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Authors

Cernioglo, Karina

Smilowitz, Jennifer T

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Infant Feeding Practices and Parental Perceptions During the 2022 United States Infant Formula Shortage Crisis



Karina Cernioglo BS^{1,2}; Jennifer T. Smilowitz² PhD

1. University of Davis, School of Medicine, Sacramento, CA, USA; 2. University of California Davis, Foods for Health Institute, Davis, CA, USA

Background

In May of 2022, parents living in the United States (U.S.) experienced a significant infant formula shortage with national out-of-stock rates of up to 74% for the week ending in May 28, 2022 [1].

Longstanding Contributing Factors:

- ❖ Few U.S. formula producers
- ❖ U.S. trade policy and high tariff rates
- ❖ Infant formula rebate contracts used by the Special Supplemental Nutrition Program for Woman Infant Children (WIC)

Precipitating Factors:

- ❖ Supply chain issues related to COVID-19 (2020 to present) [2]
- ❖ Infant formula recall due to contamination (February 2022) [3]
- ❖ Closure of major manufacturing plant that supplies one-fifth of all U.S. formula (February 2022) [4]

Methods

Study Design

Anonymous, electronic, cross-sectional survey administered from May to June 2022 that investigated:

- ❖ Infant consumption 7 days prior to and during the infant formula shortage
- ❖ Parental experience with available resources
- ❖ Parental sentiments towards proposed resources

Inclusion Criteria

- ❖ U.S. resident
- ❖ Infant ≤ 12 months old
- ❖ Experienced challenges feeding infant due to formula shortage

Data Analysis

- ❖ Statistical significance: $p < 0.05$ with Bonferroni-adjusted p-values
- ❖ Infant feeding practices: McNemar test
- ❖ Perceived guidance and support for feeding infants: Fisher's exact two-tailed test
- ❖ Ranked helpfulness of available resources: Kruskal-Wallis one-way analysis of variance
- ❖ Ranked helpfulness of proposed resources: descriptive statistics

Results

Demographics

Parental Demographics

Mean Age 30 years
Sex 65% female
Race 76% White
19% Black
WIC Recipients 75%
Primiparous Mothers 85%

- ❖ 2,043 responses collected
- ❖ $n = 99$ met all criteria
- ❖ Responses from 21 unique U.S. states
- ❖ 62% of respondents from California

Infant Demographics

Mean Age 6 months
Mixed Feeders 81%
Gestational Age at Birth 93% term

- ❖ Most helpful potential resources listed by parents:
 - 1) Prenatal lactation education (61%)
 - 2) Free postpartum lactation support (59%)
 - 3) Access to websites compare infant formula brands (59%)

Infant Feeding Practices

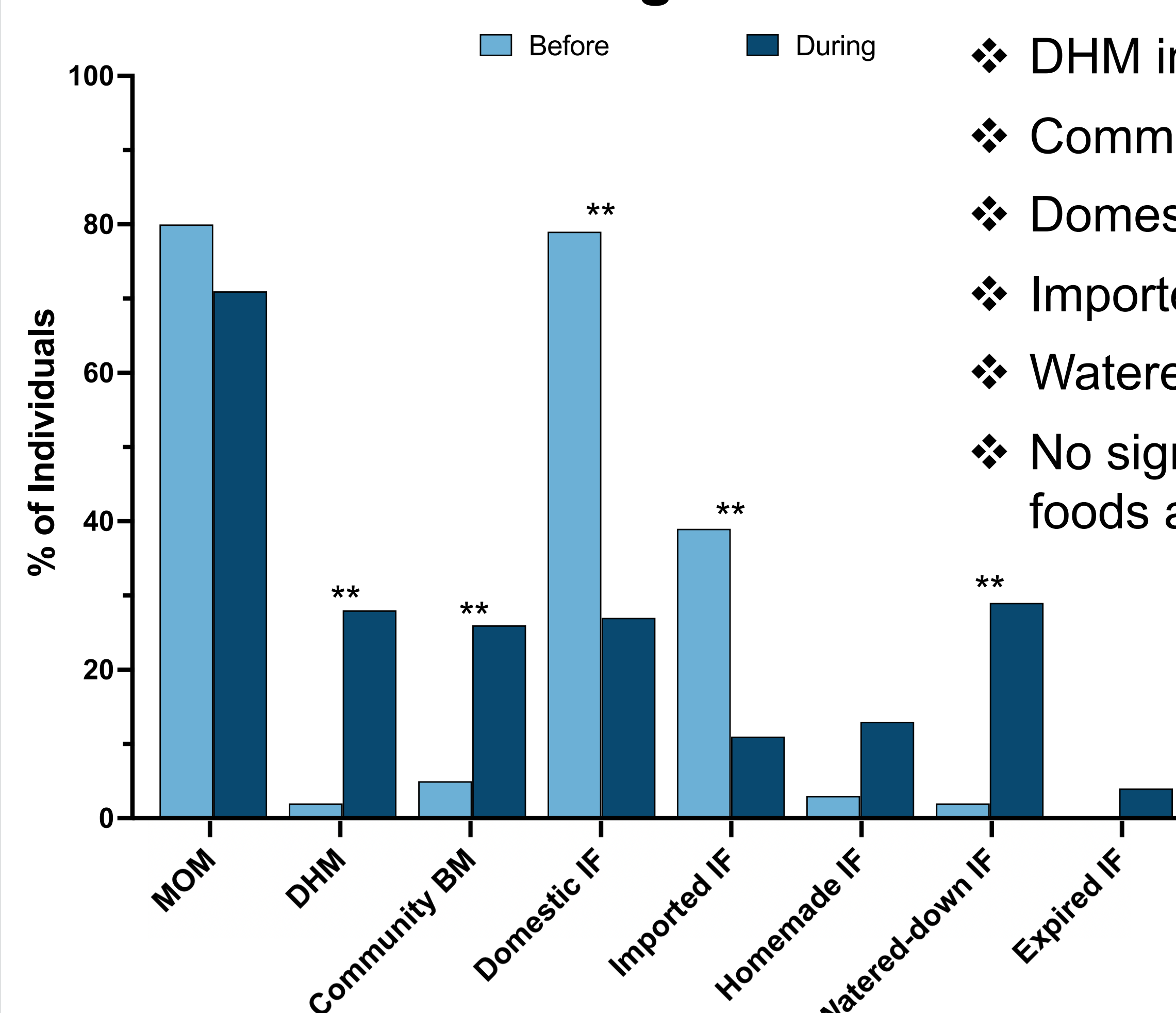
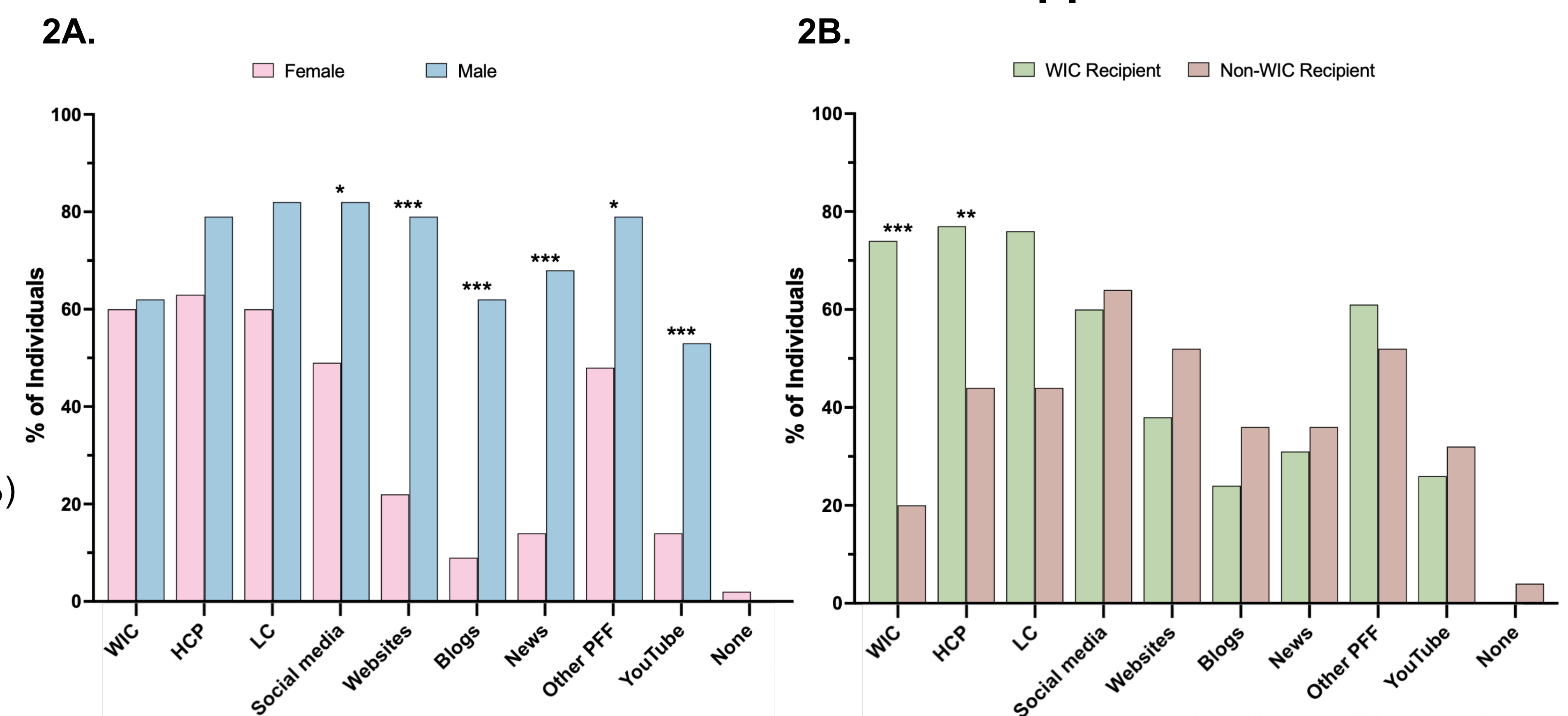


Figure 1. Infant Feeding of Breast Milk and Formula Before and During the Infant Formula Shortage. MOM = mother's own milk; DHM = donor human milk; BM = breast milk; IF = infant formula; ** $p < 0.005$

- ❖ DHM increased 26%
- ❖ Community BM increased 21%
- ❖ Domestic IF decreased 52%
- ❖ Imported IF decreased 28%
- ❖ Watered-down IF increased 27%
- ❖ No significant changes to other foods and beverages

Perceived Guidance and Support



Helpfulness of Available Resources

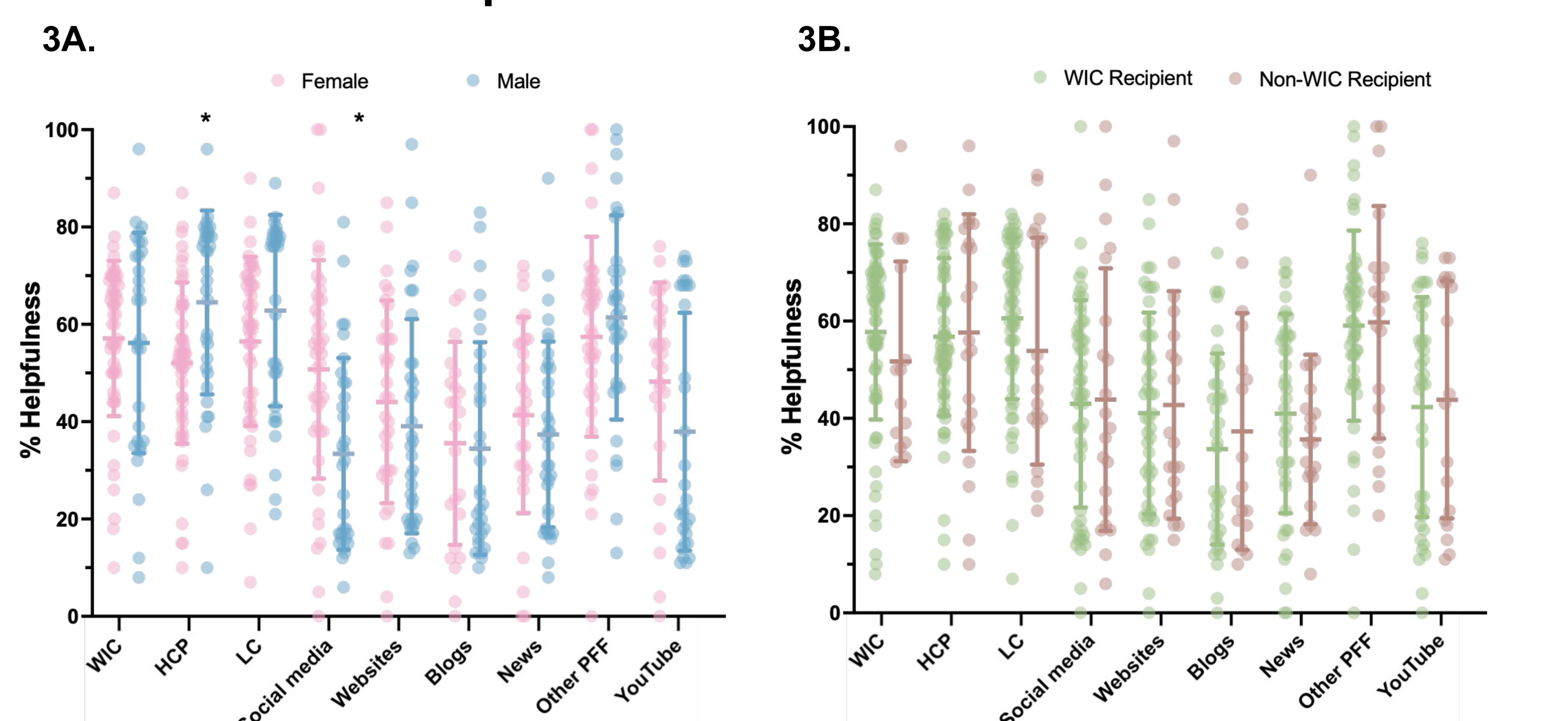


Figure 2. Perceived Guidance and Support for Feeding Infants. A. Sex B. WIC Recipient Status
Figure 3. Ranked Helpfulness of Available Resources on a Scale of 0% to 100% A. Sex B. WIC Recipient Status
HCP = Healthcare providers; LC = Lactation consultant; Websites = Websites by health authorities; Other PFF = Other parents, friends, family. * $p < 0.05$, ** $p = 0.05$, *** $p < 0.005$

Conclusions

- ❖ Parents participated in practices that pose nutritional and safety risks: community sharing of breast milk and watering-down infant formula.
- ❖ Parents obtained guidance and support from healthcare providers, lactation consultants, WIC, social media, and other parents, friends, and family. However, the helpfulness of these resources was inadequate (<60%).
- ❖ There is a need for policy changes within regulatory and healthcare systems to reduce infant food insecurity and improve lactation education.

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