

# Limited Caregiver Movement Guidelines During COVID-19: Effects on Neonatal Abstinence Syndrome (NAS)

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## Introduction

- **NAS** is a multi-systemic disorder that results in symptoms of the CNS, GI system, and autonomic manifestations due to abrupt cessation of chronic in-utero exposure to substances at birth.
- **Best practice** in the assessment and treatment of NAS includes the use of developmental care.
- **Developmental care** interventions includes practices such as keeping the mother-infant dyad together, skin-to-skin contact, gentle vertical rocking and swaying, containment through being held and swaddled, and decreasing stimuli through room-darkening and quieting the surroundings.
- During the COVID-19 pandemic, **policy change limited the ability for caregivers (parents) to leave the nursing unit**, thus parental involvement in developmental care was more attainable
- **Nursing staff** identified this change in practice may have resulted in better neonatal outcomes; including decreased need for morphine treatment.

## Purpose

To determine if limiting caregiver movement during COVID-19 influenced:

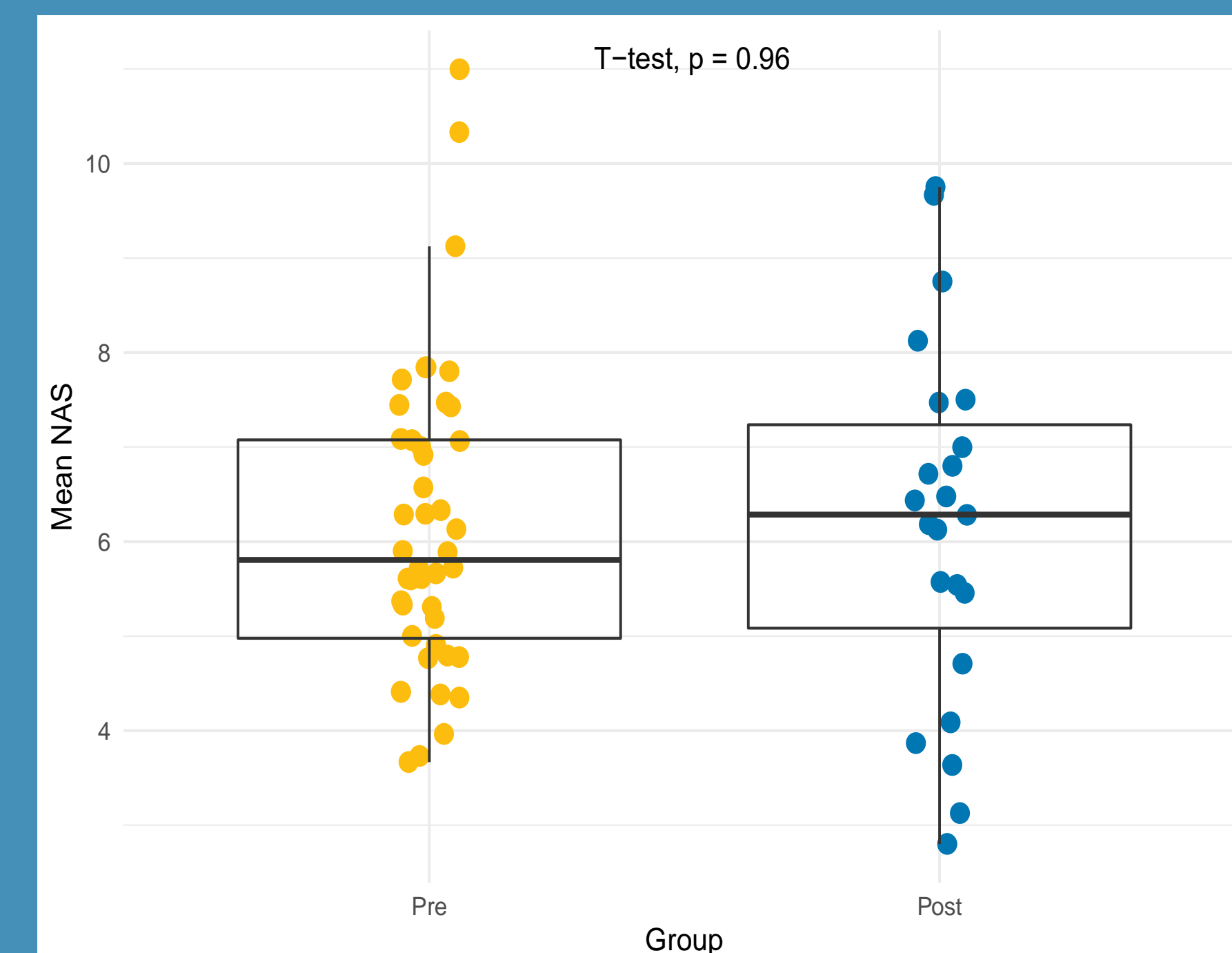
- 1) NAS scores;
- 2) Admission to the NICU for NAS treatment; and,
- 3) Length of stay (LOS) on the Maternal Newborn Unit.

## Participants

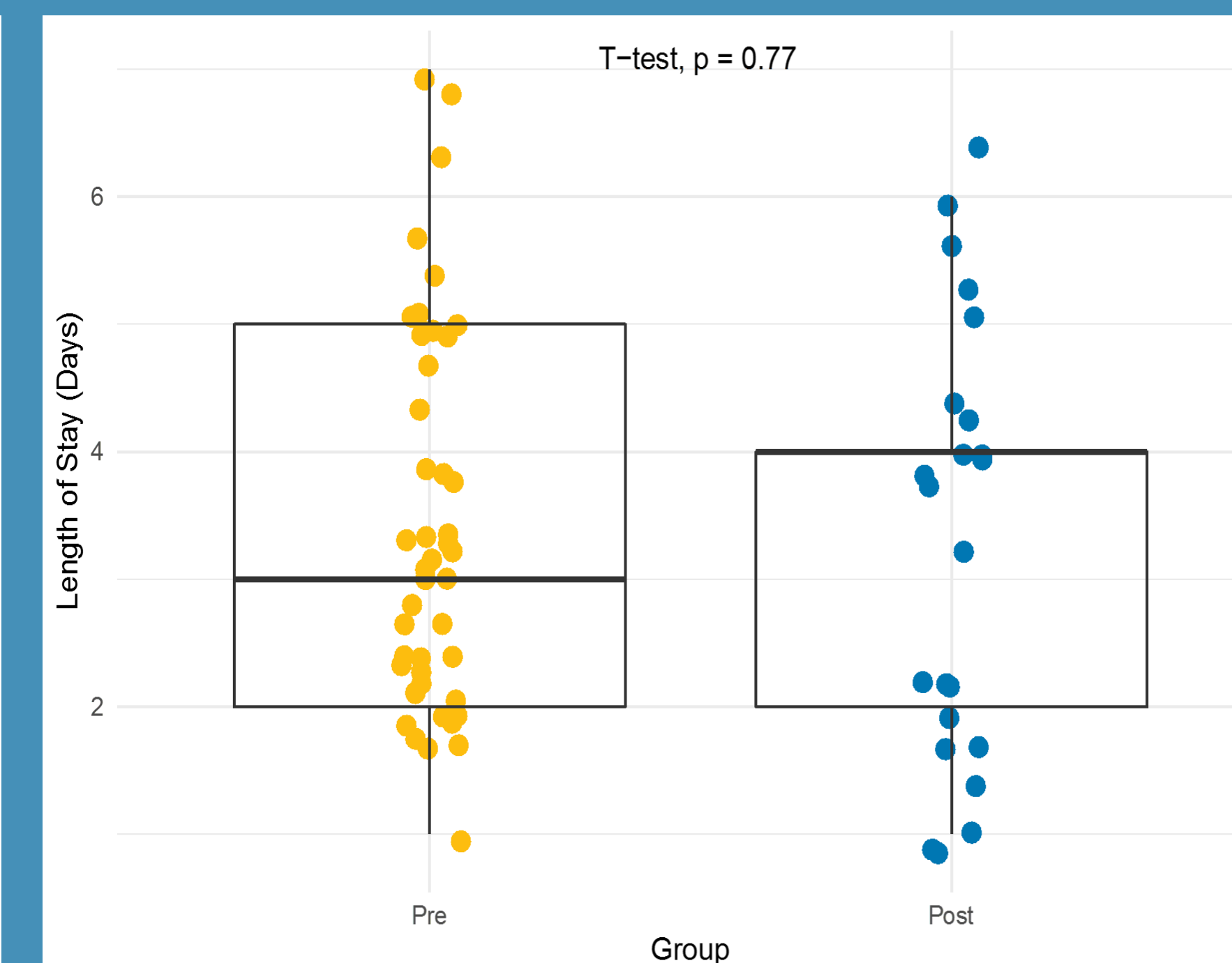
Recruitment inclusion criteria included:

- Newborns admitted to Maternal Newborn Unit at birth
- Newborns being assessed for NAS
- Newborns born within the study timeframe

Mean NAS Scores per Group

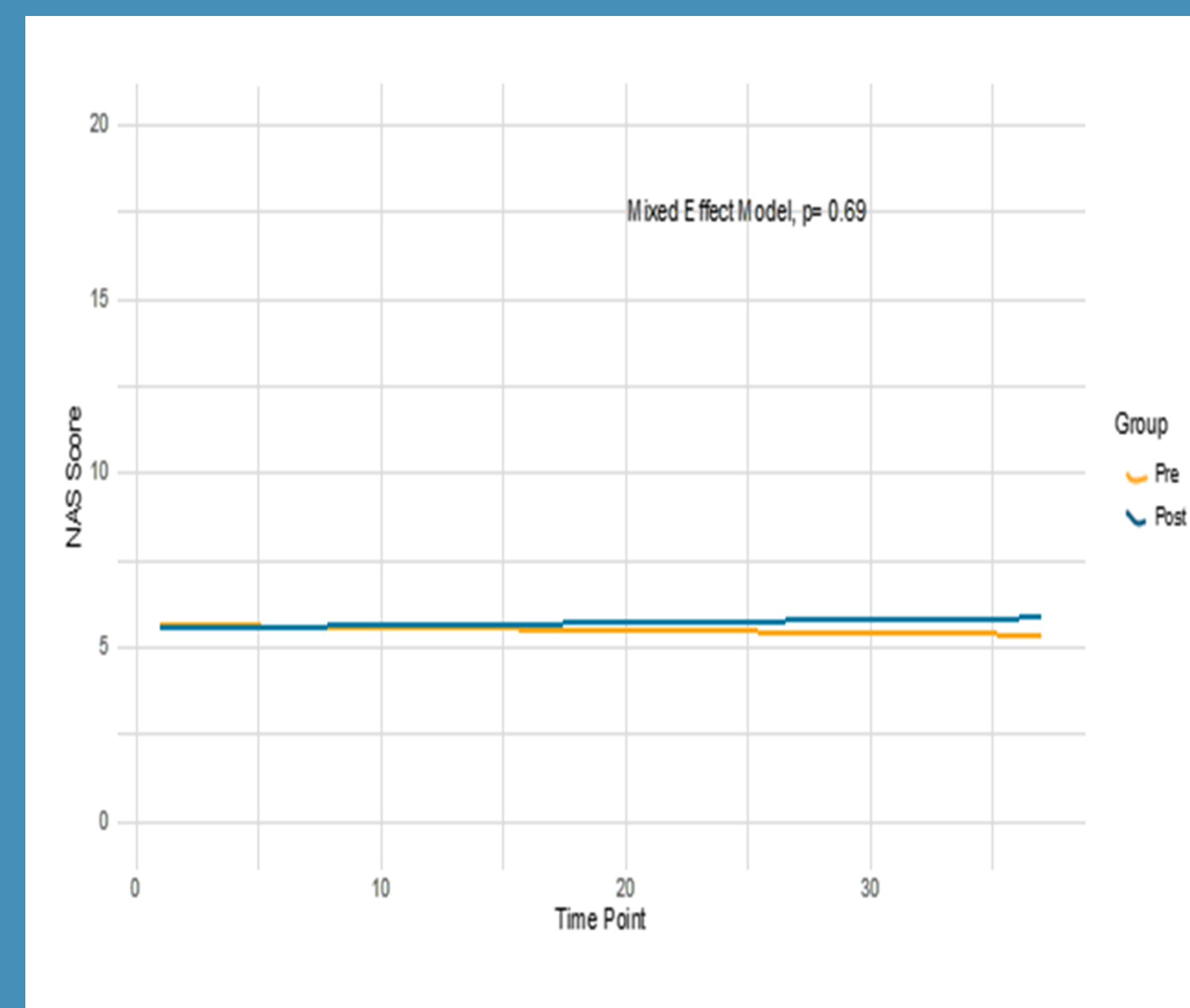


Mean Length of Stay per Group



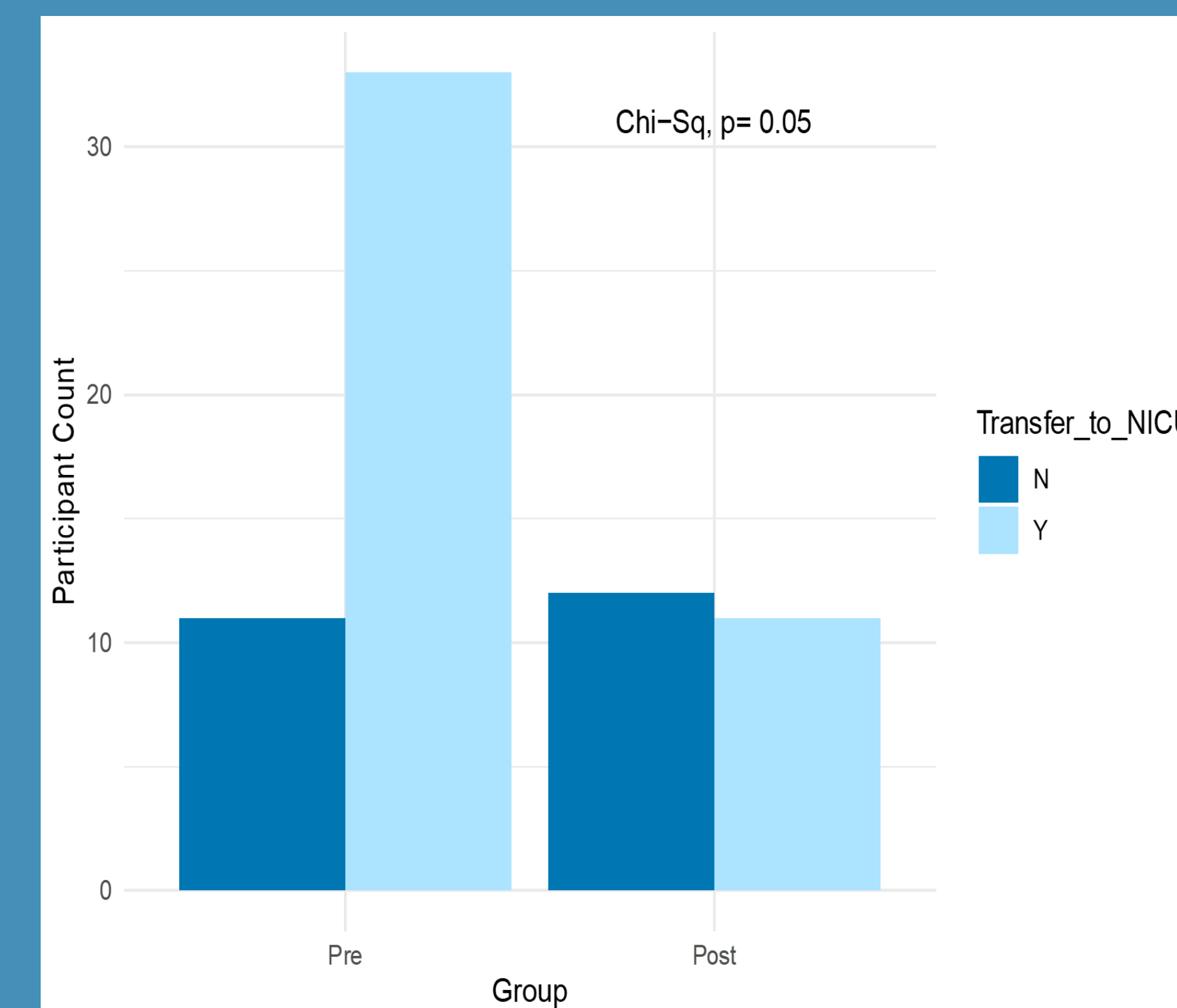
There was no significant difference found in mean NAS scores or length of stay across pre or post groups, as tested by t-tests.

Mean NAS Scores Overtime per Group



There was no significant difference between NAS scores when accounting for time and group, as tested by linear mixed effect model.

Transfers to NICU per Group



The number of NICU transfers in the pre group was significantly higher than in the post group, as tested by a Chi-Squared test. This outcome, however, may be impacted by the larger cohort size of the pre group (n=44) in comparison to the post group (n=23).

## Methods & Data Analyses

**Retrospective cohort chart review** of newborns assessed for NAS; comparing mean NAS scores, transfer to NICU for NAS treatment, and LOS on the Maternal Newborn Unit between the pre-group (n = 44) from April 2, 2019 to April 1, 2020 and the post-group (n = 23) from April 2, 2020 to April 2, 2021.

Demographic and confounding variable data were collected to determine homogeneity of the pre and post groups.

Statistical analyses included:

- Levene's test to determine homogeneity of variance.
- T-test to determine homogeneity amongst the groups.
- T-test on the mean NAS scores and length of stay of newborns across groups.
- Linear mixed effects model on NAS scores from the pre-and post groups to measure NAS over time, accounting for confounding variables.
- Chi Squared test to determine differences in the number of newborns transferred to NICU at any point across groups.

## Conclusion

- ✓ **Homogeneity of groups** proven with exception of feeding type, cocaine and cannabinoid use ( $p = <0.05$ ).
- ✓ **Mean NAS scores and LOS** did not decrease.
- ✓ **Transfers to NICU** for NAS treatment decreased.
- ✓ More research is required to determine causal relationships for the decreased transfers to NICU