil with added nutrients. More than 40% of caregivers reported giving toddler milk to their 13- to 36-months-old child in the past month and 22% reported giving it to their 6- to 11-months-old child (Romo-Palafox & Harris, 2021). However, toddler milks are not recommended by health experts (World Health Organizatio [WHO], 2003; Lott et al., 2019; O'Connor, 2009). In addition to added sugar, compared with plain cow's milk, most toddler milks contain less protein and more sodium and cost up to four times as much (Lott et al., 2019).

Despite expert recommendations, manufacturers extensively market sweetened fruit-flavoured drinks (fruit drinks and flavoured waters) for children, using tactics such as front-of-package claims and images of fruit that imply healthfulness and benefits for children (Harris et al., 2019). One study found that most caregivers of young children believed children's sweetened fruit-flavoured drinks contain significantly more juice than they actually contain, and few realised that most contain NNS (Harris & Pomeranz, 2021). Manufacturers also position toddler milks as beneficial for good nutrition and child development (Duffy et al., 2021; Pomeranz et al., 2018). Survey research found that 60% of caregivers of children ages 12–36 months agreed toddler milks provide nutrition that their children do not get from other foods, and those who agreed with marketing claims were significantly more likely to provide toddler milks to their child (Romo-Palafox et al., 2020). US sales data reflect the success of marketing strategies. In 2018, sweetened fruit-flavoured children's drink sales totalled $1.4 billion, exceeding sales of unsweetened children's juices by 67% (Harris et al., 2019). Toddler milk sales increased 2.6 times from 2006 to 2008 to 2013–2015, at the same time ad spending increased fourfold (Choi et al., 2020).

Therefore, previous research has demonstrated that common misperceptions about the healthfulness of sweetened fruit-flavoured drinks and toddler milks may contribute to widespread provision of sugary drinks to young children. However, less is known about how parents perceive the marketing tactics manufactures utilise to implicitly convey healthfulness of drinks that are not recommended by experts. This qualitative study with parents of older infants (9–11 months) and toddlers (12–36 months) aimed to provide a better understanding of parents' perceptions of sweetened fruit-flavoured drinks and toddler milks, their knowledge about product ingredients, and how common marketing messages and other tactics may contribute to misperceptions. The objectives of this study were to explore (a) parents' perceptions of common marketing tactics used to promote sweetened fruit-flavoured drinks (including fruit drinks and flavoured waters) and toddler milks; (b) if and how such tactics mislead parents to believe these drinks are healthy and/or necessary for children; and (c) parents' responses to factual information about drink ingredients and package claims. This information will help inform effective public health initiatives to reduce young children's consumption of sugar-sweetened drinks.

### Key messages

- Marketing messages for sweetened fruit-flavoured drinks and toddler milks can mislead parents to believe these sugar-sweetened products are healthful options for young children.
- Parents described front-of-package label claims, images, and other marketing messages on sugar-sweetened children's drinks as confusing, deceptive, and misleading. They also raised issues about targeted marketing to children and parents and lower prices for less-healthy products.
- Findings support opportunities for countermarketing campaigns to correct misleading marketing messages and the need for government policies, such as restricting front-of-package claims and requiring consistent ingredient reporting, to assist parents in making healthier drink selections for their children.

## 2 | MATERIALS AND METHODS

Nine focus groups were conducted within low- to moderate-income neighbourhoods in Hartford, CT (five groups) and Washington, DC (four groups) ($N = 50$ participants). The target population was parents with children ages 9–36 months who make decisions about feeding their child. Focus groups occurred August to October 2019. The study was reviewed and determined to be exempt by the university's institutional review board (#X19-082).

### 2.1 | Concept sheets

One 'expert recommendation sheet' and four 'concept sheets' were designed to provide factual information about sweetened fruit-flavoured drinks and toddler milks and facilitate discussion about participants' knowledge, attitudes, and behaviours regarding serving these drinks to their child (see Supporting Information Material). The expert recommendation sheet utilised a green, yellow, and red stoplight to categorise drinks to encourage (plain milk and water), limit (100% juice) and not provide (sugary drinks) (Lott et al., 2019). Pictures of popular brands of toddler milks and sweetened fruit-flavoured drinks were provided as examples sugary drinks that are not recommended. Concept sheets further defined sweetened fruit-flavoured drinks and toddler milks. They were easy to read, printed in colour, contained six to eight messages each, and included pictures of actual product packages and other illustrations to convey the messages. The four concepts focused on either product ingredients or common claims and other marketing messages used to promote sweetened fruit-flavoured drinks and toddler milks (one for each focus and product). Messages were selected based on previous research demonstrating common consumer misunderstanding about sweetened fruit-flavoured drink and toddler milk marketing messages and ingredients in these products (Berry et al., 2010; Cattaneo et al., 2015; Harris & Pomeranz, 2021; Harris et al., 2019; Romo-Palafox et al., 2020). One additional concept was shown to inform the design of videos for a health campaign (results not presented here).

### 2.2 | Focus group recruitment

A convenience sample was utilised. Participants were recruited through Facebook posts intended to reach local parents of young children (e.g., parent Facebook groups) and flyers distributed through local organisations (e.g., library parent/child groups, childcare facilities, and healthcare practices). Interested parents contacted researchers via email or phone and completed a survey via online link or by phone. Survey items screened respondents to ensure study eligibility, which included being a parent of a child ages 9–36 months who lives in the participant's household, and who makes all or some of the decisions about feeding this child. Eligible respondents selected sessions for which they were available and indicated if they needed childcare. Depending on expressed preferences, participants received an email, text, or call to confirm scheduled session and a reminder. Eight of the nine groups consisted of 4–10 participants (Krueger, 2014); one group had three participants. Childcare was provided, if required. Participants received a $25 gift card and $5 for transportation costs as compensation.

### 2.3 | Study procedures

Each focus group lasted 75–90 min and was led by an experienced moderator assisted by a note-taker. Groups took place in a conference room at the downtown Hartford library or a centrally located office in downtown Washington, DC. Discussions were audio recorded.

Participants signed an informed consent form at the beginning of each group. The moderator utilised a semistructured discussion guide (Table 1). She first introduced herself and the note-taker and explained that discussions would be about the types of drinks participants give to their children (9–36 months) and how they make decisions about what drinks to provide. Following introductory warm-up questions, the moderator distributed a concept sheet, gave participants time to read it, and facilitated a discussion about the information presented. This process was repeated for each of the four concept sheets. The discussion included questions to elicit parents' overall thoughts on the concept sheets, how the information made them feel, and if the information was new and made them think differently about fruit-flavoured drinks and toddler milks. After reviewing all concept sheets, the moderator asked each participant to name one thing they heard/saw that they found most interesting, share if there was anything shocking, unexpected, or made them feel

**TABLE 1** Introductory questions and sample of moderator questions for concept sheets

| **Introductory questions** |
|---|
| • Can each of you please tell us your name, how many children you have and the age of each child?<br>• Who helps you decide what your baby or toddler drinks?<br>• Please share a question or challenge you have in providing drinks to your young child. |
| Sample of discussion questions about each concept |
| • What are your thoughts about this?<br>• How does this make you feel?<br>• Is this information new to you?<br>• Does it make you think differently about these drinks? |
| Sample of discussion questions to summarise concepts |
| • Out of all of the messages we talked about today, what stood out to you?<br>• What was shocking or unexpected?<br>• What made you feel differently about these drinks?<br>• What would be something other parents would want to know? |

differently towards these drinks, and name something other parents would want to know about toddler milks and fruit drinks. In closing, the moderator asked participants if there was anything else they would like to share. To encourage discussion about behaviours that could be viewed negatively we did not ask parents if they provided these drinks to their child.

## 2.4 | Analysis

Focus group recordings were transcribed verbatim by a professional transcription service. Researchers edited the transcripts for accuracy and imported them into NVivo (version 12). Thematic analysis was utilised by two researchers to identify and define key themes present in the data (Braun & Clarke, 2006). First, both researchers reviewed all transcripts independently and recorded possible themes using an inductive approach. As the concept sheets discussed claims and ingredients, researchers looked for themes related to these topics as well as other themes that emerged from the data. After, researchers met to reduce and refine themes. Then, they established coding definitions for each theme and subsequently utilised a subset of transcripts to read and code independently. This process occurred three times, until agreement on coding definitions was reached. Themes were defined in a coding manual and assigned to nodes in NVivo. Two trained coders (neither of whom participated in data collection) coded one focus group transcript. Following recommendations for focus group thematic analysis (Creswell, 2014), inter-coder reliability was achieved based on at least 80% agreement for all codes/nodes. When agreement was less than 80% coding discrepancies were discussed with the researchers and coders and resolved through consensus and by refining and merging codes.

# 3 | RESULTS

Information saturation (i.e., responses to the concept sheets were a repeat of what had been heard in one or more of the prior groups) was reached at nine focus groups. The majority of participants (47 of 50) were mothers; three fathers also participated. All participants reported having one to three children between the ages of 4 months and 9 years, with an average of two children.

## 3.1 | Key themes

Analyses identified five major themes (Table 2). One of the themes was addressed directly in the concept sheets: (1) Marketing messages (including claims) lead to misperceptions about product healthfulness and benefits for children and/or hide problematic ingredients. Participants independently raised four additional themes during the discussion: (2) Confusion between product categories (sweetened fruit-flavoured drinks vs. 100% juice, toddler milks vs. infant formula); (3) Cross-branding and product extensions contribute to the confusion; (4) Lower price of sweetened drinks encourages purchases; and (5) Targeted marketing to parents and children is effective. Our coding included the examples of parents discussing their own

**TABLE 2** Key themes: Misperceptions about marketing of sweetened fruit-flavoured drinks and toddler milks

| Themes | Fruit-flavoured drink examples | Toddler milk examples |
|---|---|---|
| Marketing messages that imply benefits for children and/or hide problematic ingredients | • Used to select child's drinks<br>• Misleading front-of-package claims/terms (vitamin C, 100%, natural, water, less sugar)<br>• Unable to identify sugar and NNS on ingredient lists<br>• Implied fruit content (fruit images, claims) | • Address anxiety about their child's nutrition/ growth<br>• Better than milk (implied)<br>• Helps with transition from formula to milk (implied)<br>• Identify new needs for their child that toddler milk resolves |
| Confusion between product categories | • Unsure of differences between fruit-flavoured drinks and 100% juice<br>• References to sugary drinks as 'juice' | • Unsure of difference between toddler milk and infant formula<br>• References to toddler milks as 'toddler formula' |
| Cross-branding and product extensions | • Fruit-flavoured drinks and 100% juice offered by same brands with similar packages, often placed side-by-side in the store<br>• Creates perceptions that fruit-flavoured drinks are 'healthy'<br>• Limited time to differentiate juice from fruit-flavoured drinks when shopping or to examine ingredient lists | • Toddler milks and infant formula offered by the same brands with similar packages, often placed side-by-side in the store<br>• Trust in infant formula brands transfers to toddler milks<br>• Conveyed as the 'next step' after formula feeding |
| Pricing | • Cheaper than 100% juice | • Cheaper than infant formula |
| Targeted marketing to children and/ or parents | • Implies that products are good for children<br>• Attracts children's attention | • Free samples and coupons arrive at the perfect time<br>• Implied endorsement by paediatricians |

experiences, beliefs, and attitudes, as well as discussions about 'parents' in general. Despite not asking parents if they served these drinks, some participants volunteered that information. Table 3 provides illustrative quotes for each of the key themes.

## 3.2 | Marketing messages

Participants discussed how front-of-package claims on sweetened fruit-flavoured drinks (e.g., 100% Vitamin C) 'can fool even the most-educated, well-intentioned parent'. Some mentioned that claims can hide sugar content. In discussions of a '40% less sugar' claim, one parent said that a product with that claim is something she would 'more likely pull' off the shelf. Another said that it makes parents think 'it's not that bad.' In addition, nearly all parents said they were 'surprised' and 'did not realise' that children's drinks contain NNS in addition to added sugar. Parents described this information as 'disturbing' and 'horrifying'. One added that it, 'would be nice if that were more prominent on the packaging'.

Parents also talked about how product names and images on packages make it appear as if the product contains 'real fruit' or juice and/or provides a healthy choice for children. One participant said that having pictures of fruit on sweetened fruit-flavoured drinks is 'kind of deceptive' because it makes a person think 'this must have fruit in it'. Another said the name of the product was 'false advertising' and mentioned a popular sweetened flavoured water brand, 'The Roaring Waters, you would think it would be like a seltzer or flavoured water'. Another parent added, 'It's the way it's marketed on the front. And I'd like to think I can see through it, but maybe always, you know, I can't'.

Some parents expressed that looking at the ingredient list did not provide the information they needed to make good decisions. Most said they do not know the chemical names of NNS (e.g., sucralose, acesulfame potassium). When looking at one product's ingredient list a parent said, 'I'm not a dietitian. I have no idea what all of these things mean'.

When discussing toddler milk marketing, participants commented on how it increases parents' anxiety about their child's nutrition and promotes toddler milks as the solution. One described the marketing as 'doing a really good job of playing to a mother's fears'. A number of participants raised picky eating by their toddler as causing 'panic' and that the claims on toddler milk packages 'prey' on people who are trying to feed their child table food but 'feel like they're not making that happen'.

Parents who provided toddler milks discussed the specific claims presented in the concept (i.e., docosahexaenoic acid [DHA], brain, and eye development) as appealing, and they considered the product to be 'necessary' to 'transition from formula to whole milk'. One mentioned that DHA was something in her pre-natal vitamins so when she saw the DHA claim she thought, 'Oh DHA, that's got to be the good stuff'. Another said it was promoted as better than cow's milk.

## 3.3 | Confusion between product categories

Participants often referred to sweetened fruit-flavoured drinks as 'juice' in discussions, including when discussing the pictures of sweetened fruit-flavoured drinks on the concept sheets. One parent said that the term 'juice' on drinks that are not 100% juice may 'cause mistakes'. Another asked, 'Is it even regulated?' and added, 'I know you can't call it juice if there's no juice. But how much juice you need? I don't know'.

Similarly, parents referred to toddler milks as 'toddler formulas' or used the brand name followed by formula (e.g., 'Enfagrow formula'), although the term 'toddler milks' was used on the concept sheets. Parents were unsure of the difference between infant formula and toddler milks. One participant said she was 'led to believe toddler formulas were the equivalent of infant formula'. As discussions progressed, parents realised that toddler milks were not formula, and some described the labelling as 'misleading' because the product appears to be very similar to infant formula.

## 3.4 | Cross-branding/product extensions

One participant pointed out how one 'popular' fruit-flavoured drink brand, that has similarly packaged products in multiple children's drink categories including 100% fruit juice, is viewed as 'the next step up from 100% juice'. Another said that products are advertised as 'juice boxes' so 'you think you're just giving them juice'.

In discussions about toddler milks, parents expressed that similar packaging and product extensions by infant formula brands not only contribute to category confusion but foster trust in these brands' toddler milk products. They described how toddler milk packages 'look just like formula canisters' for brands that 'parents trust already'. Parents described that the connection to an infant formula brand also conveys toddler milks as the 'natural' or 'necessary next step', especially for parents feeding infant formula. Some suggested that perceived similarity to infant formula together with brand trust influence parents' decisions to purchase.

Participants also explained that their grocery shopping occurs under time constraints so, when shopping for drinks for their children, they make 'quick decisions' and 'often with divided attention'. They added that they are 'only looking at the quick front' and do not have the time to 'research every ingredient' or carefully read labels, which may prevent them from purchasing healthier products or cause them to inadvertently purchase a less healthy one. One parent described purchasing a fruit-flavoured drink and then realising it was not 100% juice after she got home. She added, 'I think just sometimes when you see the labels, especially, I think, when you're in a rush… I'm like, OK, juice, and I grab it'.

Similarly, one parent explained that having toddler milks and infant formula beside each other on grocery store shelves is a way to 'make sure everyone does this', referring to purchasing toddler milk. Another described a display of infant formula and toddler milks in a grocery store and added, 'And I didn't think of it [toddler milk] as something negative then'.

**TABLE 3** Illustrative quotes for key themes

| Themes | Fruit-flavoured drink quotes | Toddler milk quotes |
|---|---|---|
| Marketing messages that imply benefits for children and/or hide problematic ingredients | ...40% less sugar, that would be something that I would be more likely to pull off the shelf if I was looking for that type of food or drink. (DC) | I feel like the marketing does a really good job of playing to like a mother's fears. Because who wants to feel like, I didn't give my child the thing to support their immune system? Or they're not going to have brain or eye development if I don't give them this. (Hartford) |
| | When you look, and you see pictures of kiwi and strawberry on something, you could think that it's made of kiwi and strawberry. (DC) | ...it feels like as a mom, there's a lot of judgments, or there's a lot of things that you feel like you're doing wrong. And so these marketing, whether it's necessary or not, it definitely plays to that fear. (Hartford) |
| | But even the Capri Sun says they advertise it as Roaring Waters. So it's the false advertisement of saying this is a water, so it's good for you...The Roaring Waters, you would think it would be like a seltzer or flavored water. (Hartford) | DHA [Docosahexaenoic acid] for the brain, that was one of the reasons why I wanted to try to give them the Enfagrow, to keep getting those. (Hartford) |
| | Because marketing-- they do a good job marketing. Marketing people know how to market-- all natural, oh, 100% of vitamin C, oh that's cool. Yeah, but also 100% of your sugar for the day. It didn't mention that on the front. (Hartford) | Because I got sent a little pamphlet of the Enfagrow. And then it listed like the milk, and then it listed the Enfagrow, and then it showed what the milk had and what the Enfagrow had. ...so that kind of made me want to try it. (Hartford) |
| | So it's really concerning to me that you'd be adding all of those [non-nutritive sweeteners] to children's drinks, especially children's drinks that are not marketed as diet drinks. (DC) | I think they [toddler milks] are formula, or [a] transition from formula to whole milk. (Hartford) |
| | I guess I didn't realize that there's both the sugar and the zero-calorie sweeteners together in some of the juice drinks that children are offered. (Hartford) | I just think the marketing of these-- it makes it seem like it's actually really good for your kids, especially for picky eaters. (Hartford) |
| | ...they have the sugar plus the alternative sugars, which you don't realize in addition to. So it would be nice if that were more, like, prominent on the packaging. (DC) | ...the Go & Grow. I never thought of that as a sugary drink. (DC) |
| | ...they're leading you to think something without explicitly saying it. So like you see fruit. And you're like, oh, this must have fruit in it. This is healthier, and it's not. (DC) | |
| | It's the way it's marketed on the front. And I'd like to think that I can see through that, but maybe always, you know, I can't. (DC) | |
| | I'm not a dietitian. I have no idea what all of these things mean. (DC) | |
| Confusion between product categories | Yeah, that's why I don't want to give them no juice. Because I know that most juices have sugar in it. (referring to pictures of fruit drinks). (Hartford) | So because my son is almost one year, one year old. So I gave him the first Enfagrow formula as a transition. (Hartford) |
| | And so having a tricky thing like “juice” on a box that's not actually fruit juice, that can be misleading and cause mistakes. (DC) | I was certainly led to believe that toddler formulas were the equivalent of infant formula. (DC) |
| | Is it even regulated? I don't know. I don't know. I know you can't call it juice if there's no juice. But how much juice you need? I don't know, which is-- because these, I'm sure, would all be called juice if they could be called juice. (DC) | I think it's very misleading labeling. The fact that, I thought that, other than the name change from infant to toddler, it was the same product maybe with slightly different ratios of vitamins for what a toddler needs versus what an infant needs. And that's not the case. (DC) |

**TABLE 3** (Continued)

| Themes | Fruit-flavoured drink quotes | Toddler milk quotes |
|---|---|---|
| Cross-branding and product extensions | I don't know what it is, but a lot of people think Capri Sun is like the next step from 100% juice from kids. It's so popular. (DC)<br>Yeah, I think, for whatever reason, Capri Sun has managed to kind of slip through the cracks a little bit, and is believed to be a little bit healthier than it probably is. (DC)<br>They advertise this as a-- it's a juice box, right? And so you think you're just giving them juice. (Hartford)<br>I mean, I've bought stuff in the grocery store, and then got home and been like, oh, it's not 100% juice, and then had to return it. So I think just sometimes when you see the labels, especially, I think, when you're in a rush… I'm like, OK, juice, and I grab it. (DC)<br>Especially when you're shopping with children, it takes so long to go shopping anyway. So you're really only looking at the quick front. You don't have time to flip it over on the back, because you've got this one screaming for this, you've got this one reaching out for this, this one knocking over things. Or you know nap time is coming, and you're trying to rush. (Hartford) | But I know that a lot of the formula companies have started making toddler formulas that they advertise, as like, oh, this is the next step when your kid doesn't need formula anymore-- as a toddler, keep giving them this. (Hartford)<br>They look just like the formula canisters. (Hartford)<br>I trust the formula companies so much. Blindly trust. (Hartford)<br>That's why they keep it right next to the toddler, I mean, the baby's things so that, you know, they want to make sure everyone does this. (Hartford)<br>….you're in the grocery store, and you think, well, you know, like they're only eating crackers this week… So here's something that looks good. And it's from a trusted company. (DC) |
| Pricing | I really try to buy the 100% juices. But sometimes you just have to go with what's on sale, and that could be the juice boxes at $1.50 a box versus the 100% at $3.50. It really makes a difference sometimes. So even though you try your hardest, you end up buying sugary drinks at times. (Hartford)<br>…you're going to a place like a Walmart, these [fruit drinks] are always on sale…Are parents making the decision based on what's healthier, or what can actually afford? (DC) | I don't know if some people switched the infant over to the toddler based on price. Because you're like, "it's Enfamil," "it's Similac." But there is a price difference. I think it was like $30 for a similar size of the infant [formula]. And I want to say this [toddler milk] was like $22. If you're on a budget-- I don't know if parents are switching to this earlier and you're thinking, "oh, it's the same company." And I don't think that's a coincidence. I think, probably, from a marketing standpoint, there's probably a strategy there. (DC)<br>I think that Enfamil is very cognizant of that, that they know infant formula is cheaper-- or, excuse me, very expensive. So to make the next step [toddler milks] a little bit cheaper probably plays into the consumer psychology, I'm guessing. (DC) |
| Targeted marketing to children and/or parents | …it looks cool to kids. … a bottle of water is clear. And then you see Hi-C, and it's all bright, so they want it. (Hartford)So when you walk into Stop and Shop they have those little a circle cylinders of like stuff in them, and that's what your kid walks up to. (Hartford)<br>They're [children] attracted to these things, because they're flashy colors and all this other stuff. And you also are thinking, oh, it's 100% vitamin C, so whatever. She'll be fine. (Hartford)<br>[On YouTube] the ads that are geared towards them [children] are, like, toys and food. And the food is always, like, some crazy juice, or something that is not milk and water. (DC) | They started doing marketing to me directly via email and mail. And when they knew my son was getting close to 12 months, they started sending me the toddler formula stuff. (DC)<br>I get stuff in the mail and my email all the time for Enfagrow-- coupons, advertisements, whatever. Because they are sending me all the Enfamil coupons. And then once we got closer to a year, they start sending me all the Enfagrow. (Hartford)<br>My pediatrician's office had coupons and samples of some of these (toddler milks). (DC)<br>We did use the Enfagrow Toddler Next Step. They always had coupons at my doctor's office. (DC) |

### 3.5 | Pricing

Participants indicated that 100% fruit juice was expensive when compared with sweetened fruit-flavoured drinks and that parents may have to decide what they 'can actually afford' versus 'what's healthier?. One parent remembered that toddler milk products from Enfagrow and Similac were less expensive than the same brands' infant formula. She added that parents 'on a budget' may be 'switching to this [toddler milk] earlier' because it is from the 'same company' and lower in price. Another parent said that pricing toddler milks slightly lower than infant formula 'plays into the consumer psychology'.

### 3.6 | Targeted marketing

Parents agreed that sweetened fruit-flavoured drinks are marketed to young children via characters and bright colours and to parents via nutrition-related claims. One discussed how the combination of 'flashy colours' attracted her child, while the package claim made her think, 'Oh, it's 100% vitamin C, so whatever. She'll be fine'. Another said that if kids are watching 'YouTube or anything like that' the 'ads geared toward them are like, toys and food. And the food is always, like, some crazy juice, or something that is not milk and water'.

Participants described receiving toddler milk marketing 'in the mail and my email all the time'. Many added that formula companies calculate the age of children based on when parents sign up for infant formula coupons and begin sending toddler milk coupons and samples when their children are 'closer to a year'. Others described getting samples and coupons at their paediatricians' offices.

### 3.7 | Opportunities to correct misperceptions due to common marketing practices

Most parents' attitudes toward these products and acceptance of how they are marketed changed over the course of focus group discussions. Concept discussions revealed countermarketing as a possible strategy to better inform caregivers about sweetened fruit-flavoured drinks and toddler milks. Discussion also indicated support for increasing transparency in ingredients and regulating potentially misleading marketing practices.

After reading the concepts, participants sometimes expressed anger about marketing tactics used to promote toddler milks and questioned companies' motives. One parent summed the discussion of package claims on toddler milks by saying, 'I think I would go stronger than saying it's just marketing hype'. She added, 'I think we're all in agreement, this is deliberately misleading'. Many also were shocked that toddler milk package claims are not regulated. One father said, 'I would think that this would be super regulated by FDA. And so they wouldn't be able to make false claims about what they do'. Other parents said they thought there would be a 'little more regulation than grown-up food' or more 'stringent requirements'.

Similarly, some participants were angered by the labelling practices of fruit-flavoured drink companies. One parent said she viewed fruit-flavoured drink labelling as 'very deceptive' because 'they're minimising the sugar content' and 'trying to kind of emphasise, oh, this is healthy' so 'a parent would be like, oh, well, it's a juice blend. It's not as bad for you as soda. But it really is'. They also commented on the lack of transparency about ingredients on product labels and front-of-package claims. One parent described it as 'pretty horrifying' that parents would think they are giving their child juice, but when you look at the ingredients it is 'pretty terrible'.

Participants concluded that the 'best interests of the child' are not considered in the marketing of these drinks. One said she felt angry when companies are 'making it [toddler milk] sound healthy with all of these like non-medically vetted claims'. Another parent said, 'Shame on them [toddler milk companies] for marketing like it is a better option [than food] for your child'. Parents also said they found the marketing 'upsetting'. One parent added, 'Nothing can replace eating real food. And I think it's terribly wrong for [toddler milk] companies to market that to people'. Similarly, parents expressed negative attitudes towards fruit-flavoured drink marketing because 'kids are being marketed things that aren't good for them… like sugary cereals and these sugary drinks'. One said, 'It kind of angers me, because we're not thinking about the health of our young ones'.

Participants also mentioned healthcare providers as potential trusted sources for accurate information about sweetened fruit-flavoured drinks and toddler milks. One parent said that she 'asks her paediatrician or the dentist for suggestions' when buying food items for her child. Parents indicated that their paediatrician helps them decide how to feed their child and that they would like to hear more information about these products from their paediatrician. One added, 'I think messaging from your paediatrician, at your child's 12-month appointment would be valuable, because I relied a lot as a first-time parent on my paediatrician.' Another said that a paediatrician's advice 'saved me from many a Google rabbit hole' while looking for information about how to feed her child. In discussing advice from paediatricians and dentists one parent said, 'I try to take note of the expert advice when it comes my way.'

However, a few parents indicated that their paediatrician recommended toddler milks. One parent said it was to 'beef up' her daughter's weight. Another cited her paediatrician as saying, 'Enfagrow Toddler Next Step was something that was good to have just, like, one a day.' She added that, 'We were doing that just as a supplement, although she's in the high-- I mean, she's healthy, and she's in the 90th percentile for height.'

## 4 | DISCUSSION

These findings confirm that marketing for sweetened fruit-flavoured drinks and toddler milks can mislead parents to believe these products are healthful options for young children and contribute to their provision against expert recommendations. Furthermore, in each session many parents' attitudes towards these products changed

over the course of the discussions. Therefore, findings also demonstrate that providing factual information about product ingredients and the meaning of potentially misleading marketing messages, as conveyed in the concept sheets presented in the groups, can be an effective approach to correcting common misperceptions and gaining support for policies and regulations to increase ingredient transparency and address marketing of sweetened children's drinks.

Our findings add to existing evidence that common nutrition-related claims and fruit images on fruit-flavoured drink packages contribute to these misperceptions. One study analysed over 2000 fruit drinks and found that one-half had the word 'juice' or 'nectar' on the front-of-package (Duffy et al., 2021). Sweetened fruit-flavoured drinks also often use a fruit in the product name and show pictures of fruit on the packaging, even when the product contains no juice (Harris et al., 2019; Pomeranz & Harris, 2020). Moreover, even though parents want to 'see through' the marketing messages and claims for these products, participants admitted that the marketing influences their purchase decisions. For sweetened fruit-flavoured drinks, they discussed how healthy sounding claims influence their decisions to purchase, sometimes against their initial judgement or in response to their child's request. These findings are similar to research describing how parents select snack foods for their children (Abrams et al., 2015).

Fewer studies have examined the impact of marketing messages on parents' misperceptions about toddler milks. One study conducted in Italy found that parents thought ads promoting toddler milks were promoting infant formula (Cattaneo et al., 2015). A small Australian study ($N = 15$) had similar findings and also found that parents used the term 'formula' when referring to toddler milks and uncritically accepted toddler milk marketing claims, especially those using scientific or technical language (Berry et al., 2010). In this study, participants expressed similar misperceptions and common claims using technical language (e.g., DHA) appeared to be especially effective.

Participants in our focus groups also demonstrated considerable confusion about the difference between sugar-sweetened fruit-flavoured drinks and unsweetened juices, as well as between infant formula and toddler milk, which have been shown in previous research (Berry et al., 2010; Cattaneo et al., 2015; Harris & Pomeranz, 2021; Munsell et al., 2016; Romo-Palafox et al., 2019). They frequently referred to sweetened fruit-flavoured drinks as juice and toddler milks as formula. They also indicated that front-of-package claims and their own lack of knowledge about product ingredients, such as NNS and percent juice, contribute to confusion about sweetened fruit-flavoured drinks and suggested they would like to see NNS and added sugar declarations prominently displayed on drink packages. Similarly, we found widespread misperceptions that toddler milks are similar to infant formulas, which may be due to the lack of a uniform term (i.e., statement of identity) for these products. Manufacturers use a number of different terms on packaging, including 'toddler formula', 'milk drink', and 'toddler drink' (Pomeranz & Harris, 2019; Pomeranz et al., 2018). Previous research has shown that parents may confuse toddler milks with infant formula and inappropriately provide them to infants under 12 months (Romo-Palafox et al., 2020).

During discussions participants often raised issues about common marketing practices that contribute to misperceptions and confusion that have also been identified in previous research. For example, fruit-flavoured drink and toddler milk brands also often offer products in healthier product categories and use similar-looking packaging for all products, such as colours, logos, and graphics (Harris et al., 2019; Pereira et al., 2016; Pomeranz et al., 2018). Findings suggest this practice as a reason they mistook sweetened fruit-flavoured drinks for 100% fruit juice and believed that toddler milks were the 'natural next step' after infant formula feeding. It appears that cross-branding of sugar-sweetened drinks from a trusted brand of juice or infant formula led parents to infer positive attributes for sweetened fruit-flavoured drinks and toddler milks offered by the same brands, as posited by marketing theory (Keller, 2003).

Parents also discussed the higher price of 100% juice relative to sweetened fruit-flavoured drinks as a reason why parents may choose sweetened fruit-flavoured drinks for their child. This issue appears to be growing as the disparity in cost between sweetened fruit-flavoured drinks and 100% juice has increased over time in the United States (Choi et al., 2021). Similarly, participants discussed the lower price of toddler milks compared with infant formula and how it could lead parents to 'switch earlier' from infant formula to toddler milk, not understanding that it does not meet the nutritional needs of infants. Unlike toddler milk, infant formula is highly regulated and made specifically for infants' nutritional needs (U.S. Food and Drug Administration [FDA], 1988).

Moreover, the effectiveness of potentially misleading marketing practices may be increased due to time constraints that parents face. Participants described their grocery shopping as 'rushed', giving them little time to differentiate among children's products at the time of purchase or to investigate ingredients in children's drinks. Previous research has shown that parents of young children in particular rely on front-of-package claims to make quick purchasing decisions due to distractions or other constraints while food shopping (Calderon et al., 2017; Castro et al., 2017). Furthermore, parents in lower-income households face even greater time pressures when grocery shopping (Devine et al., 2006), and shopping under time pressure is associated with less-healthy purchases (Blitstein et al., 2020). However, some participants mentioned that even their efforts to investigate product ingredients more closely might not be successful because they do not know the names of added sugars and NNS used in ingredient lists.

### 4.1 | Opportunities for countermarketing campaigns

These findings suggest opportunities to use countermarketing to reduce parents' provision of sweetened fruit-flavoured drinks and toddler milks. During the discussions, many parents expressed new understanding that marketing creates a misperception about healthfulness, and they began to question the motives of companies who sell nonrecommended products for children. This information

angered some parents and suggests potentially effective countermarketing messages. Highlighting industry's manipulation of consumers and efforts to target specific demographics with unhealthy products are common elements in food and beverage countermarketing campaigns (Palmedo et al., 2017). Many participants also expressed surprise that claims about these drinks are not regulated and about the lack of transparency in product ingredients. Therefore, countermarketing campaigns could also increase support for policy changes to address potentially misleading marketing practices.

In addition, these results suggest that current sugary drink reduction campaigns should inform consumers that sweetened fruit-flavoured drinks and toddler milks are also sugary drinks, as many parents did not realise that these products were sugary drinks. Campaigns to help them identify added sugar and NNS would also be beneficial, including the numerous types of added sugar contained in ingredient lists, chemical names for NNS in drinks, and expert recommendations against serving NNS to young children.

Given the trust that many parents expressed in paediatricians and dentists for advice on feeding their children, child health practitioners could help reach parents with countermarketing messages. However, some parents indicated that their paediatrician suggested they provide toddler milks, despite recommendations by professional child health organisations against serving them (Lott et al., 2019). Therefore, education campaigns to better inform health providers may also be required.

## 4.2 | Opportunities for public health policy

These findings also support the need for regulations to address consumer confusion and potentially misleading marketing of sweetened fruit-flavoured drinks and toddler milks. The US Food and Drug Administration (FDA) could require consistent reporting of added sugar and NNS on the front-of-package for both sweetened drinks and unsweetened juices, and the US Congress could allow the FDA to require a percent juice declaration on front-of-packages (Harris & Pomeranz, 2021; Pomeranz & Harris, 2020). Both Canada and Mexico require a front-of-package statement indicating that products contain NNS (Sylvetsky & Dietz, 2014; United States Department of Agriculture Foreign Agricultural Service, 2020). The FDA could also regulate sugar content claims and potentially deceptive terms (e.g., 'water') and require that statements of identity (i.e., the common name or term required to be placed prominently on the package front) accurately describe sweetened fruit-flavoured drinks and juices (Pomeranz & Harris, 2020).

The FDA should also establish a statement of identity for toddler milks and require that front-of-packages state the appropriate age for consumption and that the product is not a substitute for infant formula (Pomeranz et al., 2018). The FDA could also propose stricter requirements for substantiation of common claims on toddler milks and consider regulating toddler milk packaging and ingredients on par with infant formula (Pomeranz & Harris, 2019). The US Federal Trade Commission (FTC) and state attorneys general could bring enforcement actions against unfair and deceptive toddler milk marketing and labelling practices. The United States should also prohibit front-of-package claims and direct-to-consumer marketing of breast-milk substitutes, including toddler milks, as required by the International Code of Marketing of Breast-milk Substitutes (WHO, 1981). However, the mechanism to do so within the bounds of the First Amendment's protection for commercial speech needs additional research.

Furthermore, state and local regulations could require that retailers clearly identify children's drinks with added sweeteners (e.g., with shelf tags) and/or place sweetened children's fruit-flavoured drinks and unsweetened juices, as well as toddler milks and infant formulas, in separate locations to reduce potential consumer confusion (Harris & Graff, 2011). Research to measure the effects of regulations on consumers' understanding of drink ingredients and purchases of unhealthy children's drinks would help support all policy initiatives.

## 4.3 | Limitations

As with all research there are limitations to acknowledge. These findings are not generalisable to all populations as the study was conducted in two cities with a small convenience sample. In some comments participants shared what was clearly their own personal experience and attitudes, whereas in other comments participants used the term 'parents' more generally in their responses. Furthermore, we did not collect detailed demographic information from participants or assess participants' provision of toddler milks and fruit-flavoured drinks to their children. Not asking about drink provision allowed for more open discussion about behaviours that may be viewed as negative, and some parents voluntarily shared that they served these products. More research is needed to assess potential differences in responses to marketing tactics by parents' age, race/ethnicity, education level, and other demographic characteristics. Such differences are especially important to understand to create effective educational or countermarketing campaigns to reach specific populations. In addition, focus group participation discussions may cause participants to provide answers in a similar way or in ways that would be different if data collection took place with interviews or surveys. Furthermore, we utilised specific branded product images on our concept sheets and findings might not be generalisable to all brands. However, the images chosen were likely familiar brands as they all ranked high in US sales and advertising spending (Harris et al., 2016, 2019).

## 4.4 | Public health implications

These focus groups confirm that common marketing practices can mislead parents to believe that sweetened fruit-flavoured drinks and toddler milks are healthy options for children and help explain why parents commonly provide them despite expert recommendations. Public health initiatives, including consumer education campaigns and

additional regulations, are needed to address confusion about ingredients in different products and misperceptions of benefits for young children. Findings also revealed opportunities for countermarketing campaigns communicated via trusted sources to reduce parents' provision of these drinks and increase support for greater regulation of front-of-package claims and other problematic marketing tactics.

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## CONFLICT OF INTERESTS

The authors declare no conflict of interests.

## AUTHOR CONTRIBUTIONS

Drs. F.F.M. and J.L.H. contributed to the conception, design, data collection, analyses and writing of the manuscript. Dr. F.F.M wrote the manuscript and Dr. J.L.H. provided critical feedback for revisions. Ms. L.P. made a substantial contribution to the data management and analyses. All authors read and approved the final version manuscript.

## DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

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## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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