

# ASSESSING MATERNAL KNOWLEDGE OF NEWBORN DANGER SIGNS & OPTIMAL BREAST FEEDING PRACTICES IN KUMASI, GHANA

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## INTRODUCTION

Each year, more than 15 million babies across the globe are born prematurely. Over 1 million die in their first month of life and several sustain lifetime impairment [1]. A recent World Health Organization estimate states that the burden of preterm birth is highest in low-income countries, especially those in Sub-Saharan Africa [5]. Komfo Anokye Teaching Hospital (KATH) is the second largest teaching hospital in Ghana and provides tertiary care to the entire central and northern sectors of the country. **Almost 2,600 babies born at KATH each year die before reaching their eighth day of life** [2]. These deaths are primarily a result of preventable causes such as oxygen deprivation, prematurity, and infection. What is particularly unsettling about these unacceptably high mortality rates is that they occur in a large teaching hospital with 16,000 annual deliveries [2]. Implementing region-specific healthcare interventions is crucial to improving the health outcomes of central and northern Ghana's next generation.

Early recognition of newborn health risks by immediate caregivers is essential to reducing the number of neonatal deaths due to treatable causes. Additionally, breast feeding plays a major role in the health, development, and survival of newborns [3]. **Breast fed children have at least six times greater chance of survival in the first stage of life than children who are not breast fed** [3]. Additionally, there are significant benefits to exclusive breast feeding: feeding infants only breast milk (no other liquids or solids) for the first 6 months of life [3]. **Optimal breastfeeding for infants has the potential to prevent 800,000 child deaths and 20,000 maternal deaths yearly** [4].

This study was aimed at determining maternal knowledge of newborn health risks and optimal breast feeding practices at Komfo Anokye Teaching Hospital in Kumasi, Ghana.

## METHODS

Mothers at any stage in their pregnancy or within 2 weeks of spontaneous vaginal delivery or C-section were recruited in the antenatal and postnatal wards of KATH via a convenience sampling technique. Structured questionnaires were administered to mothers through in-person interviews. Mothers were asked about several socio-demographic characteristics, pregnancy history, current pregnancy complications, and their plans for both exclusive and complementary breast feeding.

A free recall method was used to assess maternal knowledge of newborn danger signs. Spontaneous responses to the question "When you bring your child home, what serious newborn health concerns would lead you to seek additional medical assistance for your child?" were grouped according to a list of 16 danger signs:

 FEVER	 DIARRHEA
 NOT FEEDING WELL	 EXCESSIVE CRYING
 JAUNDICE	 NOT CRYING
 CONVULSIONS	 CHEST IN-DRAWING
 FAST BREATHING	 UMBILICAL BLEEDING
 VOMITING	 ABDOMINAL DISTENSION
 LOW BODY TEMPERATURE	 NO SPONTANEOUS MOVEMENT
 COUGHING	 SWOLLEN EYES

Some participant responses were recoded to fit into these categories. For example, "hot body" or "high temperature" were recoded as "fever." After the interviews, mothers were educated on the full list of 16 danger signs and advised about optimal breast feeding practices.

## RESULTS

### SOCIO-DEMOGRAPHIC CHARACTERISTICS

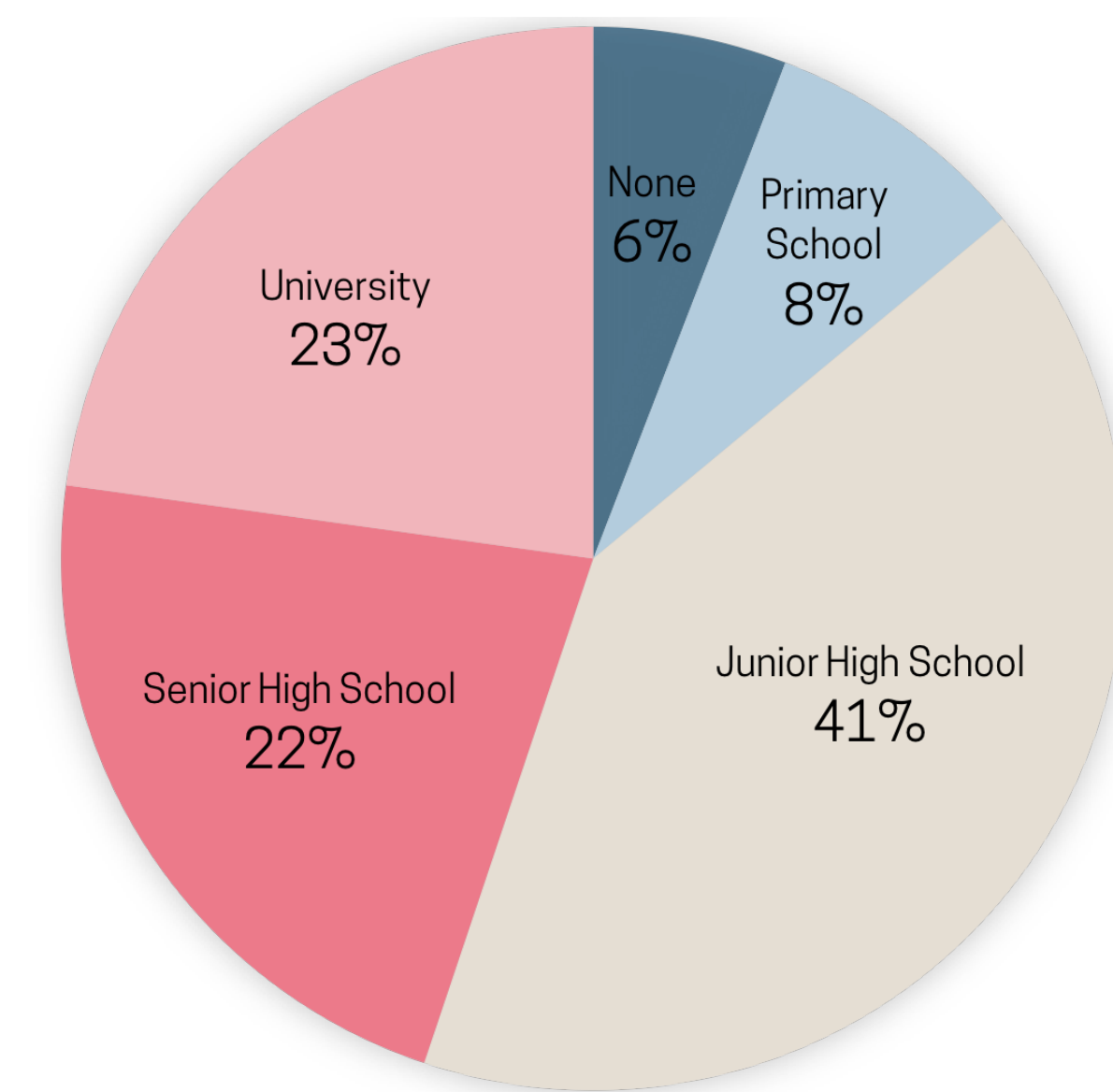
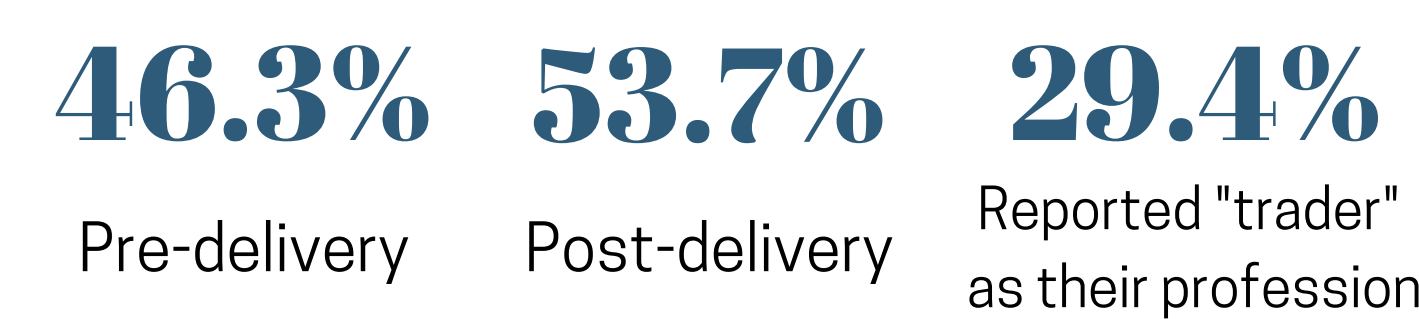


Figure 1. Highest Education Level of Mothers



### DANGER SIGN KNOWLEDGE

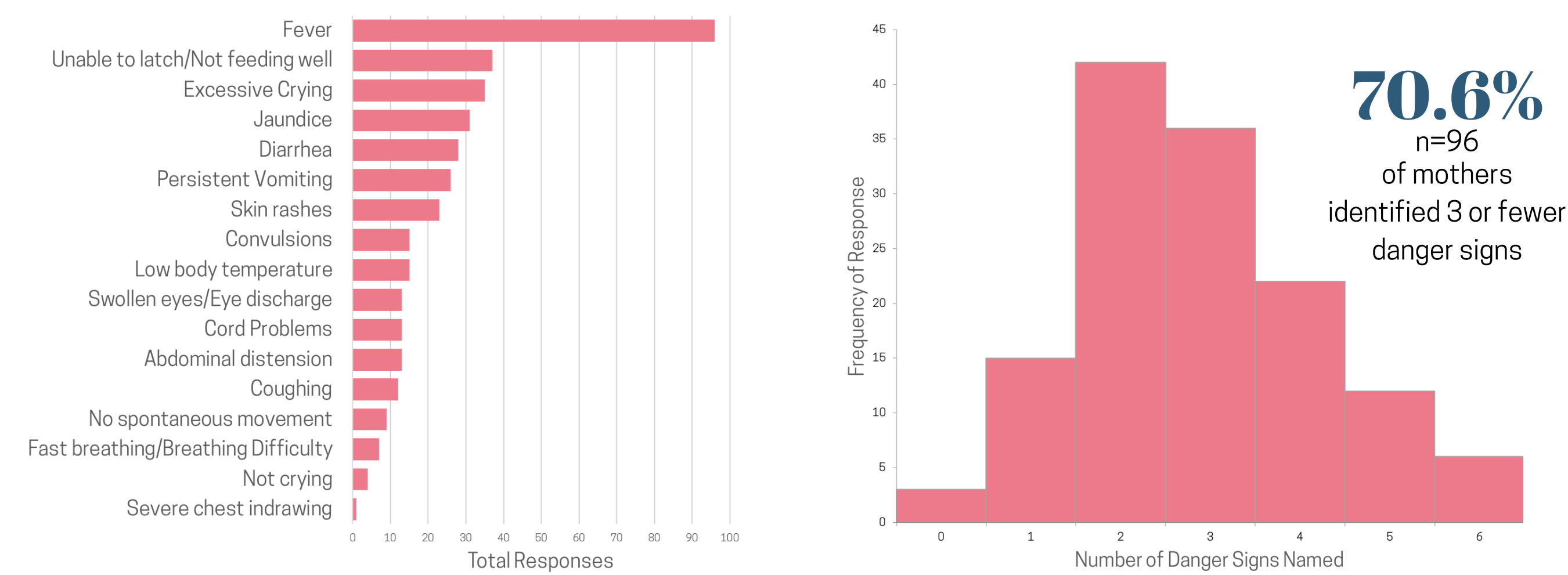


Figure 2. (A) Different neonatal danger signs identified by mothers (B) Distribution of number of danger signs identified

### BREAST FEEDING PLANS

Table 2. Feeding Plans of Mothers

Plans	N	% (of mothers who reported this characteristic)
<b>Exclusive breast feeding<sup>1</sup></b>		
Less than 6 months	12	9.8
6 months	74	60.7
More than 6 months	3	2.5
No plans	25	20.5
Not sure	8	6.6
<b>Complementary breast feeding<sup>2</sup></b>		
Less than 18 months	27	22.5
18 months	28	23.3
24 months	55	45.8
More than 24 months	3	2.5
Not sure	7	5.8

<sup>1</sup> Breast milk only (no additional solids or liquids)  
<sup>2</sup> Adding other liquids and/or foods together with breast milk

Table 1. Socio-Demographic Characteristics of Mothers

Characteristic	N	% (of mothers who reported this characteristic)
<b>Age of mother (years)</b>		
Less than 18	9	6.8
18-35	85	63.9
36-45	39	29.3
<b>Marital Status</b>		
Single (including divorced or separated)	33	24.4
Married	102	75.6
<b>Method of Transport to Hospital</b>		
Public transport	71	52.6
Private car	36	26.6
Ambulance	25	18.5
On foot	2	1.5

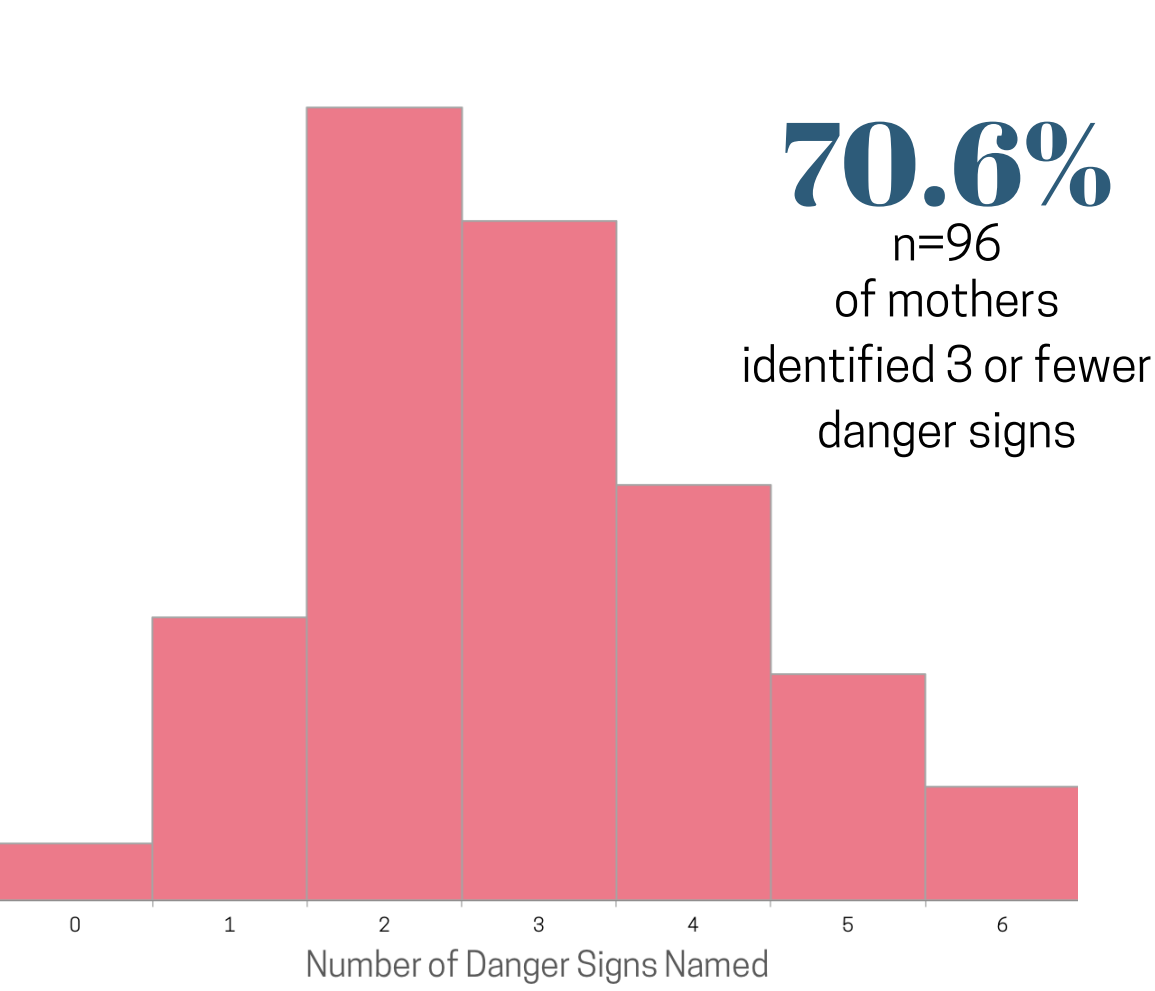


Figure 3. Combined Breast Feeding Plans of Mothers

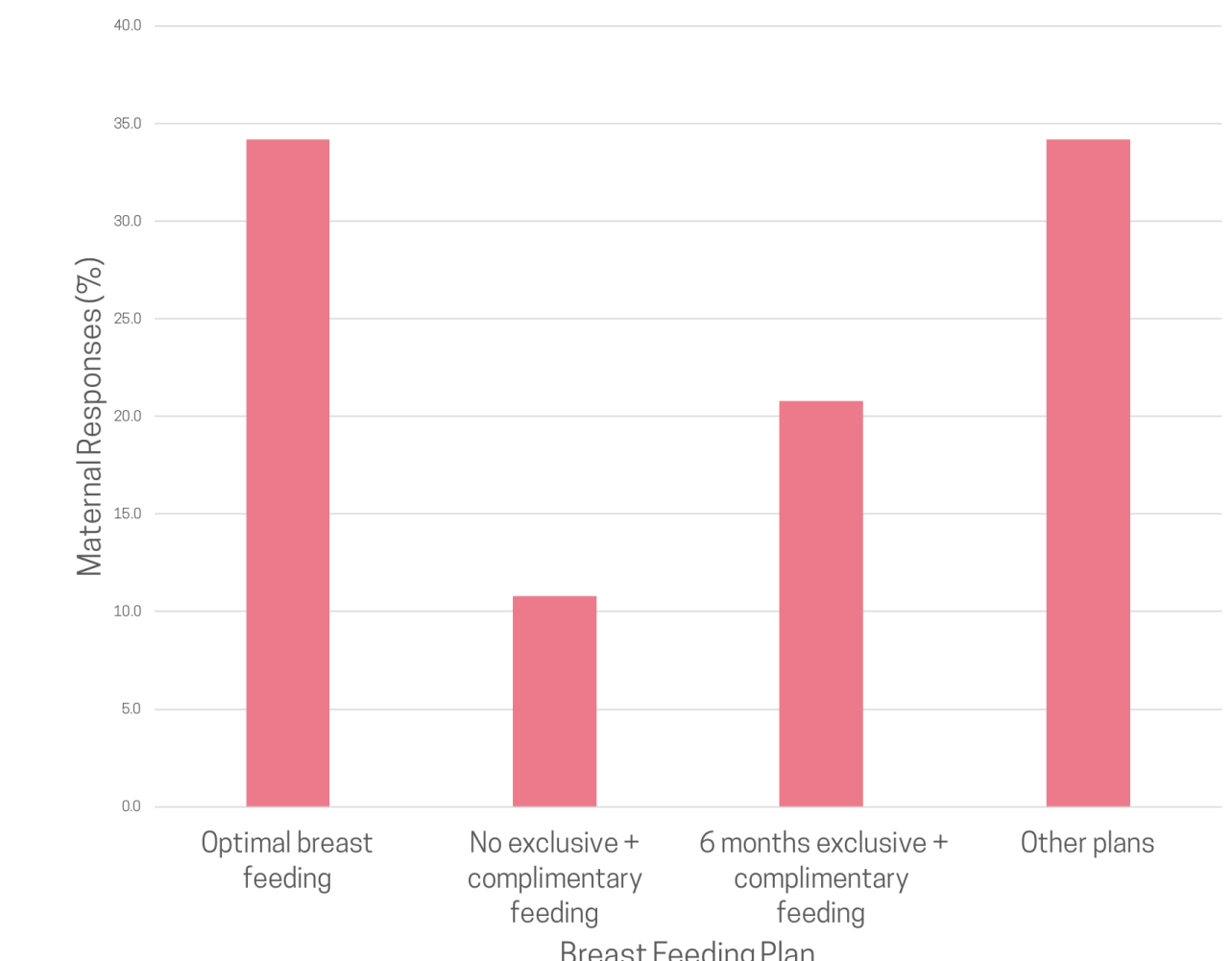


Figure 3. Combined Breast Feeding Plans of Mothers  
Optimal breast feeding = 6 months exclusive + Complimentary feeding up to 24 months

## MORE RESULTS

### MATERNAL BREAST FEEDING ATTITUDES

The quotes below are from mothers who shared their rationale for their respective breast feeding plans. Some of these quotes are rough English translations for responses in Twi (a local dialect of Ghana).

"If my child enjoys supplementary feeds, then I'll continue. If they don't seem to like them, then I will only give breast milk."

"Breast milk alone will not be enough to satisfy my child."

"I will only exclusively breast feed for 3 months because I have to return to work."

"I will give my baby solid food because I want my child to grow very big; She will become thirsty so I will also have to give her water."

## DISCUSSION

Prenatal and postnatal mothers at Komfo Anokye Teaching Hospital had good knowledge of a few individual newborn danger signs, but poor knowledge of multiple signs. "Fever" was the most commonly named danger sign and was referred to by 70.6% of mothers. Other commonly identified newborn danger signs were "not feeding well," "excessive crying," and "jaundice" (27.2%, 25.7%, 22.8%, respectively). **Despite common identification of key danger signs, most (70.6%) mothers were only able to name 3 or fewer signs.** These results indicate a significant maternal knowledge gap in many serious newborn health risks.

Based on the breast feeding plan data, mothers have misconceptions about exclusive breast feeding and few mothers have plans to follow optimal breastfeeding practices. **Though many mothers (60.7%) planned to exclusively breast feed, only 34.2% reported plans to practice optimal breast feeding** (i.e. a combination of 6 months of exclusive breastfeeding and up to 24 months of complementary feeding). Additionally, several mothers expressed misconceptions about exclusive breastfeeding such as the idea that breast milk alone is insufficient nutrition for their newborn.

**Based on the observed maternal knowledge gaps and misconceptions, future research should continue to focus on developing effective educational tools for mothers in resource-limited communities such as Kumasi, Ghana.** As more immediate caregivers are properly educated on newborn health risks, encouraged to practice optimal breastfeeding, and informed on the risks of mixed feeding practices, they will be better prepared to preemptively identify neonatal health risks and seek further medical assistance if necessary.

## WORKS CITED

- Blencowe, H., Cousens, S., Chou, D., Oestergaard, M., Say, L., Moller, A., ... Lawn, J. (2013). Born Too Soon: The global epidemiology of 15 million preterm births. *Reproductive Health*, 10(Suppl 1). doi:10.1186/1742-4755-10-s1-s2.2. Center for Excellence in Newborn Care at Komfo Anokye Teaching Hospital (KATH): A Resource for Ghana and West Africa. (2009). Kwame Nkrumah University of Science and Technology. 3. Exclusive breastfeeding for optimal growth, development and health of infants. (2019, February 11). Retrieved from [https://www.who.int/elena/titles/exclusive\\_breastfeeding/en/](https://www.who.int/elena/titles/exclusive_breastfeeding/en/). Lancet, T. (2016). Breastfeeding: achieving the new normal. *The Lancet*, 387(10017), 404. doi: 10.1016/s0140-6736(16)00210-5. Preterm birth. (2018). Retrieved from <https://www.who.int/news-room/factsheets/detail/preterm-birth>. 6. World Health Organization. (2018, September 28). Newborns: reducing mortality. Retrieved from <https://www.who.int/news-room/factsheets/detail/newborns-reducing-mortality>

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