

# Impact of On-Call Shift Frequency During Pediatric Dental Training on Clinical Preparedness



Tehrani M, Layvey-Tardalo A, Sullivan O

BronxCare Health System, Bronx, NY

## Introduction and Background

On-call duties are a fundamental component of pediatric dental training, exposing residents to high-pressure and complex clinical situations. These experiences support the development of rapid decision-making, problem-solving, communication, and interdisciplinary coordination.

While moderate stress may enhance learning, excessive stress can negatively impact performance. The optimal balance between clinical exposure and stress remains unclear.

### Study Aim:

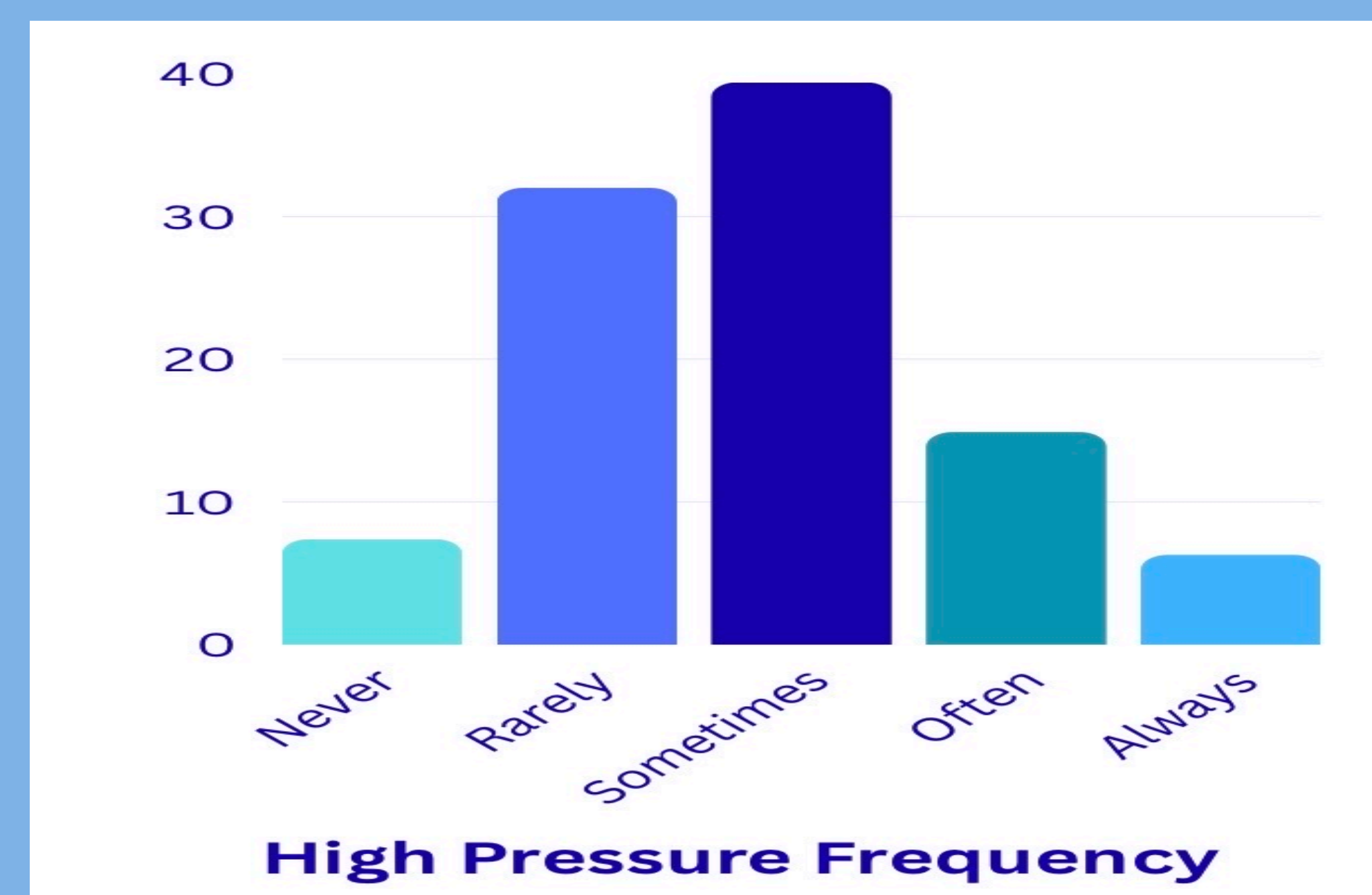
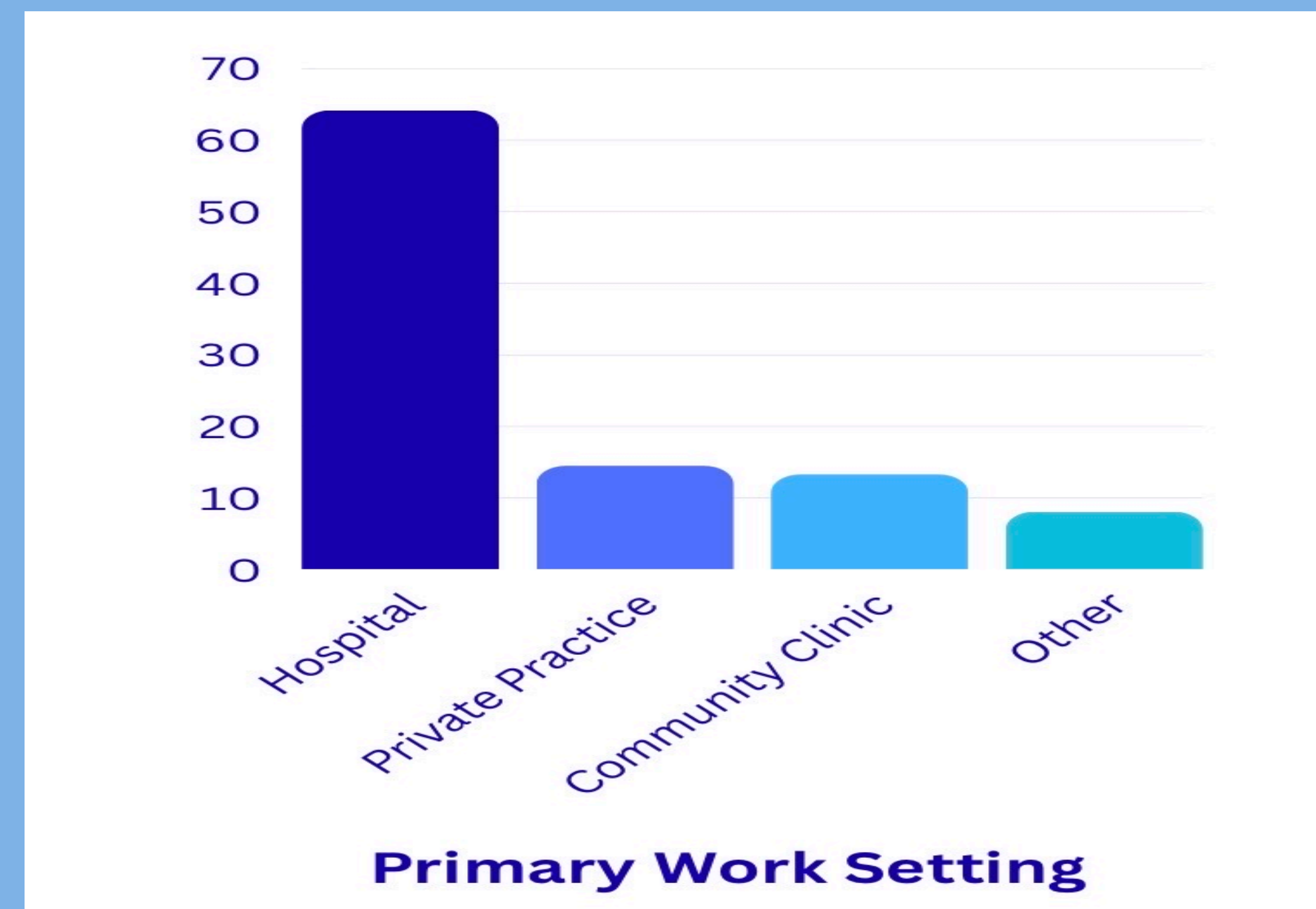
To evaluate the impact of on-call shift frequency on clinical preparedness, confidence, stress management, and skill development among pediatric dental trainees.

## Methods

A cross-sectional survey was conducted among pediatric dental residents and recent graduates using a structured, anonymous online questionnaire. Data were collected on on-call frequency (shifts/month), high-pressure exposure, perceived support, sleep duration, and stress intensity. Outcomes included clinical preparedness, confidence, resilience, and skill development, measured using a 5-point Likert scale.

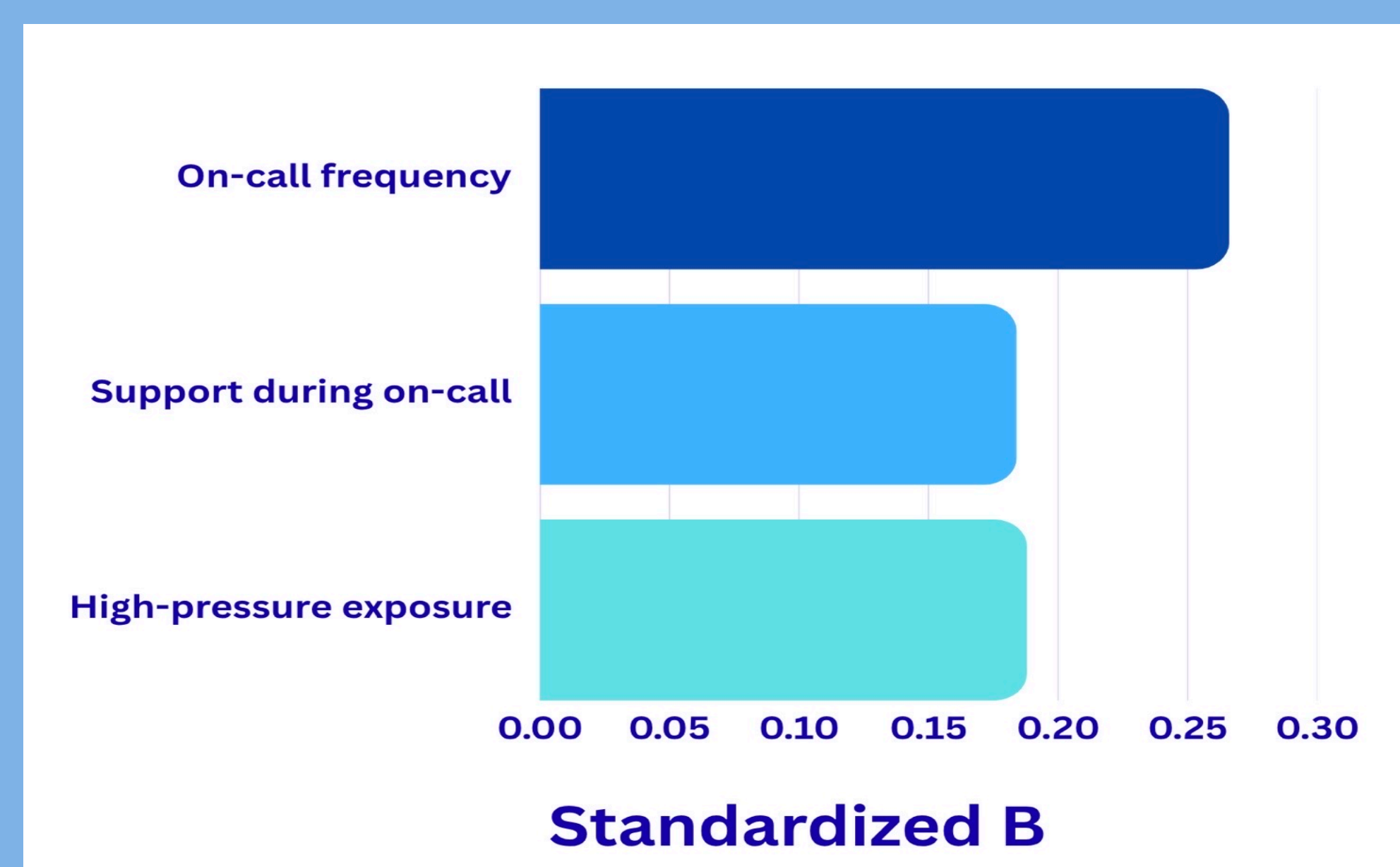
Spearman correlation assessed associations between on-call variables and outcomes. Participants were grouped into low ( $\leq 4$  shifts/month) and high ( $> 4$  shifts/month) on-call frequency, with differences analyzed using the Mann-Whitney U test. Multivariable linear regression identified independent predictors of preparedness. Statistical significance was set at  $p < 0.05$ .

## Charts and Statistics



Variable	B	P-Value
On call Frequency	0.266	<0.001
Support during on-call	0.184	0.0128
High-pressure exposure	0.188	0.0480

## Multivariable Regression Analysis



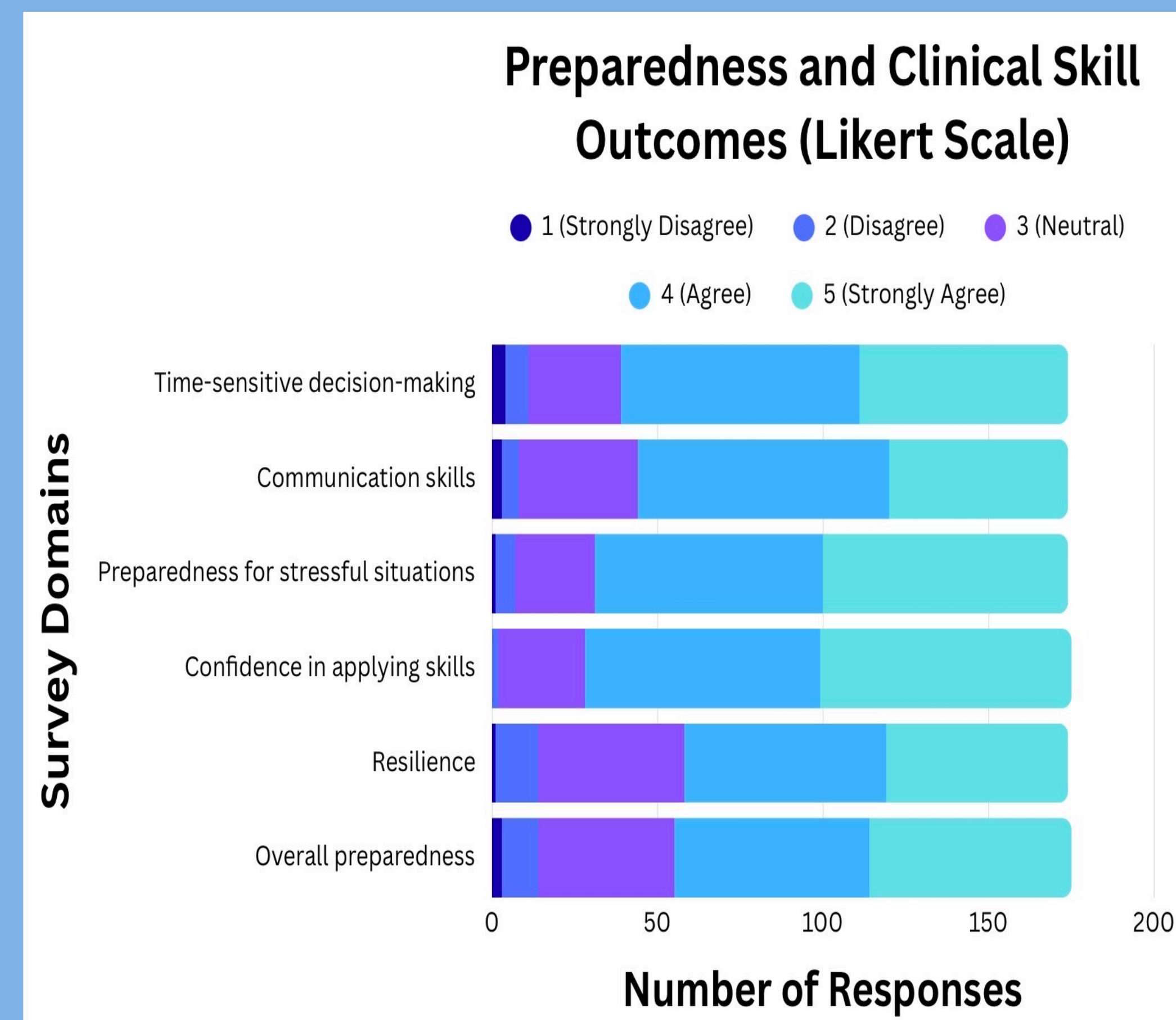
## Results

A total of 175 participants were included, with most reporting moderate to high preparedness and confidence.

On-call frequency was positively correlated with preparedness ( $r = 0.306$ ,  $p < 0.001$ ), confidence ( $r = 0.243$ ,  $p = 0.0012$ ), and stress preparedness ( $r = 0.214$ ,  $p = 0.0047$ ). Perceived support was also significant ( $r = 0.230$ ,  $p = 0.0022$ ).

Participants with  $> 4$  shifts/month showed significantly higher preparedness ( $p < 0.001$ ).

Regression analysis identified on-call frequency ( $\beta = 0.266$ ,  $p = 0.0004$ ), support ( $\beta = 0.184$ ,  $p = 0.0128$ ), and high-pressure exposure ( $\beta = 0.188$ ,  $p = 0.048$ ) as predictors. Sleep and stress were not significant ( $R^2 = 0.158$ ).



Variables	Spearman	P-value
On-call Frequency vs Overall preparedness	0.306	<0.001
On-call frequency vs Confidence	0.243	0.0012
On-call frequency vs Preparedness for stress	0.214	0.0047
Support during on-call vs Preparedness	0.230	0.0022

## Spearman Correlation Analysis

## Conclusion

Higher on-call frequency is associated with improved clinical preparedness, confidence, and ability to manage stressful situations among pediatric dental trainees. Perceived support and exposure to high-pressure cases further enhance preparedness.

Sleep duration and stress intensity were not significant. These findings highlight that increased clinical exposure improves training, but structured support is essential to optimize performance.

**Increased on-call exposure enhances clinical preparedness, but structured support is essential to optimize training outcomes.**

## References(similar articles)

- American Academy of Pediatric Dentistry.
- Guideline on behavior guidance for the pediatric dental patient. *Pediatric Dent.* 2023;45(6):292-310.
- Accreditation Council for Graduate Medical Education.
- Common Program Requirements (Residency). Chicago, IL: ACGME; 2022.
- Yerkes RM, Dodson JD.
- The relation of strength of stimulus to rapidity of habit formation. *J Comp Neurol Psychol.* 1908;18(5):459-482.
- LeBlanc VR.
- The effects of acute stress on performance: implications for health professions education. *Acad Med.* 2009;84(10 Suppl):S25-S33.
- Ericsson KA, Krampe RT, Tesch-Römer C.
- The role of deliberate practice in the acquisition of expert performance. *Psychol Rev.* 1993;100(3):363-406.
- Eva KW.

## Acknowledgement

The authors thank all pediatric dental residents and graduates who participated in this study. We also acknowledge the faculty and staff at Bronx Care Health System for their support and guidance.