

Jalisa Kelly, Research Intern, Nicolas Thor, Neha Sharma, Dr. Xiaozhong Wen, Faculty Mentor

Division of Behavioral Medicine, Department of Pediatrics, Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY

## ABSTRACT

Breastfeeding rates among pregnant women who smoked are significantly lower compared to pregnant women who did not smoke. The best method for feeding infants has consistently proven to be breastfeeding. By getting pregnant smokers to quit we believe that we are not only improving the health of mothers, but we are also setting the stage for a healthier pregnancy, decreasing the risk of the negative effects of nicotine on fetal development. Our research employs data from the UB Pregnancy and Smoking Cessation study, which uses multiple component interventions to guide pregnant smokers on the journey to quit. Survey use before and after smoking cessation; showcases the change in intent to breastfeed in a sample size of 36 women. With our research it is proven that smoking cessation plays a role in increasing the intention of previously pregnant smokers to breastfeed.

## INTRODUCTION

Smoking while pregnant has devastating health consequences not only for the mother but also the developing fetus. Some of the consequences for fetal development include:

- Low birth weight
- Respiratory problems
- Increased rate of Sudden Infant Death Syndrome (SIDS)
- Increased probability of birth defects



Fig.1: Shows a pregnant mother smoking.

By getting our sample size to quit we are hoping to reduce the occurrence of these negative health effects in order to improve the health of future generations. Not only will smoking cessation aid in fetal development, but by increasing the intent to breastfeed, we increase the chances of the positive effects of breast milk being passed down to the fetus. One of those being the transfer of antibodies, which aids in building the immune system of young infants against disease.



Fig.2: A mother breastfeeding her infant.

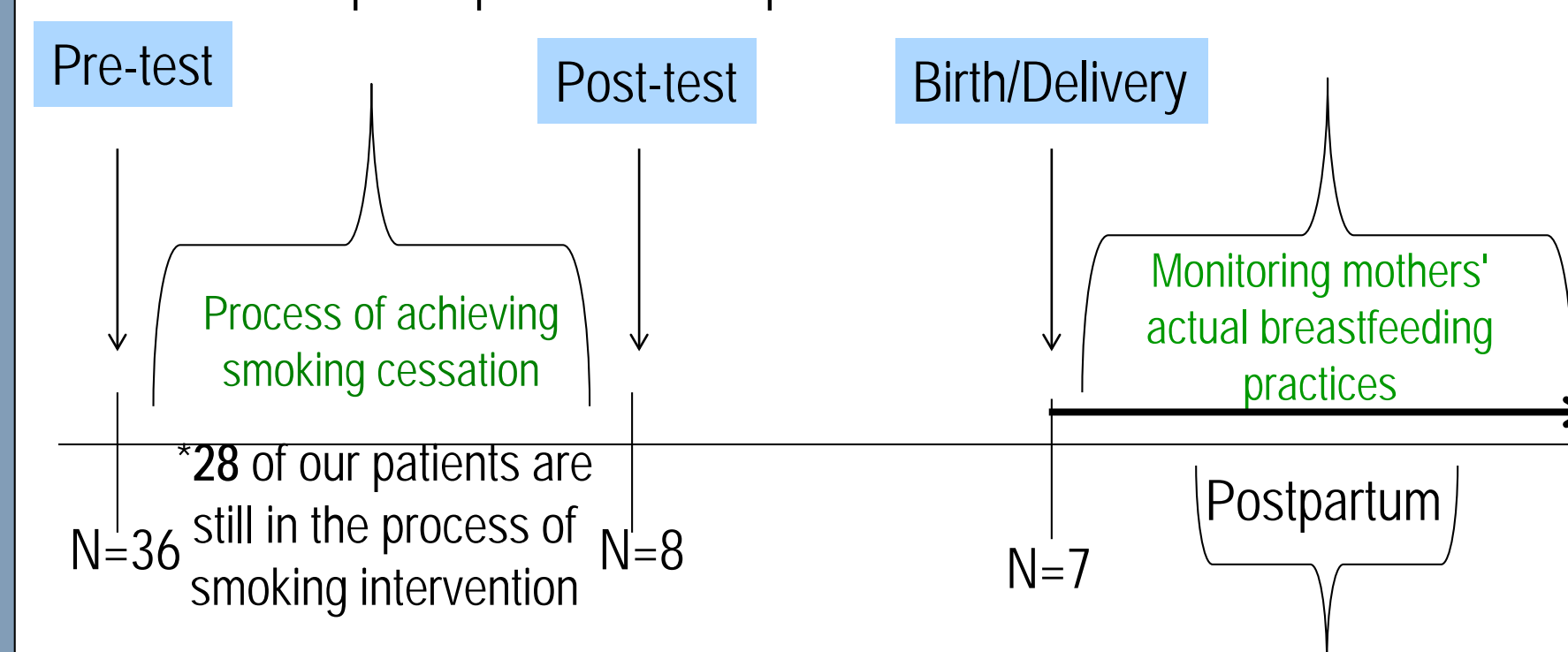
## AIMS

Our study has three main aims:

1. **Pre-test phase:** Serves as a baseline in order to gauge the initial knowledge and intent of our participants.
2. **Pretest vs. Post-test phase:** This aim looks to see the actual change in the variable in question (intent) before and after smoking cessation is achieved.
3. **The Post-Delivery phase:** This aim looks to see if the intent of our participants was followed by the actual practice of breastfeeding.

Table 1: Research process

N= Number of participants in each phase



## HYPOTHESIS

We expect the achievement of smoking cessation to play a role in increasing the intent to breastfeed in pregnant smokers. These three aims all contribute to our overall goal of improving infant health through the promotion of breastfeeding.

## METHODS

To test for smoking cessation and to ensure our patients are on the path to quitting, we employ two tests:



Fig. 3: Breath Carbon Monoxide (CO) test gives the concentration of CO in mothers as well as fetal hemoglobin CO levels.

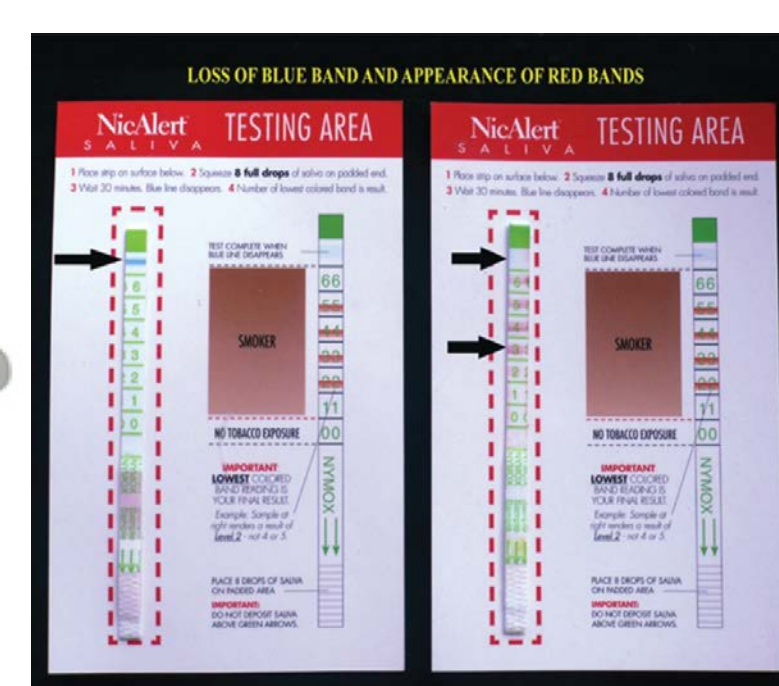


Fig 4: Urine cotinine test. Urine samples are obtained from patients and measured for cotinine. Levels from 0-2 indicate a non-smoker and levels from 3-6 indicate a smoker.

## METHODS CONTINUED

For our research we took a more qualitative approach by employing the use of surveys for our pretest and post-test phase. These surveys specifically ask about smoking and breastfeeding as well as feeding plans. There were three categories in which the questions we asked fit into, here they are as follows:

### General Breastfeeding Knowledge Questions (scale of 1=strongly disagree to 5=strongly agree)

- Infant formula is as good as breast milk
- If a baby is breastfed, he or she will be less likely to get ear infections
- If a baby is breastfed, he or she will be less likely to get diarrhea
- Babies should be exclusively breastfed for the first 6 months.
- If a child was breastfed, he or she will be less likely to become obese.

### Smoking and Breastfeeding Knowledge Questions

- Do you think it is better for the baby if a mother smokes before or after she breastfeeds?
- Do you think that nicotine gum lets more, less or about the same amount of nicotine get into breast milk than smoking a pack of cigarettes per day?
- Do you think that the nicotine patch lets more, less or about the same amount of nicotine get into breast milk than smoking a pack of cigarettes per day?

### Intention questions

- What method do you plan to use to feed your new baby in the first few weeks? (Do you plan to exclusively breastfeed your baby?)
- How old do you think your baby will be when you first feed him or her formula or any other food besides breast milk?

## RESULTS

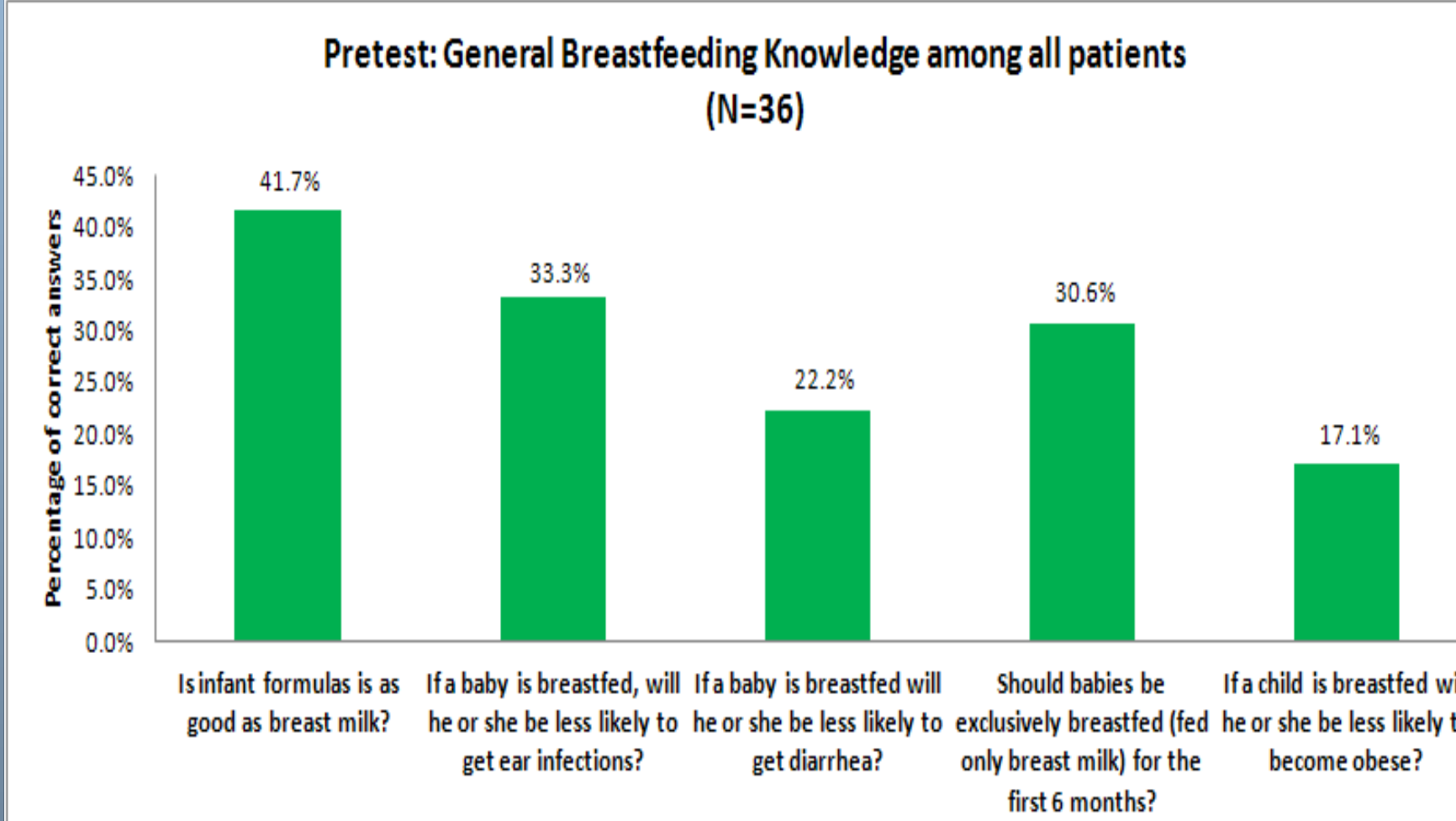
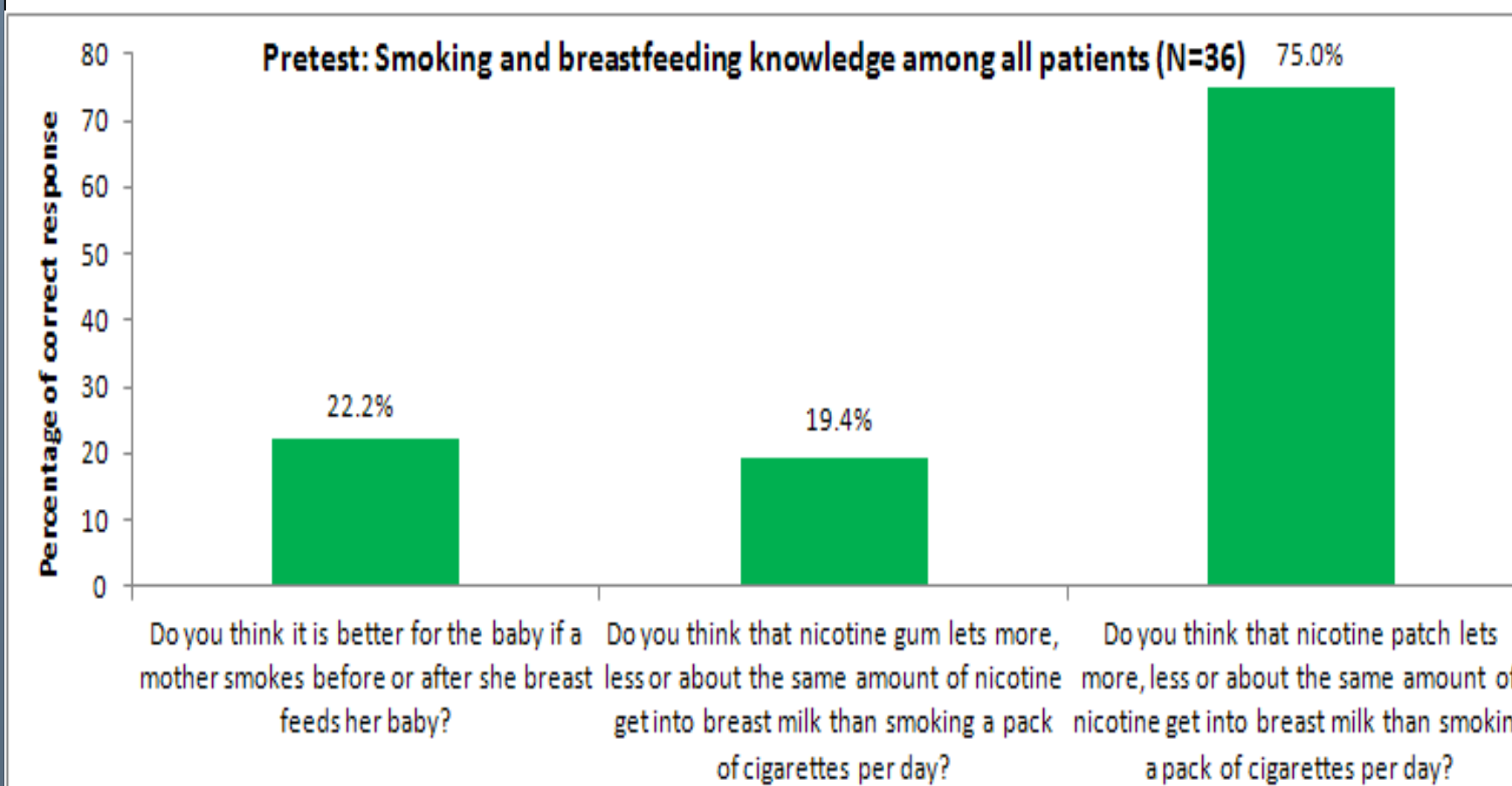


Fig 5 & 6: Our results show less than 50% of our sample answered each question correctly.



## RESULTS CONTINUED

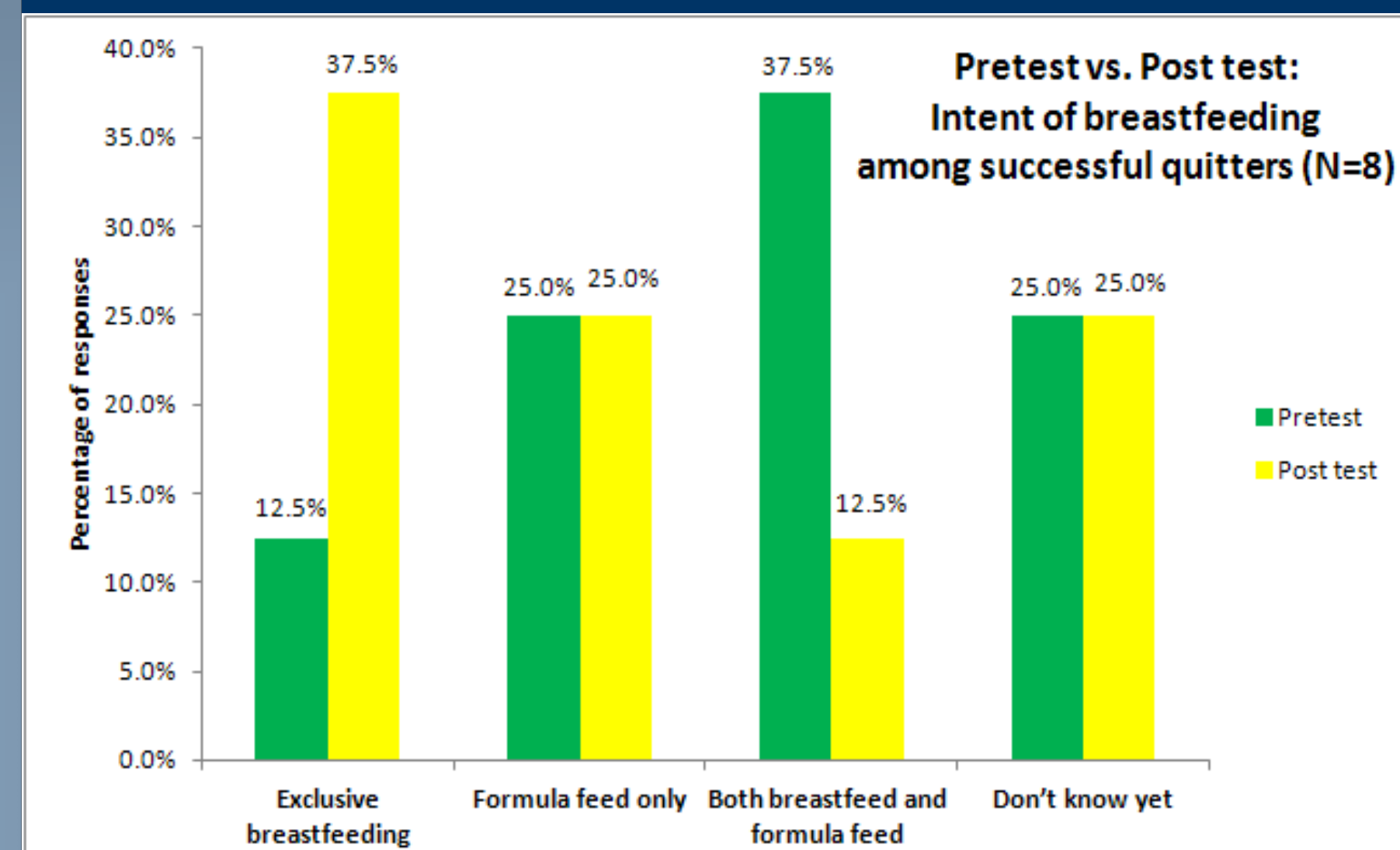


Fig. 7: Shows a shift of 25% of our patients from an intent to mix feed (both breastfeed and formula feed) to exclusively breastfed from the pretest to the post-test phase.

## CONCLUSION

Based on our research smoking cessation plays a role in increasing the intent to exclusively breastfeed amongst smoking pregnant women. We believe that this is due to our participants feeling as if they are leading healthier lives and that they are able to provide for their babies through breastfeeding because they have quit smoking. Our study also shows that general breastfeeding knowledge is higher in women who have expressed the intention to breastfeed compared to those who have chosen to formula-feed. At this point in time our study is ongoing and continues to enroll new participants. This small sample size is not enough to be truly representative of an entire population, as time goes on we hope to gain further results, and understand further trends with a larger sample size.

## FUTURE WORKS

We will update results with the current sample (data analysis presented here was done in 2016 Summer). As an extension of our research, we hope to develop an educational plan regarding breastfeeding that will increase the intention of pregnant smokers to exclusively breastfeed.



Fig.8: A pregnant mother being educated about breastfeeding.

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