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Understanding the use of whole milk and flavored powders in children of low-income, immigrant Latina mothers: A descriptive study

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Introduction

Pediatric providers frequently counsel families on their child's milk intake. Milk, which is consumed by nearly all children in the United States, can be an important source of nutrients (e.g. vitamin D).^{1,2} Milk can also be a major source of saturated fat and can contribute to obesity and iron deficiency when consumed in excess.³ Milk consumption among Latino children differs from that of non-Hispanic white children. Specifically, Latino children more commonly drink whole milk compared to non-Latino white children.⁴ This difference in consumption highlights the need to evaluate whether there are other patterns of milk intake that are unique to this population.

Anecdotal reports from physicians caring for Latino children from low-income immigrant families identify the common consumption of two specific milk-related products: Nido[®] whole milk powder (WMP) and Nesquik[®] sweetened flavored milk powder (SFMP). Nido is a vitamin-fortified WMP marketed toward low-income consumers in developing economies.⁵ Nesquik is the preferred brand of flavored milk among US adults⁶ and the instant powder is added to milk as a sweetener. Excess use of either powder may contribute to excess fat and/or sugar intake among young Latino children, increasing their risk for obesity and dental caries. Understanding the use of these products and related parental beliefs could help pediatric clinicians provide effective, culturally tailored nutrition counseling to low-income immigrant families.

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Methods

In this cross-sectional mixed-methods study, a trained, bilingual/bicultural research assistant (RA) from August-November, 2011 recruited a convenience sample of Latino parents in the waiting room of an urban, academic general pediatric clinic that served predominantly low-income families. Eligibility criteria included 1) being a parent/guardian (18 years-old) to a 1-6 year old child, 2) self-identifying as Latino, and 3) being proficient in English and/or Spanish. Parents of children with medical problems affecting milk consumption were excluded. The RA orally administered a survey after obtaining informed consent from participants. Study methods were approved by the Johns Hopkins Institutional Review Board.

Measures

Data were collected on participant age, highest level of education, number of children, country of origin, acculturation, and years in the US. Acculturation was measured using the Short Acculturation Scale for Hispanics⁷ with higher scores (range 1-5) indicating higher acculturation levels. Sixteen open and close-ended questions developed for this study collected data on maternal use and beliefs regarding these brands of fortified whole milk powder and sweetened flavored milk powder. Questions focused on quantifying use and identifying related beliefs. Back-translation methods were used to ensure conceptual and cultural equivalence of survey items across languages.

Analyses

Of the 76 participants only 1 was male. This participant was excluded from our analyses. Demographic data and closed-ended items were analyzed using basic descriptive statistics. Differences in groups were analyzed using Chi-squared tests. Responses to open-ended questions were transcribed and translated into English and analyzed using a thematic analytic approach. We identified recurrent themes across responses for each question to develop a codebook and then coded the responses. Subsequently, team members discussed the results and identified major themes. Only themes with > 10% prevalence across responses are presented.

Results

Table 1 shows participant characteristics. All participants were immigrant women. On average, participants were 28.7 (SD = 5.6) years old and had 2.5 children (SD=1.3). Nearly half of the participants, 44% (n=33), reported an education level $\geq$ 6 years.

Fortified Whole Milk Powder (WMP)

Nearly all participants (97%, n=73) were familiar with the brand of fortified WMP, with 86% (n=63) reporting that they learned about Nido from their family (Table 2). Almost half of participants (44%, n=32) reported ever giving this brand of WMP to their child. Mothers from all the countries of origin represented in the sample reported giving this brand of WMP to their children. Of those giving it to their children, 30% (n=22) believed that it was healthier than gallon whole milk. Participants who received this fortified WMP as children

(n=32) were more likely to think it is healthier than gallon milk compared to those who were not given it or not sure they were given it as a child (n=41) (44% vs 20%, $p<0.05$). Of the 32 participants reporting use of this whole milk powder, 41% (n=13) reported giving it to their child every day.

The most frequent responses as to why participants gave this fortified WMP to their child were: 1) my child did not like or tolerate gallon milk, 2) it is healthy, and 3) my family encouraged its use (Table 3). When asked to describe why the identified WMP was healthier than gallon milk, participants most frequently responded that: 1) it has more nutrients (e.g. vitamins, calcium) than gallon milk, and 2) it is considered the best type of milk for children in my country (Table 3).

Sweetened Flavored Milk Powder (SFMP)

Almost all participants (97%, n=73) were familiar with the Nesquik brand of sweetened flavored milk powder (Table 2). Furthermore, 85% of participants (n=62) reported seeing commercials for this product and 71% (n=52) reported consuming it themselves. Participants often added this powder to their child's milk. Of those 73 who recognized the identified SFMP, 85% (n=62) reported giving it to their child. More than half of these participants (53%, n=33) reported using it at least a few times per week. Over a third of the 73 participants who were familiar with the identified SFMP (36%, n=26) reported that it is healthy for their children. Those who used it at least a few times a week were more likely to report that it is healthy compared to those giving it less frequently (61% vs 17%, $p<0.01$).

When asked to describe why they gave SFMP to their child, the four most common themes were: 1) my child likes it or asks for it, 2) to add or change the flavor of my child's milk, 3) my family's encouragement, and 4) to help my child drink milk (see Table 3). When asked to explain why Nesquik is healthy, the most frequent response (77%, n=20) was that it has nutrients (e.g. vitamins, iron or calcium).

Discussion

Findings from this study suggest that young low-income Latino children from immigrant families commonly consume the 2 identified products, thereby increasing their risk for excess fat and sugar intake. To our knowledge, this is the first study to evaluate the use of these products in this population and provide insight into the maternal beliefs motivating their use.

Almost half of the participants had given the fortified WMP to their child and over three-quarters gave the SFMP to their child, with many participants offering these items on a daily basis. Brand familiarity was high and many participants had consumed these products as children. Most participants became aware of these products through their families. In fact, family appeared to play an important role in maternal use of these products since many mothers reported encouragement by their families to use fortified WMP and SFMP. Use of either product, for some participants, appeared to be a solution to their child not liking milk. In fact, many mothers believed their child would not drink milk unless it was sweetened with SFMP.

Pediatric providers caring for this population need to be aware of the common intake of these products and to ask questions related to their use. Educating parents on the role of milk in a healthy diet could allay parental concerns related to their child's low intake of milk.

Understanding parental beliefs related to these products may help providers when counseling on their use. Many participants believed that vitamin-fortified WMP is more nutritious than gallon whole milk, providing more vitamins and calcium. Numerous participants associated the good health of children in their countries of origin with their consumption of this powder. Similarly, over a third of the participants believed the brand of SFMP is healthy because it enhances milk with nutrients such as vitamins, iron or calcium.

This study has limitations. The main limitation is the uncertainty of self-reported data. Furthermore, the small sample size limits the generalizability of the findings. Strengths include our focus on young children and the inclusion of Spanish-speakers. Most previous studies on dietary patterns related to milk have focused on Latino teenagers and adults.⁸⁻¹³

Our data support previous reports on the high consumption of flavored milk among older Latino children, adolescents and adults. The common consumption of the identified brands of fortified WMP and SFMP in Latino toddlers and preschoolers may contribute to a preference for whole and flavored milk in adolescence and adulthood, given that eating patterns and food preferences have been shown to be established during the first few years of life.^{14,15,16} Beck and colleagues found that low-income Latino parents trust health care providers for nutritional information on beverages.¹⁷ This suggests that low-income Latina immigrant mothers would be receptive to nutrition counseling and educational tools to improve their milk feeding practices. Those who provide care for children from low-income Latino immigrant families should inquire about the use of these products to prevent their excess consumption and consider the beliefs identified in this study when counseling on the use of these products.

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Table 1

Demographic characteristics of a sample of low-income Latina immigrant mothers with young children.
(n=75)

	n	Percent/Mean(SD)
Participant age (years)		28.7 (SD=5.6)
Level of education		
6 years	33	44%
7 – 12 years	34	45%
> 12 years	8	11%
Number of children		2.5 (SD=1.3)
Country of Origin		
Mexico	38	51%
El Salvador	10	13%
Honduras	12	16%
Ecuador	9	12%
Other	6	8%
Years in US		7.7 (SD=3.8)
Acculturation scale*		1.43 (SD=1.1)
Index child age (years)		3.6 (SD=1.6)
Male index child	36	48%

* Scores on acculturation scale ranged from 1 to 5 with higher scores indicating higher level of acculturation.

Table 2

Use of Fortified Whole Milk Powder and Sweetened Flavored Milk Powder in a sample of low-income Latina immigrant mothers of young children (N=75)

Fortified whole milk powder (NIDO):		
	n	%
Familiar with Nido brand	73	97%
Of those familiar with brand (n=73):		
Learned about it from family	63	86%
Given in childhood		
Yes	32	44%
No	28	38%
Not sure	13	18%
Ever given to index child	32	44%
Believe it is healthier than milk in a gallon jug		
Yes	22	30%
No	30	41%
Not sure	21	29%
Of those who ever gave it to index child (n=32):		
Country of origin		
Mexico	16	50%
El Salvador	5	16%
Ecuador	3	9%
Honduras	4	13%
Other	4	12%
Frequency of giving to index child		
Every day	13	41%
Once a week	3	9%
Rarely	16	50%
Sweetened Flavored Milk Powder (Nesquik):		
	n	%
Familiar with brand	73	97%
Have seen commercials for brand	62	85%
Of those familiar with brand (n=73):		
Ever consumed by mother	52	71%
	26	36%
Believe is healthy		
Yes	31	42%
No	16	22%
Not sure		
Ever given to index child	62	85%
Of those who gave to child (n=62):		
Frequency of giving to index child		
Every day	21	34%
Few times per week	12	19%

Once a week	3	5%
Once a month	2	3%
Rarely	24	39%

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Table 3

Representative quotes of maternal use and beliefs regarding Nido and Nesquik

	Representative quote	n	Frequency
Reported reasons for giving NIDO to child (n=32)			
Child did not like or tolerate gallon milk or formula	<i>Because at one year of age, they change formula to gallon milk, so I started giving him skim milk and it was bad for him, he would throw up and feel nauseated, so the pediatrician told me to give him 1% milk and it did the same thing. I gave him Nido and it's the one that is good for him.</i>	10	23%
Nido is healthy	<i>It is good for [his] growth. Nido milk is the best because it contains everything that a child needs, like calcium and vitamins.</i>	6	14%
My family encouraged its use	<i>Where we're from, my mother taught me that Nido milk is good because it gives strength to children, energy to grow and many other things like that. My mother used to say this and later on, I learned from [giving it to] my other boy, and it was also helping my girl. The truth is that, in my whole family, the children who grew up [drinking] Nido milk have been very healthy until now, thank God, and they are not obese or too skinny. For example, my little brothers and nephews grew up [drinking] only Nido.</i>	6	14%
Other		22	*50%
Reported reasons why Nido is perceived to be healthier than gallon milk (n= 22)			
Nido has more nutrients (vitamins, calcium) than gallon milk	<i>Because it has more vitamins and I felt that it was more complete than gallon milk and it sustained her more. I gave her Nido when she was two and three years old because in my country, we consider that it has a lot of nutrients that gallon milk doesn't have.</i>	11	42%
Nido is considered the best milk for children in my country	<i>Yes, I think it is better because in my country, we have used it for a long time and the children look like they are healthy children. Well, what I know from Honduras is that it is the healthiest [milk]. I don't know [why], but I heard my sisters say that Nido is the best one over there. I don't know why, but my sisters only give Nido to their kids and they say it is the best one.</i>	4	15%
Other		8	35%
Reported reasons for giving Nesquik to child (n=74)			
Child likes it or child asks for it	<i>She asks for it. Now if I give her plain milk, she won't drink it. If I don't put Nesquik in her milk, she only drinks a little.</i>	25	34%
To add or change the flavor of child's milk	<i>There are times that I add it to change it up, so he doesn't always drink his milk just plain like that. Because I think her milk tastes better and she likes it.</i>	14	19%
My family encouraged its use	<i>Since I saw my sister was giving it to her children, I did it too and she liked it.</i>	10	14%
To help child drink milk	<i>Because he won't drink it just plain. But he will drink it with Nesquik.</i>	9	12%
Other		16	22%
Reported reasons why Nesquik is perceived to be healthy (n=31)			

	Representative quote	n	Frequency
Nesquik has nutrients (vitamins, iron, or calcium)	<i>Well, from what the label says, I know it has nutrients. I think it is [healthy] because it has a high percentage of iron and vitamins.</i>	20	77%
Other		11	35%

Notes:

* Total number of responses exceeds the number of responders because some participant responses contained multiple themes in their answers. Each of the “Other” responses had <10% prevalence.