

# Procedural pain management practices in Ontario neonatal units

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## Introduction

Healthy newborns experience at least one **painful procedure**. There is extensive high quality evidence on the pain reducing effects of **breastfeeding**, skin-to-skin (**kangaroo care**) and oral **sucrose** during painful procedures in neonates:

- **Breastfeeding** during heel lance and venipuncture significantly reduced heart rate changes and crying time compared to holding in mother's arms, swaddling, non-nutritive sucking, water or no intervention<sup>1</sup>.
- **Kangaroo care** during heel lance, venipuncture and injections reduced crying, pain scores and heart rate compared to holding in mother's arms, swaddling, non-nutritive sucking, water or no intervention<sup>2,3,4</sup>.
- **Sucrose and glucose** in a variety of doses, (few drops to 2 mL) decreased crying and pain scores during and/or following painful procedures of short duration such as heel lance or venipuncture<sup>5-9</sup>.

Despite this evidence, surveys conducted in Canada and internationally show that these strategies are not used consistently in neonatal settings.

The objectives of this study are to: i) determine the current neonatal pain management practices in Ontario, and ii) ascertain barriers that limit the use of the recommended interventions



## Methods

Between July 2013 and September 2013 an electronic survey using REDCap was distributed to 91 neonatal and maternal-newborn units in Ontario. The response rate was 46%.

The survey contained ten questions focused on the frequency of utilization of breastfeeding, skin-to-skin care, and oral sucrose during the painful procedures of heel lance and venipuncture.

Data was analyzed using descriptive statistics.

## Results

### Use of Breastfeeding (BF)

- 26% of respondents report never using BF during heel lance, 54% use BF occasionally, 20% report using it often and 0% report always using it.
- 76% state never using BF during venipuncture, 19% report an occasional use

### Use of Kangaroo care (KC)

- 33% of neonatal units often use KC with the mother as a pain management during heel lance, 44% occasionally use this strategy and 23% of respondents state they never use this strategy during heel lance.
- 22% of units report occasional use of KC during venipuncture, 76% reported never using this strategy.

### Use of Sucrose

- 20% of respondents always use sucrose for pain management during heel lance procedures. Almost 50% state never using sucrose and 15% report often or occasional use.
- 16% of respondents reported always, occasionally or often using sucrose during venipuncture and 51% said never.

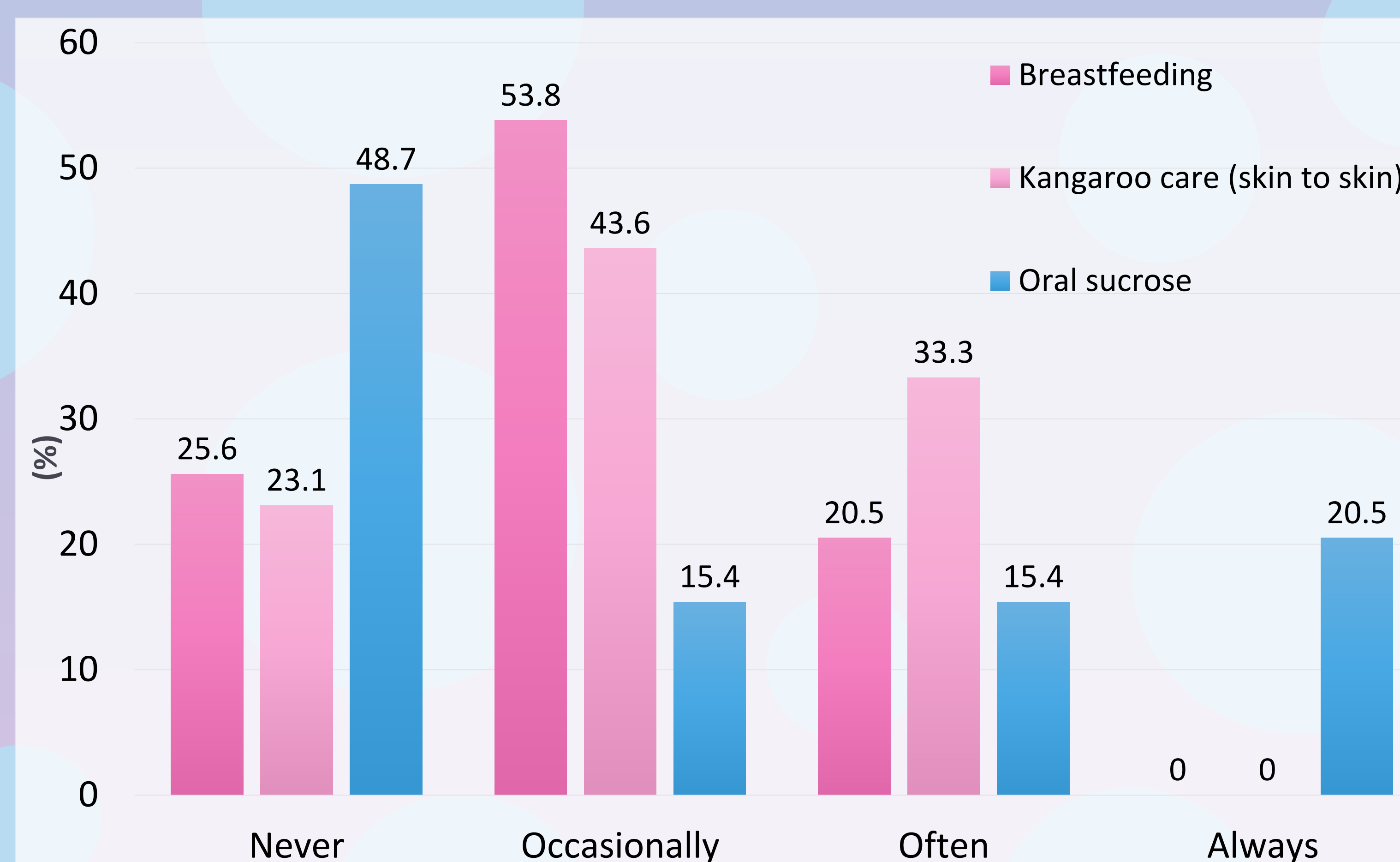


Figure 1. Use of pain management strategies during heel lance

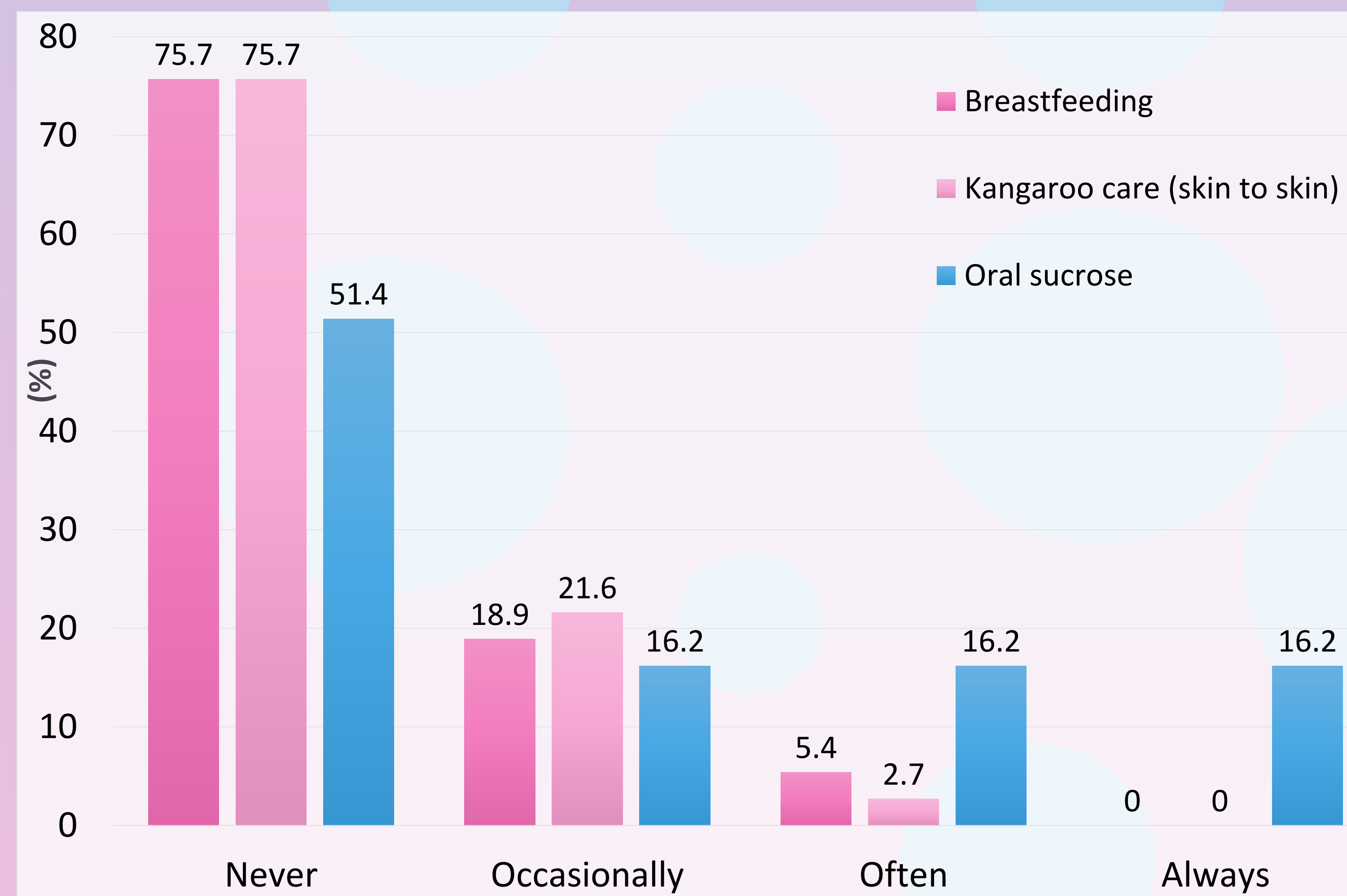


Figure 2. Use of pain management strategies during venipuncture.

## Discussion

Results of this study inform us about the utilization of pain management strategies during painful procedures. After analysis of the recovered data, survey results show:

- The use of the three pain management strategies is more common during heel lance than during venipuncture.
- Sucrose was the most commonly used pain management strategy used during venipuncture.
- Breastfeeding is the least employed of the three strategies.

There is limited or inconsistent use of the three pain management strategies despite substantial research evidence of their effectiveness.

To ascertain barriers that limit the use of the three strategies, a qualitative content analysis will be conducted.



## Conclusions

This research determined that the three pain management strategies are being used inconsistently throughout neonatal establishments. There is a need for knowledge translation projects to improve use of research evidence in clinical practice.

The results of this survey will inform the development and implementation of knowledge translation interventions, and ultimately reduce pain in infants undergoing painful procedures.

## Acknowledgments and References

