



# BISPHENOL-A (BPA) IN SIPPY CUPS AND FEEDING BOTTLES

WHAT DO  
CONSUMERS AND  
RETAILERS HAVE  
TO SAY?



Report by  
**Toxics Link** |

## About Toxics Link

Toxics Link is an Indian environmental research and advocacy organization set up in 1996, engaged in disseminating information to help strengthen the campaign against toxic pollution, provide cleaner alternatives and bring together groups and people affected by this problem. Toxics Link's mission statement is "Working together for environmental justice and freedom from toxics". We have taken it upon ourselves to collect and share both information about the sources and the dangers of poisons in our environment and bodies, and information about clean and sustainable alternatives for India and the rest of the world." Toxics Link has unique expertise in the areas of hazardous, medical and municipal wastes, international waste trade, and the emerging issues of pesticides, Persistent Organic Pollutants (POPs), hazardous, heavy metal contamination etc. from the environment and public health point of view. We have successfully implemented various best practices and have brought in policy changes in the aforementioned areas apart from creating awareness among several stakeholders.

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# Abbreviations

<b>BPA</b>	Bisphenol A
<b>BIS</b>	Bureau of Indian Standards
<b>ER</b>	Epoxy resins
<b>IS</b>	Indian Standards
<b>IMS</b>	Infant Milk Substitutes
<b>PC</b>	Polycarbonate
<b>PES</b>	Polyethersulfone
<b>WHO</b>	World Health Organization

# Table of Contents

<b>1. Introduction</b>	<b>1</b>
1.1. Health Impact of BPA	1
<b>2. Objective of the Study</b>	<b>2</b>
<b>3. Methodology and Sampling</b>	<b>2</b>
<b>4. Result of the Study</b>	<b>3</b>
4.1. Analysis of Household Consumer Responses	3
4.2. Analysis of Responses from Retailers	13
<b>5. Conclusions of the Study</b>	<b>20</b>
<b>6. Recommendations</b>	<b>20</b>
<b>Annex I Questionnaire for Consumers</b>	<b>21</b>
<b>Annex II Questionnaire for Retailers</b>	<b>23</b>

# TABLES

Table 1: Survey on gender profile of the consumer	3
Table 2: Survey on age group of the consumers	4
Table 3: Survey on number of children in family of interviewed consumers	4
Table 4: Sampling according to annual income	5
Table 5: Survey on use of plastic feeding bottles by consumers	5
Table 6: Survey on details of use of feeding bottles	6
Table 7: Can consumers differentiate between feeding bottles & sippy cups	6
Table 8: Consumers' use pattern for feeding bottles and sippy cups	7
Table 9: How often are sippy cups used for milk	7
Table 10: Survey on whether consumers check for labels on products	8
Table 11: Survey on label information check by consumers	8
Table 12 Survey on consumer awareness about BPA	9
Table 13: Survey on source of information regarding BPA-free products	9
Table 14: Survey on consumer awareness on BPA regulation	10
Table 15: Survey on source of awareness regarding BPA regulations	10
Table 16: Survey on consumer response on need of regulation for sippy cups	11
Table 17: Survey on methods of cleaning sippy cups	12
Table 18: Survey on consumers' response on replacement of sippy cups or feeding bottles	12
Table 19: Retailers' response on selling feeding bottles & sippy cups	13
Table 20: Survey on market share of feeding bottles & sippy cups	14
Table 21: Survey on market demand of feeding bottles & sippy cups	14
Table 22: Survey on reason for demand	15
Table 23: Retailers' perception regarding consumer awareness on labels	15
Table 24: Retailers' perception on consumers' query on labels	16
Table 25: Survey on selling of BPA-free bottles	17
Table 26 Survey on retailers' perspective on demand for BPA-free feeding bottles/sippy cups	17
Table 27: Survey on retailers' awareness over regulation on BPA	18
Table 28: Survey on source of information for retailers' awareness	18
Table 29: Survey on retailers' view on need for regulation on sippy cups	19
Table 30: Retailers' guidance to customers on cleaning of bottles	19

# FIGURES

Figure 1: Gender profile of the consumers	3
Figure 2: Age group of the consumers interviewed	4
Figure 3: Respondents' Profile - No. of Children in the family by age group (%)	4
Figure 4: Income strata of the consumers	5
Figure 5: Do consumers use plastic feeding bottles	5
Figure 6: Details on why bottles are used	6
Figure 7: Views of consumers on feeding bottles and sippy cups	6
Figure 8: Survey on consumers' use pattern for feeding bottles and sippy cups	7
Figure 9: Number of times bottles/ sippy cups are used	7
Figure 10: Consumer purchasing behavior	8
Figure 11: Information check on labels by consumers	8
Figure 12: Consumer awareness on BPA- free plastic feeding bottles	9
Figure 13: Medium of info about BPA-free plastic bottles (%)	9
Figure 14: Do you know that there is a regulation (on Bisphenol A) for baby feeding bottles in India? (%)	10
Figure 15: Medium of awareness about BPA regulations for consumers	11
Figure 16: Consumer response on need of regulations for sippy cups	11
Figure 17: Method of cleaning sippy cups	12
Figure 18: Replacement period for used feeding bottles/ sippy cups	13
Figure 19: Selling of feeding bottles and sippy cups	13
Figure 20: What sells more- Feeding bottles or sippy cups?	14
Figure 21: Demand of the products	14
Figure 22: Reason for demand	15
Figure 23: Retailers' perception on consumers' willingness for labels	16
Figure 24: Retailers' perception on information check by consumers on label	16
Figure 25: Selling of BPA-free feeding bottles	17
Figure 26 Do customers ask for BPA-free bottles/sippy cups	17
Figure 27: Retailers' awareness on existing BPA regulation for feeding bottles & sippy cups	18
Figure 28: Source of information regarding regulations	18
Figure 29: Retailers' view on need for regulation in sippy cups	19
Figure 30: How do you guide the customers on cleaning of sippy cups? (%)	19



The overall market size for such bottles was around

**US\$ 2,469.9**

million by the end of 2017 which is expected to increase at a CAGR of

**4.7%**

over the forecast period



# INTRODUCTION

# 1

A baby feeding bottle is a bottle with a teat to drink milk directly from it. It is easily available and one of the most preferred baby products in the market. A study conducted by the World Health Organization (WHO) found that baby feeding bottles are used by 60% of parents either immediately after childbirth or after a breastfeeding period of approximately 4 months. Not only have baby feeding bottles emerged as an important market worldwide but also the global market trend shows that the overall market size for such bottles was around US\$ 2,469.9 million by the end of 2017, which is expected to increase at a CAGR of 4.7% over the forecast period. Remarkably, the global baby feeding bottles market is expected to be valued at US\$ 3,556.4 million by the end of 2025.<sup>1</sup>

Likewise, another baby product, sippy cups has a burgeoning market in India. From an estimated market size of US\$ 7,765.2 mn in 2018, the value sales of sippy cups is expected to reach US\$ 11,684.4 mn by 2027 with a CAGR of 4.6%.<sup>2</sup> Sippy cups are mainly used by toddlers for drinking juice and water.

Generally, these plastic baby products are made up of Bisphenol A (BPA) which is primarily used as a monomer for the manufacture of polycarbonates. At present two kinds of BPA-based plastics are available in the market: one is Polycarbonate (PC) and the other one is Epoxy Resins (ER). Polycarbonates are generally used in baby feeding bottles, dental sealants, tooth coatings, carbonless paper (thermal paper) and plastic toys.

ERs are used as protective coatings for food and beverage containers, bonding & adhesives, flooring, paving & construction, composites, electrical & electronic laminates, embedding & tooling, vinyl ester resins and others. The surface lining of the food containers accounted for about 50% of all ER consumption. The health impact of BPA is well known and countries across the globe including India have taken steps to phase out BPA from various items including children products.

## 1.1. Health Impact of BPA

The presence of BPA is a concern in baby/infant products considering its adverse impacts on children's health. Baby feeding bottles are made up of polycarbonate and BPA may leach into the contents of the bottle after constant reheating, mechanical pressure or exposure to high pH detergents. The degree to which BPA leaches from polycarbonate bottles into liquid may depend more on the temperature of the liquid.

Newborn babies are expected to be exposed to higher internal BPA values due to immature glucuronidation activity and impaired sulphation pathway in their body. This makes infants susceptible to the harmful effects of BPA. Toddlers also usually have a higher daily intake of food/drink per volume of body as compared to adults. This in combination with less developed immune systems to metabolize BPA is a likely cause of higher urinary concentrations of BPA.

### HEALTH IMPACT

- Altered brain development & behavior
- Endocrine disruption
- Reproductive effects
- Immune response
- Cardiovascular diseases
- Altered mammary gland development
- Increased adiposity
- Diabetes
- DNA alterations related to estrogen
- Neurological disorders
- Neoplasias & preneoplastic lesions



1 <https://www.transparencymarketresearch.com/baby-feeding-bottles-market.html>

2 <https://www.futuremarketinsights.com/reports/sippy-cups-market>

## 2 OBJECTIVE OF THE STUDY

Toxics Link undertook the first study on BPA in baby feeding bottles in 2014 and found high presence of BPA in the samples tested. Later in 2016 we published a report on BPA in another children product “Sippy cups”.

Subsequently The Bureau of Indian Standards (BIS) revised the standards for baby feeding bottles in 2015 as per IS 14625:2015 and prohibited the use of BPA in baby feeding bottles. Furthermore the Ministry of Child Welfare mentioned that as per section no. 4.1 of IS 14625:2015, “the material used for plastic feeding bottles and accessories excluding teats shall be of polypropylene conforming to IS 10910 or polyethersulfone (PES) or any other olefin based polymer, co-polyester material or other raw material as given in Annex II for manufacture of plastic feeding bottles. The materials used should pose no health hazards to babies and shall not contain Bisphenol -A (BPA).”

The Ministry also suggested phasing out BPA from cups, spouts and straws with the possible amendment into the definition of feeding bottles in the infant Milk Substitutes, Feeding Bottles and infant Foods (Regulation of Production, Supply and Distribution) Act, 1992. The proposed new amendment on the definition of feeding bottles is “Any Bottle or Receptacle used for the purpose of feeding infant milk substitute through a treat or drinking accessory attached or capable of being attached to such bottle and receptacle”. However, the proposed amendment has not been notified yet.

In this context the survey was conducted among the consumers and retailers in five cities Delhi (Delhi), Kolkata (West Bengal), Pune (Maharashtra), Hyderabad (Telangana) and Meerut (Uttar Pradesh) to get their views on the use of plastic feeding bottles and sippy cups to accelerate enforcement of the proposed amendment.

## 3 METHODOLOGY & SAMPLING

The methodology followed a mixture of quantitative and qualitative approaches to derive data and information about the study objectives from the target sample group. The target groups for the field level survey included consumers and chemists/medicine retailers. The survey was conducted through the semi-structured questionnaire.

The samples for the study were taken from Delhi, Meerut, Kolkata, Pune and Hyderabad. 50 consumers and 10 retailers were interviewed from each city. About 250 consumers and 50 retailers were interviewed during the survey.

# 4 RESULTS OF THE STUDY

## 4.1. Analysis of household consumer responses

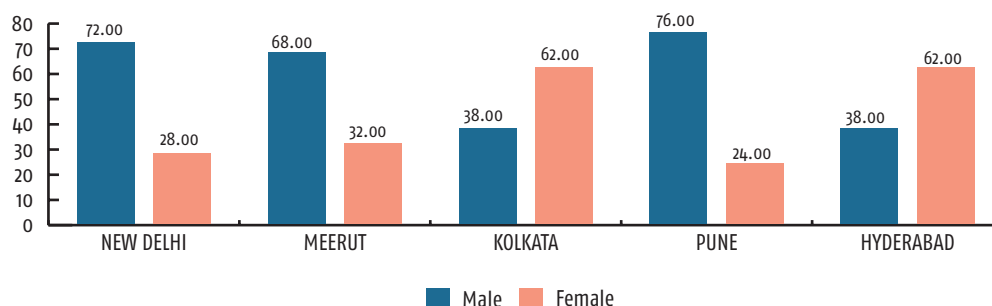
250 consumers were interviewed (50 consumers from each city) to understand their awareness on BPA regulations and their pattern of use. The distribution of customers was made according to their age, income strata, gender and number of children that they have.

**Table 1: Survey on gender profile of the consumer**

Sex	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Male	36	72.00	34	68.00	19	38.00	38	76.00	19	38.00
Female	14	28.00	16	32.00	31	62.00	12	24.00	31	62.00
Total	50	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- Maximum number of respondents from Delhi, Meerut and Pune were male i.e. 72%, 68%, and 76% respectively.
- Maximum number of female respondents were from Kolkata and Hyderabad i.e., 62% from each city.

**Figure 1: Gender profile of the consumers**

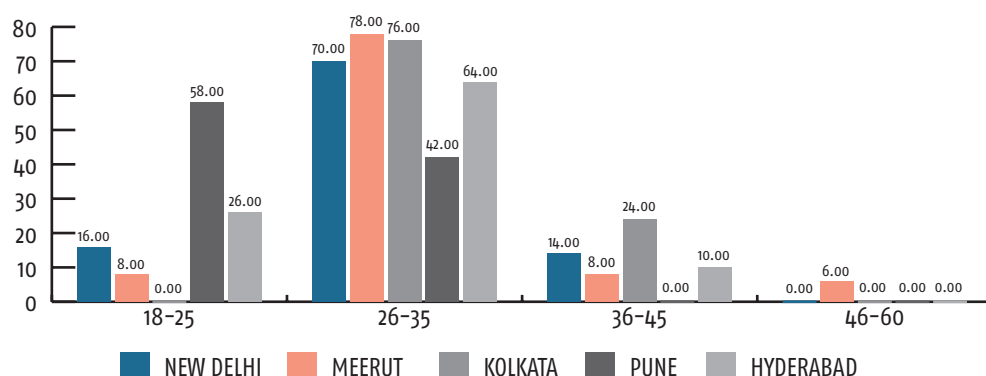


**Table 2: Survey on age group of the consumers**

Age	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
18-25	8	16.00	4	8.00	0	0.00	29	58.00	13	26.00
26-35	35	70.00	39	78.00	38	76.00	21	42.00	32	64.00
36-45	7	14.00	4	8.00	12	24.00	0	0.00	5	10.00
46-60	0	0.00	3	6.00	0	0.00	0	0.00	0	0.00
Total	50	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- Maximum number of respondents were between the age group of 26-35 years. Out of 250, 165 consumers or 82.5 percent of the samples were from this age group.
- Only 3 consumers responded from Meerut between the age group of 46-60 years, while response in this age group was nil from other cities.
- No consumer responded from Kolkata in the age group of 18-25 years while response was nil between the age groups of 36-45 years & 46-60 years in Pune.

**Figure 2: Age group of the consumers interviewed**

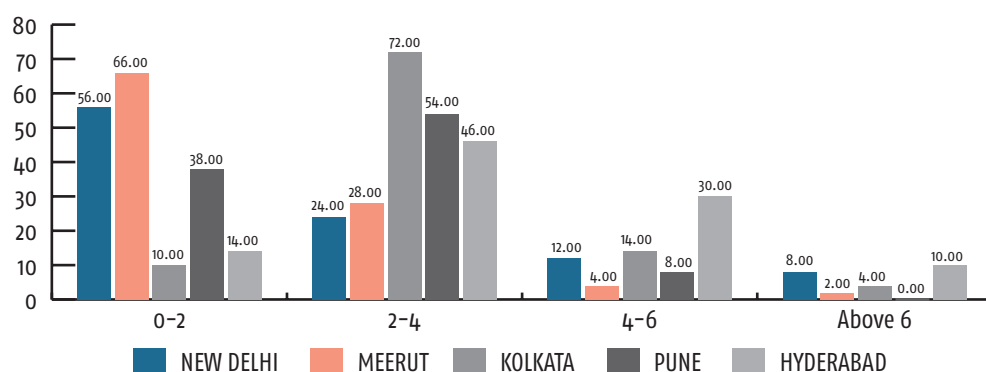


**Table 3: Survey on number of children in family of interviewed consumers**

Number of children, Age group	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
0-2	28	56.00	33	66.00	5	10.00	19	38.00	7	14.00
2-4	12	24.00	14	28.00	36	72.00	27	54.00	23	46.00
4-6	6	12.00	2	4.00	7	14.00	4	8.00	15	30.00
Above 6	4	8.00	1	2.00	2	4.00	0	0.00	5	10.00
Total	50	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- Maximum consumers i.e. 44.8 % that were interviewed have children between the 2-4 year age group
- 36.8% of the consumers interviewed have children in the age group of 0-2 years.
- In Delhi & Meerut the maximum number of respondents have children in the age group of 0-2 years while from Kolkata, Pune & Hyderabad maximum respondents have children in the age group of 2-4 years

**Figure 3: Respondents' Profile - No. of Children in the family by age group (%)**

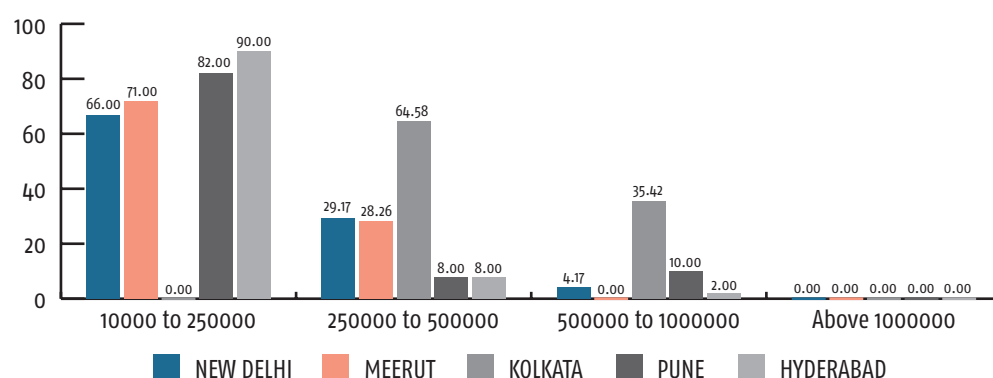


**Table 4: Sampling according to annual income**

Income group	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
10000 to 250000	32	66.67	33	71.74	0	0.00	41	82.00	45	90.00
250000 to 500000	14	29.17	13	28.26	31	64.58	4	8.00	4	8.00
500000 to 1000000	2	4.17	0	0.00	17	35.42	5	10.00	1	2.00
Above 1000000	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	48	100.00	46	100.00	48	100.00	50	100.00	50	100.00

- 32 respondents or 66.67 percent of the samples were taken from low income (10000 to 250000) groups of Delhi
- In Meerut, Pune & Hyderabad maximum respondents were from low income groups i.e. 71.74%, 82% and 90% respectively
- No consumer responded to the survey from the higher income strata i.e., above 1000000

**Figure 4: Income strata of the consumers**

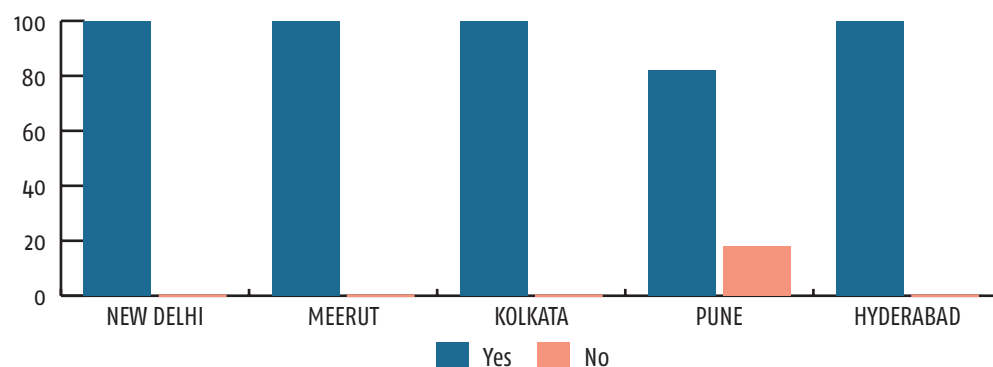


**Table 5: Survey on use of plastic feeding bottles by consumers**

Do you use plastic bottles for feeding your children? Yes/No	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	50	100.00	50	100.00	50	100.00	41	82.00	50	100.00
No	0	0.00	0	0.00	0	0.00	9	18.00	0	0.00
Total	50	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- All the consumers responded that they were using plastic feeding bottles to feed to their kids

**Figure 5: Do consumers use plastic feeding bottles**

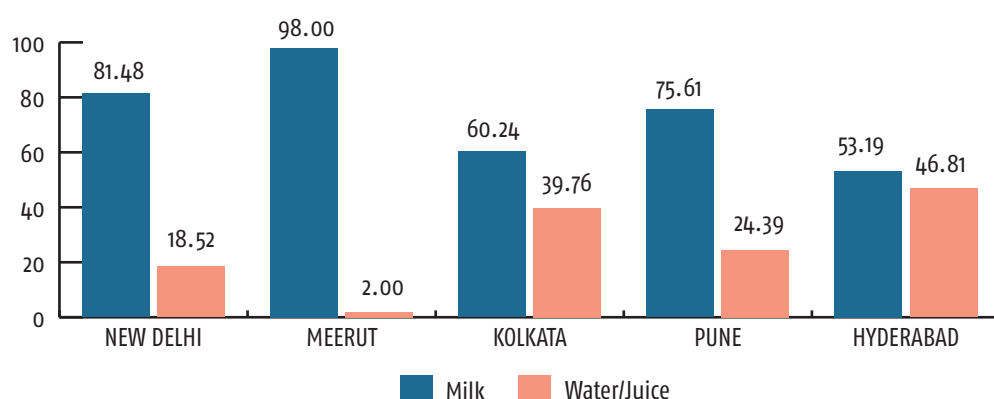


**Table 6: Survey on details of use of feeding bottles**

If yes, what do you use for? (Multiple)	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Milk	44	81.48	49	98.00	50	60.24	31	75.61	50	53.19
Water/Juice	10	18.52	1	2.00	33	39.76	10	24.39	44	46.81
Total	54	100.00	50	100.00	83	100.00	41	100.00	94	100.00

- Majority of the consumers interviewed in the survey i.e., around 89.6%, were using plastic feeding bottles to feed milk
- Amongst the surveyed consumers 10% in Delhi, 33% in Kolkata and 24.39% in Pune use feeding bottles to feed water or juice to their kids.

**Figure 6: Details on why bottles are used**

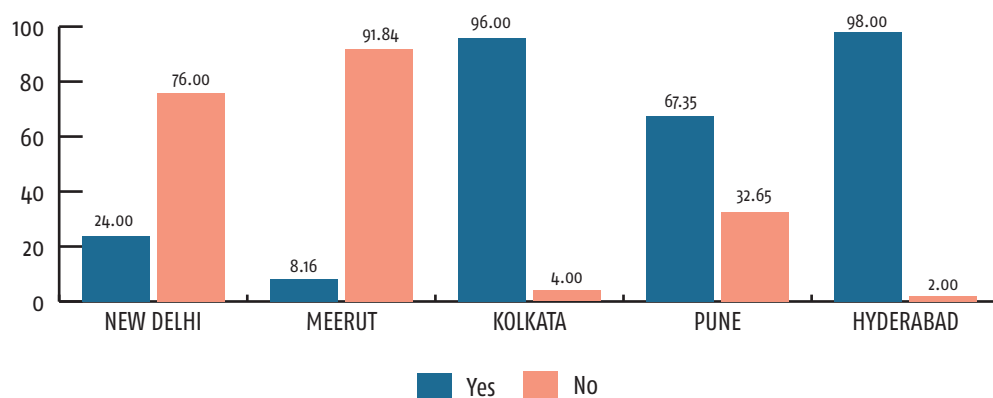


**Table 7: Can consumers differentiate between feeding bottles & sippy cups**

Can you differentiate between feeding bottles and sippy cups?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	12	24.00	4	8.16	48	96.00	33	67.35	49	98.00
No	38	76.00	45	91.84	2	4.00	16	32.65	1	2.00
Total	50	100.00	49	100.00	50	100.00	49	100.00	50	100.00

- 76% of the consumers in Delhi and 91.84% in Meerut cannot differentiate between feeding bottles and sippy cups
- In Kolkata & Hyderabad consumers are aware about the distinct uses for feeding bottles & sippy cups.
- In Pune 67.35 % of the surveyed consumers were able to differentiate between feeding bottles & sippy cups while the remaining 32.65% could not tell the difference.

**Figure 7: Views of consumers on feeding bottles and sippy cups**

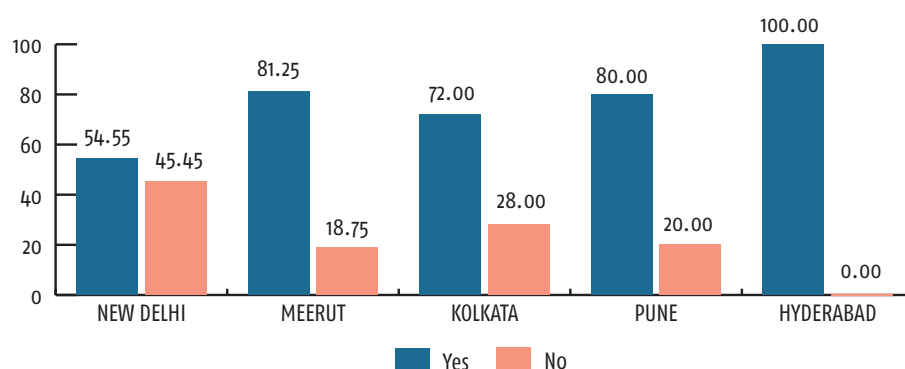


**Table 8: Consumers' use pattern for feeding bottles and sippy cups**

Do you also use bottles for water and/or sippy cups for milk?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	24	54.55	39	81.25	36	72.00	40	80.00	50	100.00
No	20	45.45	9	18.75	14	28.00	10	20.00	0	0.00
Total	44	100.00	48	100.00	50	100.00	50	100.00	50	100.00

- In Hyderabad all interviewed consumers have practice of mixing the use of feeding bottles & sippy cups for feeding milk & water/ juice.
- Out of total number of interviewed consumers only 21.2% samples or 53 consumers are following the right practice of using feeding bottles for milk and sippy cups for water/juice
- Of the consumers that were interviewed, 54.55% in Delhi, 81.25% in Meerut, 72% in Kolkata and 80% in Pune are mixing the uses of bottles & sippy cups.

**Figure 8: Survey on consumers' use pattern for feeding bottles and sippy cups**

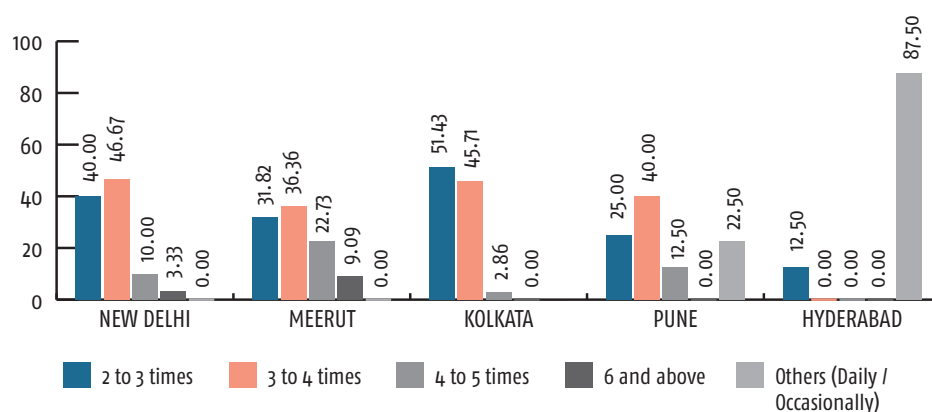


**Table 9: How often are sippy cups used for milk**

If yes, how often?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
2 to 3 times	12	40.00	14	31.82	18	51.43	10	25.00	6	12.50
3 to 4 times	14	46.67	16	36.36	16	45.71	16	40.00	0	0.00
4 to 5 times	3	10.00	10	22.73	1	2.86	5	12.50	0	0.00
6 and above	1	3.33	4	9.09	0	0.00	0	0.00	0	0.00
Others (Daily/Occasionally)	0	0.00	0	0.00	0	0.00	9	22.50	42	87.50
Total	30	100.00	44	100.00	35	100.00	40	100.00	48	100.00

- Most of the consumers from Delhi (46.67%), Meerut (36.36%), Kolkata (45.71%) and Pune (40%) are using sippy cups 3 to 4 times in a day to feed milk to their babies.
- Again 40% of the consumers in Delhi, 31.82% in Meerut, 51.43% in Kolkata, 25% in Pune and 12.50 % in Hyderabad use sippy cups 2 to 3 times in a day to feed milk to infants.

**Figure 9: Number of times bottles/ sippy cups are used**

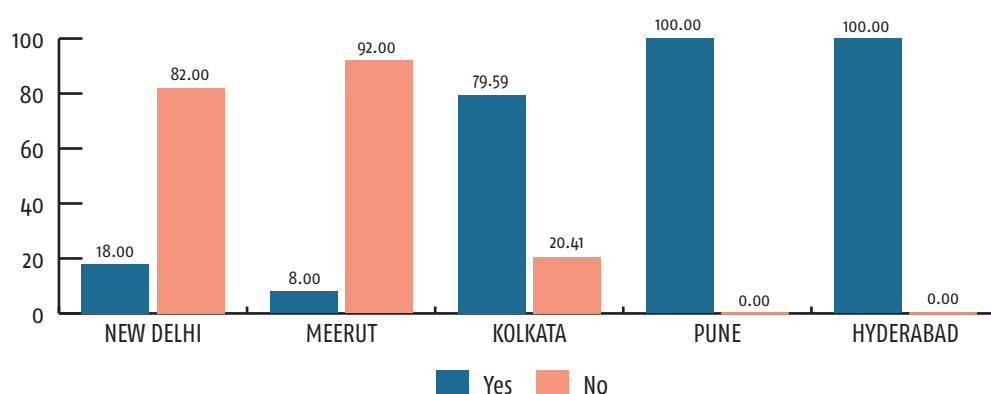


**Table 10: Survey on whether consumers check for labels on products**

Do you check for any labels before purchasing bottles/sippy cups?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	9	18.00	4	8.00	39	79.59	50	100.00	50	100.00
No	41	82.00	46	92.00	10	20.41	0	0.00	0	0.00
Total	50	100.00	50	100.00	49	100.00	50	100.00	50	100.00

- In Hyderabad & Pune all 50 consumers or 100% of the samples interviewed check labels while purchasing products
- In Kolkata only 79.59% samples check the label before purchasing
- In Delhi & Meerut awareness is very low and 82% & 92% of the samples that were interviewed do not check any label for information while purchasing feeding bottles or sippy cups.

**Figure 10: Consumer purchasing behavior**

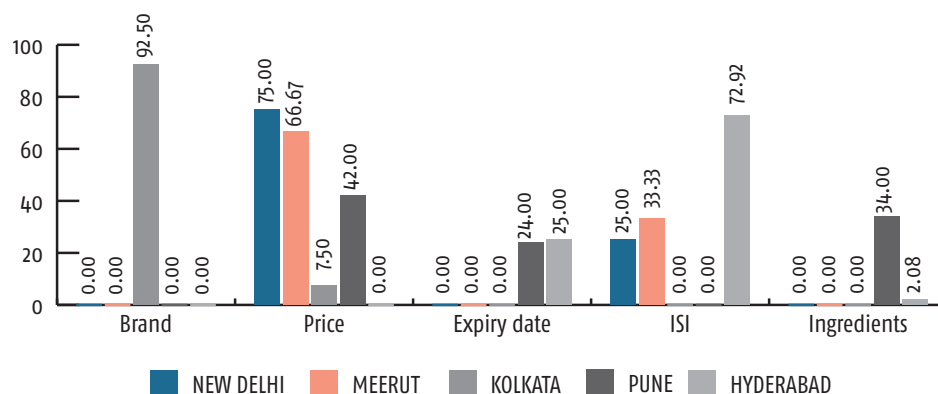


**Table 11: Survey on label information check by consumers**

If yes, which label do you check?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Brand	0	0.00	0	0.00	37	92.50	0	0.00	0	0.00
Price	6	75.00	2	66.67	3	7.50	21	42.00	0	0.00
Expiry date	0	0.00	0	0.00	0	0.00	12	24.00	12	25.00
ISI	2	25.00	1	33.33	0	0.00	0	0.00	35	72.92
Ingredients	0	0.00	0	0.00	0	0.00	17	34.00	1	2.08
Total	8	100.00	3	100.00	40	100.00	50	100.00	48	100.00

- In Kolkata 37 respondents or 92.50% of the samples check brands for purchasing products
- In other cities those who check labels enquire about the price only.

**Figure 11: Information check on labels by consumers**



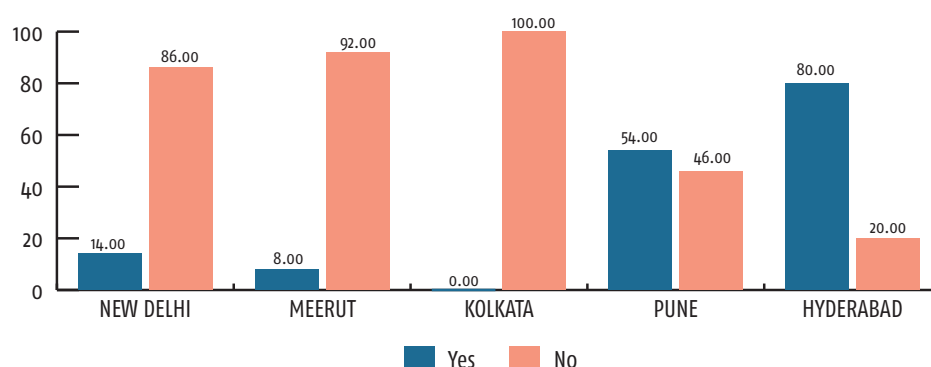


**Table 12 Survey on consumer awareness about BPA**

Have you heard about BPA-free plastic bottles?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	7	14.00	4	8.00	0	0.00	27	54.00	40	80.00
No	43	86.00	46	92.00	50	100.00	23	46.00	10	20.00
Total	50	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- Out of the total consumers 68.8% of the samples had no information on BPA-free feeding bottles
- Consumer awareness on BPA among respondents was maximum in Pune & Hyderabad i.e. 54% & 80% respectively while it was nil in Kolkata.
- 14% samples in Delhi and 8% samples in Meerut show awareness on BPA-free plastic bottles.

**Figure 12: Consumer awareness on BPA- free plastic feeding bottles**

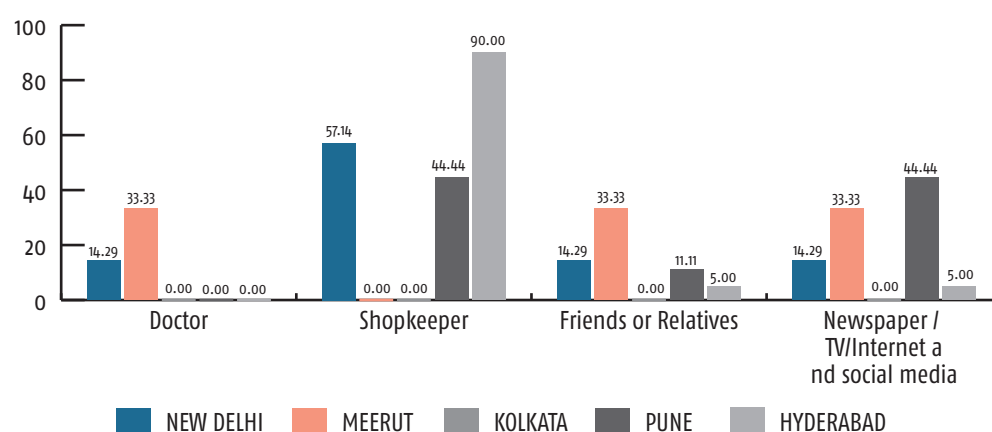


**Table 13: Survey on source of information regarding BPA-free products**

If yes, when and where did you find out?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Doctor	1	14.29	1	33.33	0	0.00	0	0.00	0	0.00
Shopkeeper	4	57.14	0	0.00	0	0.00	12	44.44	36	90.00
Friends or Relatives	1	14.29	1	33.33	0	0.00	3	11.11	2	5.00
Newspaper / TV/Internet and social media	1	14.29	1	33.33	0	0.00	12	44.44	2	5.00
Total	7	100.00	3	100.00	0	0.00	27	100.00	40	100.00

- In Delhi, Pune & Hyderabad maximum number of consumers get information on BPA from shopkeepers.
- In Kolkata no consumer responded regarding awareness on BPA; hence on this question there was zero response
- Doctors, friends/ relatives and Internet or social media was also found to be a vital source of information regarding BPA

**Figure 13: Medium of info about BPA-free plastic bottles (%)**

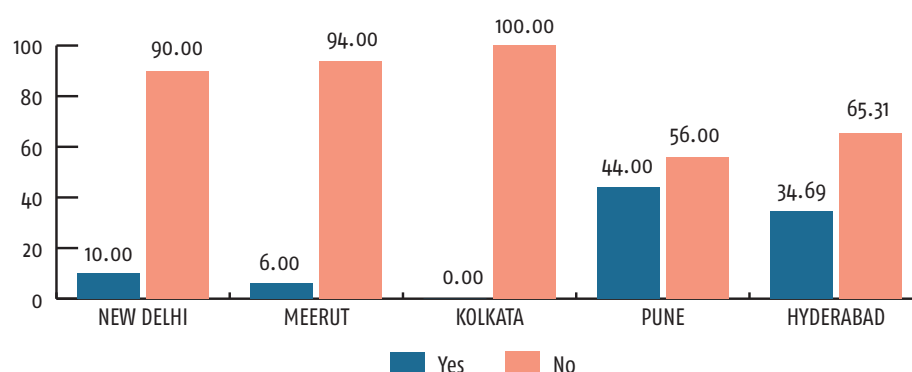


**Table 14: Survey on consumer awareness on BPA regulation**

Do you know that there is a regulation (on Bisphenol A) for baby feeding bottles in India?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	5	10.00	3	6.00	0	0.00	22	44.00	17	34.69
No	45	90.00	47	94.00	50	100.00	28	56.00	32	65.31
Total	50	100.00	50	100.00	50	100.00	50	100.00	49	100.00

- Out of the total consumers that were interviewed only 47 consumers or 18.8% samples showed awareness regarding existing BPA regulations on feeding bottles
- In Kolkata no consumer showed awareness on BPA regulation while in Delhi & Meerut lack of awareness on BPA in feeding bottles was 90% and 94% respectively.
- 44% of the respondents in Pune and 34.69% in Hyderabad have knowledge regarding regulation on BPA

**Figure 14: Do you know that there is a regulation (on Bisphenol A) for baby feeding bottles in India? (%)**



**Table 15: Survey on source of awareness regarding BPA regulations**

If yes, when and where did you find out?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Internet	1	20.00	0	0.00	0	0.00	4	18.18	13	76.47
Doctors	1	20.00	1	100.00	0	0.00	3	13.64	0	0.00
Family or friends	1	20.00	0	0.00	0	0.00	3	13.64	0	0.00
Shopkeeper	0	0.00	0	0.00	0	0.00	12	54.55	4	23.53
Other sources like newspaper, TV etc	2	40.00	0	0.00	0	0.00	0	0.00	0	0.00
Total	5	100.00	1	100.00	0	0.00	22	100.00	17	100.00

- Out of the total consumers who knew about BPA regulation from Hyderabad, 76.47% got the information from the Internet while 23.53% got to know from chemists.
- Similarly, out of the total respondents from Delhi the medium of information on BPA regulation was found to be newspapers, articles, TV etc
- In Pune 54.55% of the respondents got information on BPA regulation from chemists or retailers.
- Doctors, friends, relatives were also a key source of information about existing BPA regulations on baby feeding bottles

Figure 15: Medium of awareness about BPA regulations for consumers

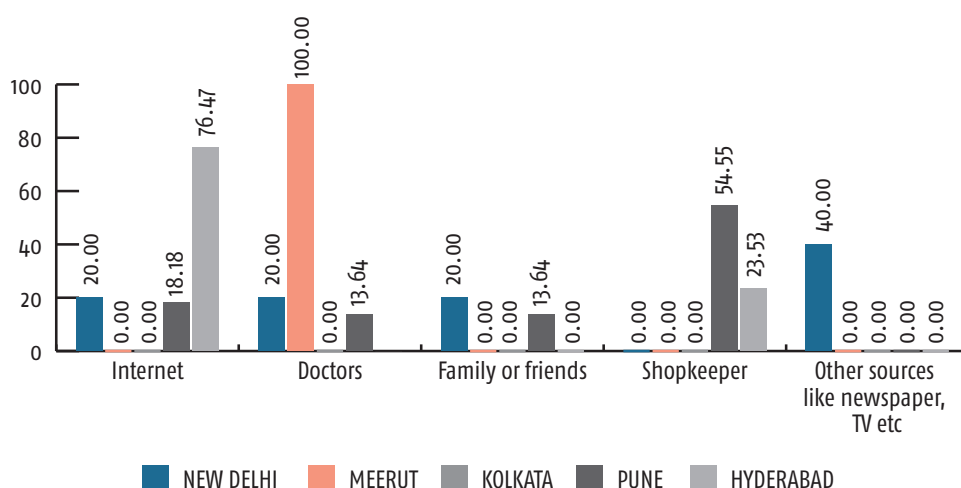
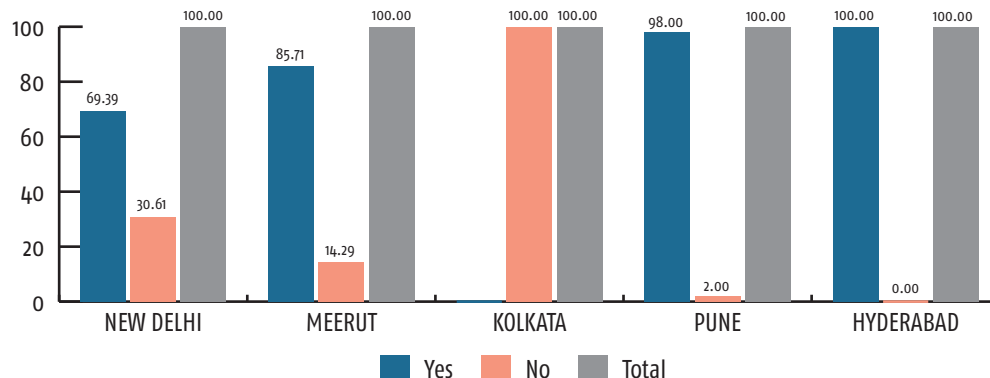


Table 16: Survey on consumer response on need of regulation for sippy cups

Do you think similar regulations should be devised for sippy cups in the country?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	34	69.39	42	85.71	0	0.00	49	98.00	50	100.00
No	15	30.61	7	14.29	50	100.00	1	2.00	0	0.00
Total	49	100.00	49	100.00	50	100.00	50	100.00	50	100.00

- 70% samples show the concern over requirement on BPA regulation in sippy cups
- In Kolkata no consumer was found to show interest for the need of regulation on BPA in sippy cups
- The results from field survey show that all the consumers interviewed from Hyderabad are willing to have stringent regulation on BPA in sippy cups.

Figure 16: Consumer response on need of regulations for sippy cups

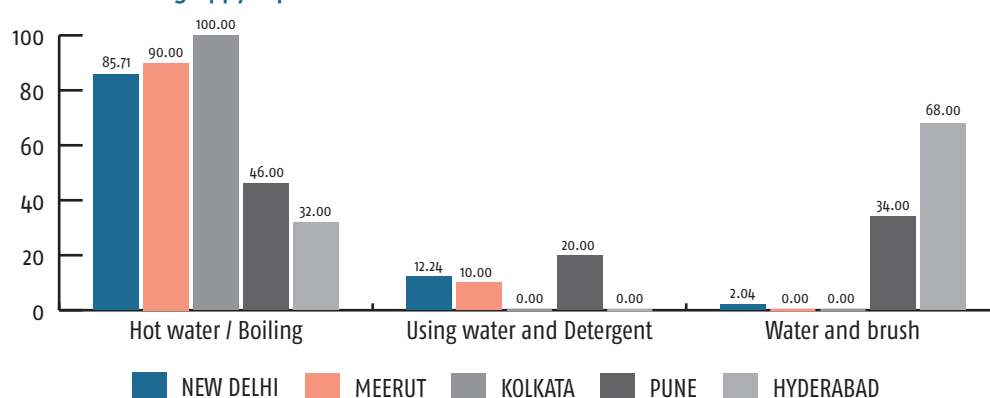


**Table 17: Survey on methods of cleaning sippy cups**

How do you clean your sippy cups?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Hot water / Boiling	42	85.71	45	90.00	50	100.00	23	46.00	16	32.00
Using water and Detergent	6	12.24	5	10.00	0	0.00	10	20.00	0	0.00
Water and brush	1	2.04	0	0.00	0	0.00	17	34.00	34	68.00
Total	49	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- 70.4 percent of the consumers surveyed said that they wash bottles and sippy cups using hot water or by directly boiling the container
- 12.24% respondents from Delhi, 10% from Meerut, and 20% from Pune informed that they wash bottles & sippy cups using detergent and water.
- The results from the survey revealed that out of the total 52 consumers or 20.8% samples are washing feeding containers simply with brush

**Figure 17: Method of cleaning sippy cups**

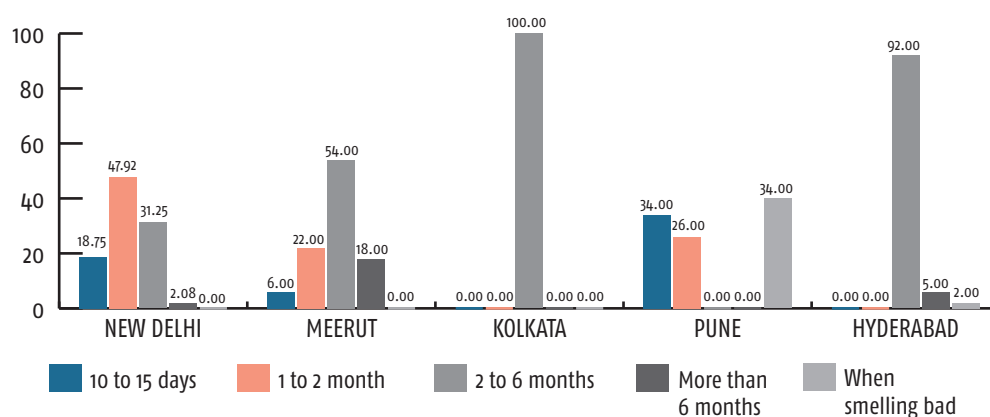


**Table 18: Survey on consumers' response on replacement of sippy cups or feeding bottles**

After how many days do you replace the feeding bottle or sippy cup?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
10 to 15 days	9	18.75	3	6.00	0	0.00	17	34.00	0	0.00
1 to 2 month	23	47.92	11	22.00	0	0.00	13	26.00	0	0.00
2 to 6 months	15	31.25	27	54.00	50	100.00	0	0.00	46	92.00
More than 6 months	1	2.08	9	18.00	0	0.00	0	0.00	3	6.00
When smelling bad	0	0.00	0	0.00	0	0.00	20	40.00	1	2.00
Total	48	100.00	50	100.00	50	100.00	50	100.00	50	100.00

- The survey results show that 55.2% people replace feeding bottles or sippy cups after 2-6 months of use.
- 18.8% samples or 47 out of 250 consumers mentioned that they discard the feeding bottles or sippy cups after 1 to 2 months of use.
- During the survey 18.75% consumers from Delhi and 6% Meerut revealed that they have discarded bottles or sippy cups within 10 to 15 days of use.

Figure 18: Replacement period for used feeding bottles/ sippy cups



## 4.2 Analysis of responses from retailers

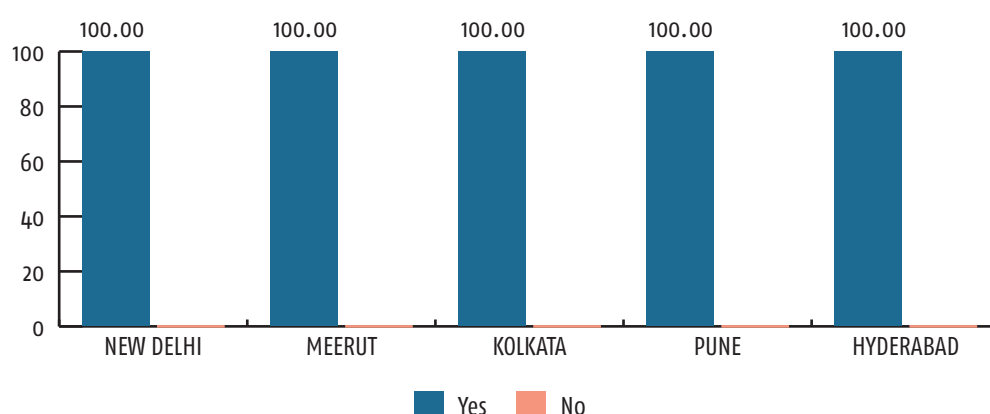
The survey revealed that medical retailers or shopkeepers play an important role in disseminating information regarding BPA, regulation on BPA, uses and washing techniques for baby feeding bottles and sippy cups. With this note we interviewed 10 medicine retailers/ chemists from Delhi, Hyderabad, Meerut, Pune and Kolkata. This survey was to understand their views on Bisphenol-A, regulation on BPA and their approach to guide customers on regulations as well as cleaning of products.

Table 19: Retailers' response on selling feeding bottles & sippy cups

Do you sell feeding bottles and/or sippy cups for children?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00
No	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- All medicine retailers and chemists sell baby feeding bottles and sippy cups in all cities where the survey was done.

Figure 19: Selling of feeding bottles and sippy cups

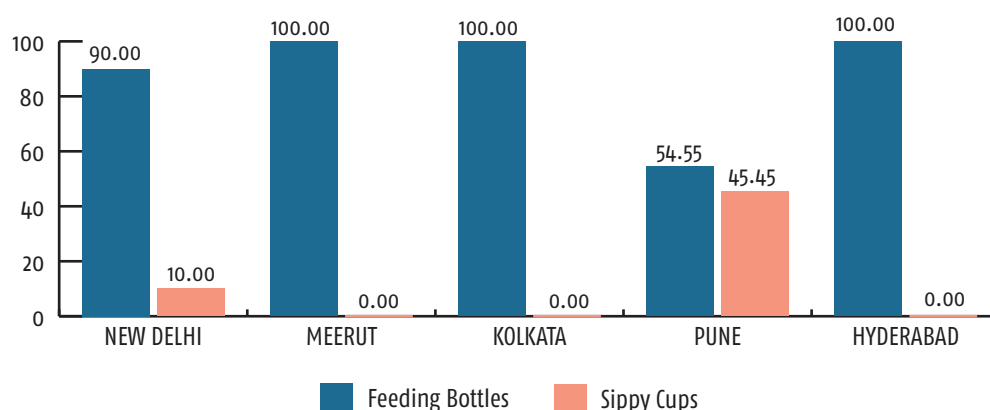


**Table 20: Survey on market share of feeding bottles & sippy cups**

If yes, what sells more, sippy cups or feeding bottles? Why? Please explain.	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Feeding Bottles	9	90.00	10	100.00	10	100.00	6	54.55	12	100.00
Sippy Cups	1	10.00	0	0.00	0	0.00	5	45.45	0	0.00
	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

From the survey it was revealed that retailers and chemists sell more of baby feeding bottles. Out of the total samples, 88.6% samples or 47 respondents sell feeding bottles.

**Figure 20: What sells more- Feeding bottles or sippy cups?**

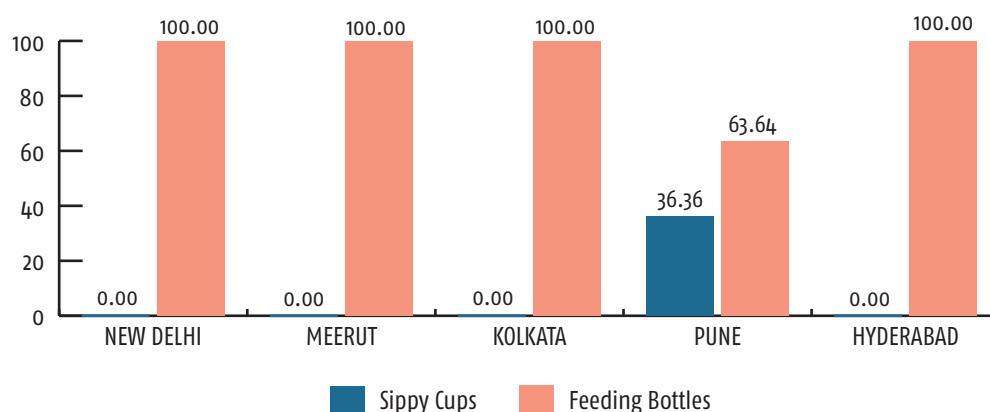


**Table 21: Survey on market demand of feeding bottles & sippy cups**

What do you think is more in demand- Sippy cups or feeding bottles? Why?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Sippy Cups	0	0.00	0	0.00	0	0.00	4	36.36	0	0.00
Feeding Bottles	10	100.00	10	100.00	9	100.00	7	63.64	12	100.00
Total	10	100.00	10	100.00	9	100.00	11	100.00	12	100.00

- Results of the survey revealed that feeding bottles are more in demand among consumers.
- In Delhi, Meerut and Hyderabad it was found that feeding bottles are in demand and consumers don't ask for sippy cups.

**Figure 21: Demand of the products**

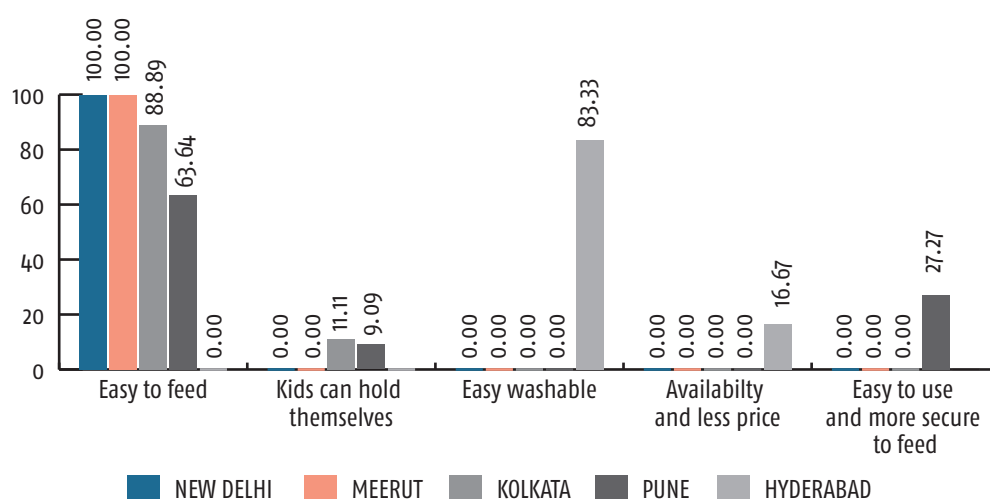


**Table 22: Survey on reason for demand**

Why? reasons	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Easy to feed	10	100.00	10	100.00	8	88.89	7	63.64	0	0.00
Kids can hold themselves	0	0.00	0	0.00	1	11.11	1	9.09	0	0.00
Easily washable	0	0.00	0	0.00	0	0.00	0	0.00	10	83.33
Availability and less price	0	0.00	0	0.00	0	0.00	0	0.00	2	16.67
Easy to use and more secure to feed	0	0.00	0	0.00	0	0.00	3	27.27	0	0.00
<b>Total</b>	<b>10</b>	<b>100.00</b>	<b>10</b>	<b>100.00</b>	<b>9</b>	<b>100.00</b>	<b>11</b>	<b>100.00</b>	<b>12</b>	<b>100.00</b>

- The results from the survey helped in understanding the reason for high demand of baby feeding bottles.
- Almost all the medicine retailers and chemists from cities where the survey was done admitted that feeding bottles are easy to feed the kids.
- 1 retailer each from Kolkata i.e., 11.11% of the samples while 9.09% of the samples from Pune said that kids can easily handle feeding bottles by themselves and that's why they are more in demand.
- However, from Hyderabad 83.33% retailers were of the view that feeding bottles are easy to wash and maintain and that's why they are in demand.

**Figure 22: Reason for demand**



**Table 23: Retailers' perception regarding consumer awareness on labels**

Do the customers check for any labels before purchasing bottles/ sippy cups?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	1	10.00	1	12.50	10	100.00	8	72.73	12	100.00
No	9	90.00	7	87.50	0	0.00	3	27.27	0	0.00
<b>Total</b>	<b>10</b>	<b>100.00</b>	<b>8</b>	<b>100.00</b>	<b>10</b>	<b>100.00</b>	<b>11</b>	<b>100.00</b>	<b>12</b>	<b>100.00</b>

- Medicine retailers and chemists were surveyed to understand consumer buying behavior.
- On the question of whether customers check labels before purchasing, 62.7% stated that customers do check labels.
- In Kolkata and Hyderabad all respondents stated that customers check labels while in Delhi and Meerut customers are not that aware and don't enquire about any labels.
- 90% of the retailers in Delhi and 87.50% retailers in Meerut confirmed that people don't check for labels.

Figure 23: Retailers' perception on consumers' willingness for labels

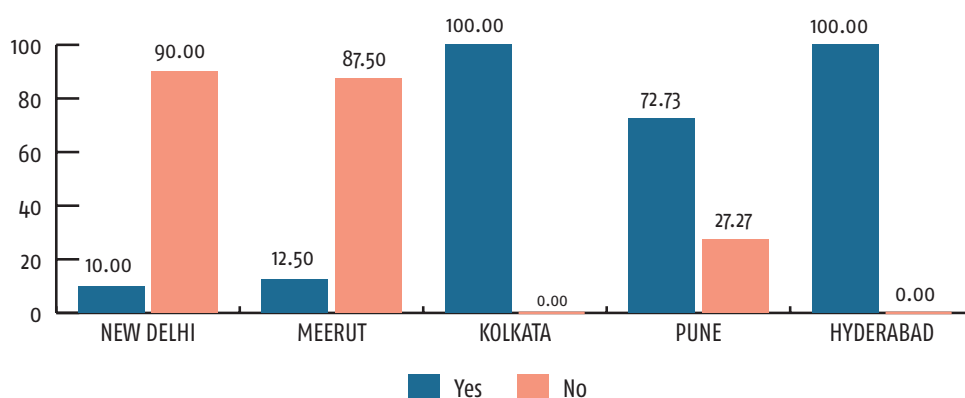
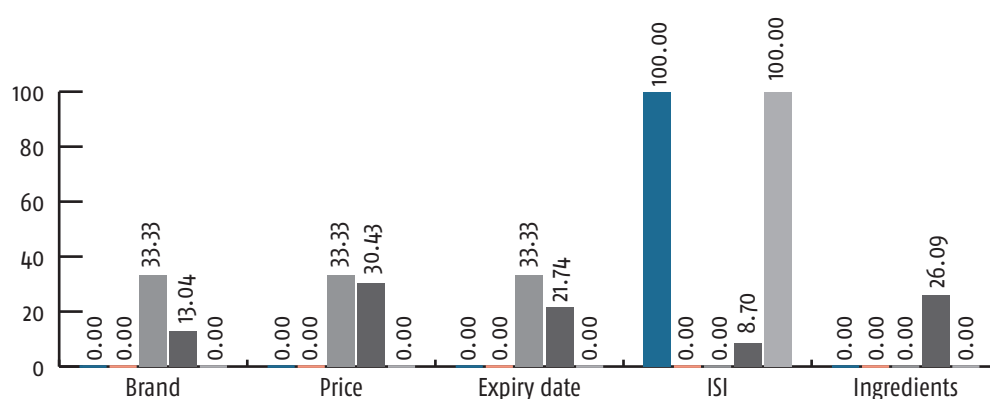


Table 24: Retailers' perception on consumers' query on labels

Which label do they check? (Multiple)	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Brand	0	0.00	0	0.00	5	33.33	3	13.04	0	0.00
Price	0	0.00	0	0.00	5	33.33	7	30.43	0	0.00
Expiry date	0	0.00	0	0.00	5	33.33	5	21.74	0	0.00
ISI	1	100.00	0	0.00	0	0.00	2	8.70	12	100.00
Ingredients	0	0.00	0	0.00	0	0.00	6	26.09	0	0.00
Total	1	100.00	0	0.00	15	100.00	23	100.00	12	100.00

- Out of 50 respondents, 32 respondents who stated customers check labels answered this question.
- From the retailers' point of view in Kolkata, customers check brands, prices and expiry date before purchasing products.
- In Hyderabad the survey results showed that all retailers and chemists stated that ISI mark is the hallmark that customers are looking for in products.
- In Pune price is the main factor that decides the purchasing behaviour

Figure 24: Retailers' perception on information check by consumers on label



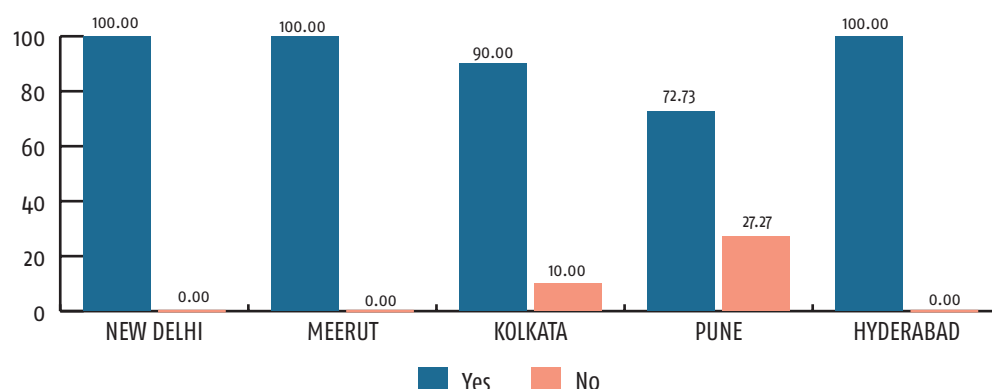


**Table 25: Survey on selling of BPA-free bottles**

Do you also sell BPA- free feeding bottles?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	10	100.00	10	100.00	9	90.00	8	72.73	12	100.00
No	0	0.00	0	0.00	1	10.00	3	27.27	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- The results from the field survey show that all medicine retailers and chemists in Delhi, Meerut and Hyderabad sell BPA-free feeding bottles.
- 10% retailers in Kolkata and 27.27% retailers in Pune also sell BPA-free feeding bottles

**Figure 25: Selling of BPA-free feeding bottles**

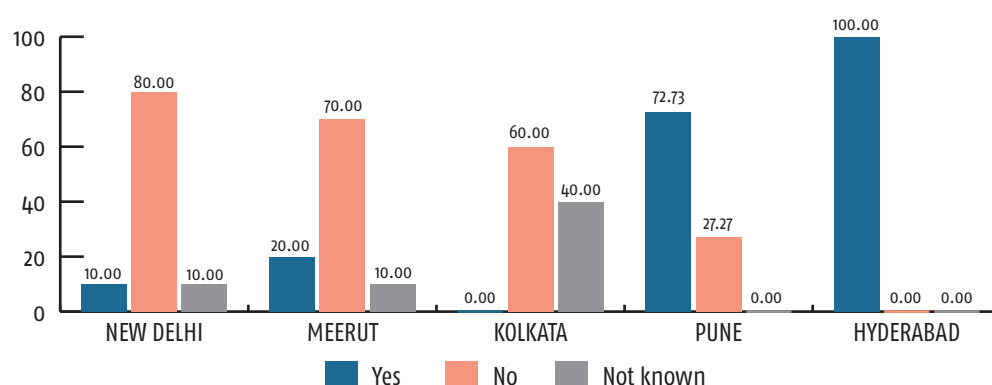


**Table 26 Survey on retailers' perspective on demand for BPA-free feeding bottles/sippy cups**

Do the customers ask for BPA free bottles/sippy cups?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	1	10.00	2	20.00	0	0.00	8	72.73	12	100.00
No	8	80.00	7	70.00	6	60.00	3	27.27	0	0.00
Not known	1	10.00	1	10.00	4	40.00	0	0.00	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- Medicine retailers and chemists were surveyed on the demand for BPA-free bottles & sippy cups.
- Respondents from Hyderabad asserted that all customers ask for BPA-free products only.
- In Kolkata 60% of the retailers stated that customers don't ask for BPA-free products; 40% showed that they have no idea about this and no one answered in the affirmative over the demand for BPA-free feeding bottles.
- 70% respondents in Meerut and 60% respondents in Kolkata stated that consumers don't ask for BPA-free products, be it feeding bottles or sippy cups.

**Figure 26 Do customers ask for BPA-free bottles/sippy cups**

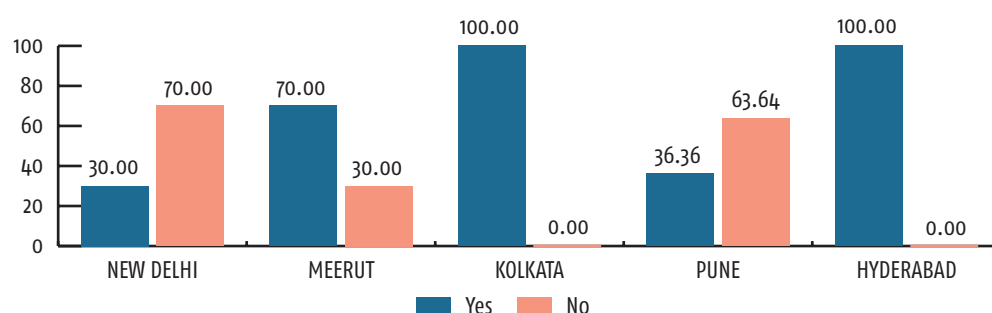


**Table 27: Survey on retailers' awareness over regulation on BPA**

Do you know that there is a regulation (on BPA) for baby feeding bottles in India?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	3	30.00	7	70.00	10	100.00	4	36.36	12	100.00
No	7	70.00	3	30.00	0	0.00	7	63.64	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- All the retailers from Kolkata and Hyderabad i.e., 100% samples responded that they are aware about regulation on BPA in feeding bottles
- In Delhi awareness among retailers is low. Only 30% know about BPA regulation.
- In Pune 63.64% retailers have no awareness on BPA in baby feeding bottles
- While in Meerut 70% respondents asserted that they have a fair idea about BPA regulations

**Figure 27: Retailers' awareness on existing BPA regulation for feeding bottles & sippy cups**

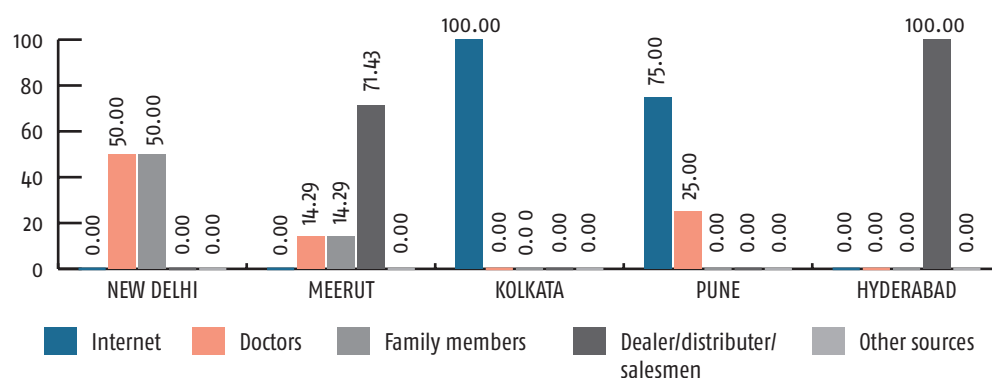


**Table 28: Survey on source of information for retailers' awareness**

If yes, when and where did you find out?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Internet	0	0.00	0	0.00	10	100.00	3	75.00	0	0.00
Doctors	1	50.00	1	14.29	0	0.00	1	25.00	0	0.00
Family members	1	50.00	1	14.29	0	0.00	0	0.00	0	0.00
Dealer/distributor/salesmen	0	0.00	5	71.43	0	0.00	0	0.00	12	100.00
Other sources	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Total	2	100.00	7	100.00	10	100.00	4	100.00	12	100.00

- 36 respondents who have awareness on BPA regulations have answered this question.
- The survey results revealed that in Kolkata and Pune Internet is the main source of information on BPA regulation among retailers.
- In Pune 75% retailers derive their information from the Internet while 25% samples get information from doctors.
- Through this survey it was revealed that in Hyderabad and Meerut dealers, distributors and/or salesmen provide the information on existing regulations to the shopkeepers

**Figure 28: Source of information regarding regulations**

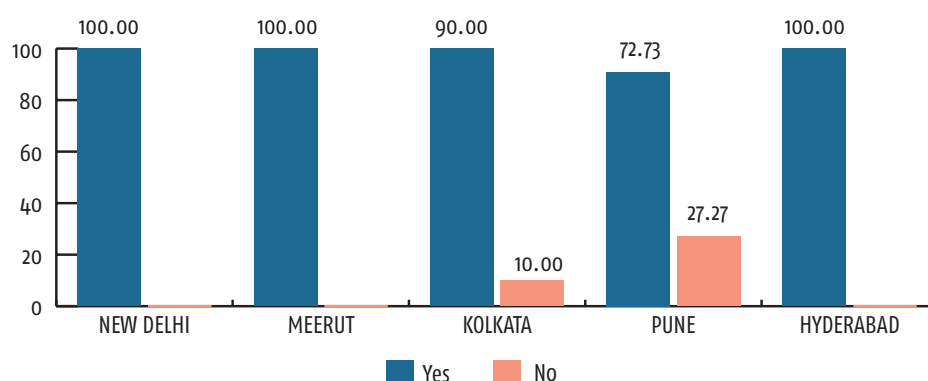


**Table 29: Survey on retailers' view on need for regulation on sippy cups**

Do you think similar regulations should be devised for sippy cups in the country?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Yes	10	100.00	10	100.00	10	100.00	10	90.91	12	100.00
No	0	0.00	0	0.00	0	0.00	1	9.09	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- Through this survey it was revealed that all retailers and chemists from each city are looking forward to stringent regulations on sippy cups also.

**Figure 29: Retailers' view on need for regulation in sippy cups**

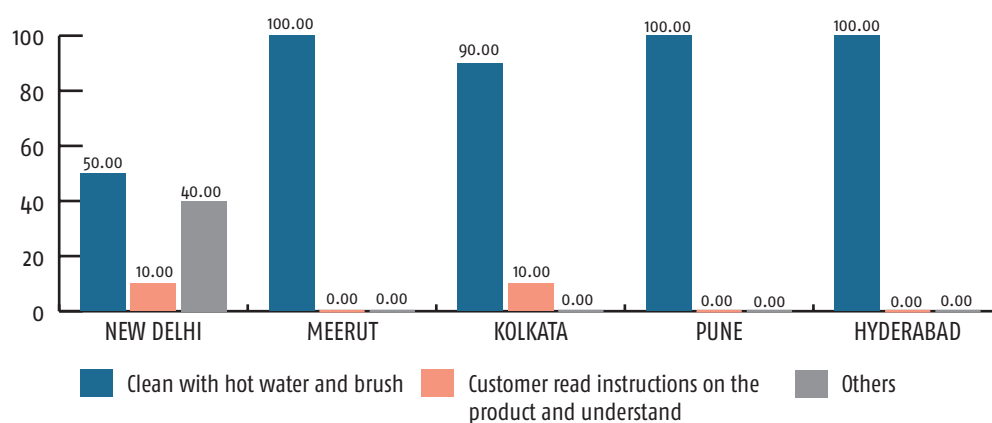


**Table 30: Retailers' guidance to customers on cleaning of bottles**

How do you guide the customers on how to clean the sippy cups? If yes, what do you tell them?	NEW DELHI		MEERUT		KOLKATA		PUNE		HYDERABAD	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
Clean with hot water and brush	5	50.00	10	100.00	9	90.00	11	100.00	12	100.00
Customers read instructions on the product and understand	1	10.00	0	0.00	1	10.00	0	0.00	0	0.00
Others	4	40.00	0	0.00	0	0.00	0	0.00	0	0.00
Total	10	100.00	10	100.00	10	100.00	11	100.00	12	100.00

- The results of the survey show that retailers and shopkeepers guide and provide information to customers on cleaning of sippy cups.
- Out of the total respondents, 94% samples asserted that they suggest customers to wash sippy cups with hot water and brush.
- In Delhi 10% of the respondents make suggestions to customers to read instructions given on products for cleaning.

**Figure 30: How do you guide the customers on cleaning of sippy cups? (%)**



# 5 CONCLUSIONS OF THE STUDY

- The survey indicates that most of the respondents (consumers) irrespective of the income group are using baby feeding bottles for their children.
- Many of the respondents are also using sippy cups for their children.
- The survey also indicates that the consumers are using sippy cups for drinking milk for their children.
- The survey indicates that the consumers are not able to differentiate between the sippy cups and baby feeding bottles.
- Many of the respondents are of the view that there should be regulation on sippy cups
- There is a need for mass awareness on the issues of baby feeding bottles.

## Recommendations

The survey is the first-of-its-kind after there is a proposed amendment to the existing IMS Act in 2017 based on Toxics Link's report. The proposed amendment has broadened the purview of the feeding bottles and related products meant for the children. However the proposed regulation is yet to be enforced.

In this context the survey has reiterated that there is a large scale confusion prevalent among the consumers to differentiate between the use of baby feeding bottles and sippy cups which is jeopardizing the health of the children. The survey also inferred that most of the consumers were of the view that the sippy cups and other related products need to be regulated considering children's health.

## ANNEX I

# QUESTIONNAIRE FOR CUSTOMERS

### General Information

City : \_\_\_\_\_

Name of respondent : \_\_\_\_\_

Age ☐ 18 -25 ☐ 26-35 ☐ 36-45 ☐ 46 -60

Sex (M/F) : \_\_\_\_\_

Address : \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mobile no : \_\_\_\_\_

Number of children : \_\_\_\_\_

Age group ☐ 0-2 ☐ 2-4 ☐ 4-6 ☐ Above 6

Income Group :

☐ 10000 - 250000

☐ 250000 – 500000

☐ 500000 – 1000000

☐ 1000000 – 5000000

☐ 5000000 – 10000000

**1. Do you use plastic bottles for feeding your children? Yes/No**

If yes, what do you use for?

a. Milk\_\_\_\_\_ b. Water/Juice\_\_\_\_\_

**2. Can you differentiate between feeding bottles and Sippy cups?**

a. Yes b. No

**3. Do you also use bottles for water and/or Sippy cups for milk?**

a. Yes b. No

If yes, how often? Answer \_\_\_\_\_

**4. Do you check for any labels before purchasing bottles/sippy cups?**

a. Yes b. No

If yes, which label do you check? Answer \_\_\_\_\_

**5. Have you heard about BPA free plastic bottles?**

a. Yes b. No

If yes, when and where did you find out?

Answer \_\_\_\_\_

**6. Do you know that there is a regulation (on BPA) for baby feeding bottles in India?**

a. Yes b. No

If yes, when and where did you find out?

Answer \_\_\_\_\_

**7. Do you think similar regulations should be devised for Sippy cups in the country?**

a. Yes b. No

How do you clean your Sippy cups?

Answer \_\_\_\_\_

**8. Any other comments**

Answer \_\_\_\_\_

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## ANNEX II

# QUESTIONNAIRE FOR RETAILERS

### General Information

Name of the retailer \_\_\_\_\_

Name and address of the store \_\_\_\_\_

Contact Details \_\_\_\_\_

1) Do you sell feeding bottles and/or Sippy cups for children?

- a. Yes      b. No

2) If yes, what sells more, Sippy cups or feeding bottles? Why? Please explain.

Answer \_\_\_\_\_

3) What do you think is more in demand- Sippy cups or feeding bottles? Why?

Answer \_\_\_\_\_

4) What is the reason behind this?

- a. Easy to feed
- b. Kids can hold themselves
- c. Easy to wash
- d. Availability and less price
- e. Easy to use and more secure to feed

5) Do the customers check for any labels before purchasing bottles/sippy cups?

- a. Yes      b. No

If yes, which label do they check? Answer \_\_\_\_\_

6) What kind of information they check in label?

- a. Brand
- b. Price
- c. Expiry date
- d. ISI
- e. Ingredients

**7) Do you also sell BPA free plastic bottles?**

- a. Yes                      b. No

**8) Do the customers ask for BPA free bottles/sippy cups?**

Answer \_\_\_\_\_

**9) Do you know that there is a regulation (on BPA) for baby feeding bottles in India?**

- a. Yes                      b. No

If yes, when and where did you find out? Answer \_\_\_\_\_

**10) If yes, when and where did you find out?**

- a. Internet  
b. Doctors  
c. Family members  
d. Dealers/ distributors/salesmen  
e. Other sources

**11) Do you think similar regulations should be devised for Sippy cups in the country?**

- a. Yes                      b. No

**12) How do you guide the customers on how to clean the Sippy cups? If yes, what do you tell them?**

Answer \_\_\_\_\_

**13) Any other comments**

Answer \_\_\_\_\_







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