

# NICU Admission Impact on Parent Mental Health in Military Families

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## Background

- Admission to the Neonatal Intensive Care Unit (NICU) is associated with acute stress disorder (ASD), postpartum depression (PPD), and post-traumatic stress disorder (PTSD) in parents<sup>1</sup>
- Often no screening or support services are typically offered beyond routine maternal PPD screening
- Mental health disorders in parents have been associated with higher rates of negative long term outcomes in infants<sup>2,3</sup>
- Military families have unique risk factors which may impact the rate of developing ASD, depression, and PTSD following a NICU admission

## Objectives

- To determine the baseline incidence of ASD and depression in military families with an infant requiring prolonged NICU admission
- To determine whether military unique risk factors such as previous combat zone deployments (CZD), prolonged geographic separation (PGS) from family (defined as separation from family for >4 months at any time or >1 month during the pregnancy), and pre-existing PTSD (pPTSD) are associated with higher rates of these mental health conditions

## Methods

- Interim cross sectional analysis of parents after NICU admission from 15Jun2018 through 1Mar2019
- Performed at Brooke Army Medical Center, a single level 3 NICU with large active duty population
- Included all Tricare-eligible infants who required ≥7 days admission to the NICU with English-speaking, literate parents age 18 and older
- Survey administered within first 14 days of admission collecting self-reported demographic data on parent and infant, assessment of military risk factors, and screening for ASD with the Stanford Acute Stress Reaction Questionnaire (SASRQ) and depression with the Public Health Questionnaire-2 (PHQ-2)
- Survey results were used to determine incidence of positive screens for ASD and depression
- Chi-square performed to determine association between ASD and depression with having a history of CZD, PGS, and/or pPTSD

## Results

- A total of 132 parents met inclusion criteria, 91 consented for study enrollment, and 65 completed the web-based survey (71% completion)
- 42 mothers and 23 partners were included in analysis
- 61.5% reported to be active duty or former active duty military
- 84.6% of infants were reported to have an illness severity of 1-2 out of 5
- The overall incidence of positive screening for ASD and depression was 24.6% and 26.2%, respectively
- Incidence of ASD in mothers was 26.2% and 21.7% in partners
- Incidence of a positive depression screen was 26.2% in mothers and 26.1% in partners
- Having any of the assessed military risk factors or history CZD showed OR 3.25 and 4, respectively, for developing ASD but p-value was not significant
- PGS was associated with higher risk of ASD (OR 4, p 0.02) but not depression
- pPTSD was associated with higher risk of ASD (p=0.0005) and depression (OR 10, p=0.03)

Table 1. Self-reported participant demographics

	<b>n (%)</b>
Total	65
Mothers	42 (64.6)
Partners	23 (35.4)
Active duty military	31 (47.7)
Prior active duty military	9 (13.8)
Combat zone deployment (CZD)	18 (27.7)
Prolonged geographic separation (PGS)	33 (50.8)
Pre-existing PTSD (pPTSD)	4 (6.2)
Any assessed military risk factor	41 (63.1)

Table 2. Participant-reported neonatal characteristics

<b>Gestational Age</b>	<b>n (%)</b>
<27 weeks	0 (0)
27+0 through 29+6 weeks	6 (9.2)
30+0 through 32+6 weeks	5 (7.7)
33+0 through 35+6 weeks	11 (16.9)
36+0 through 37+6 weeks	16 (24.6)
>38 weeks	27 (41.5)
<b>Infant illness severity score (1-5, 5 most severe)</b>	
1	41 (63.1)
2	14 (21.5)
3	10 (15.4)
4-5	0 (0)

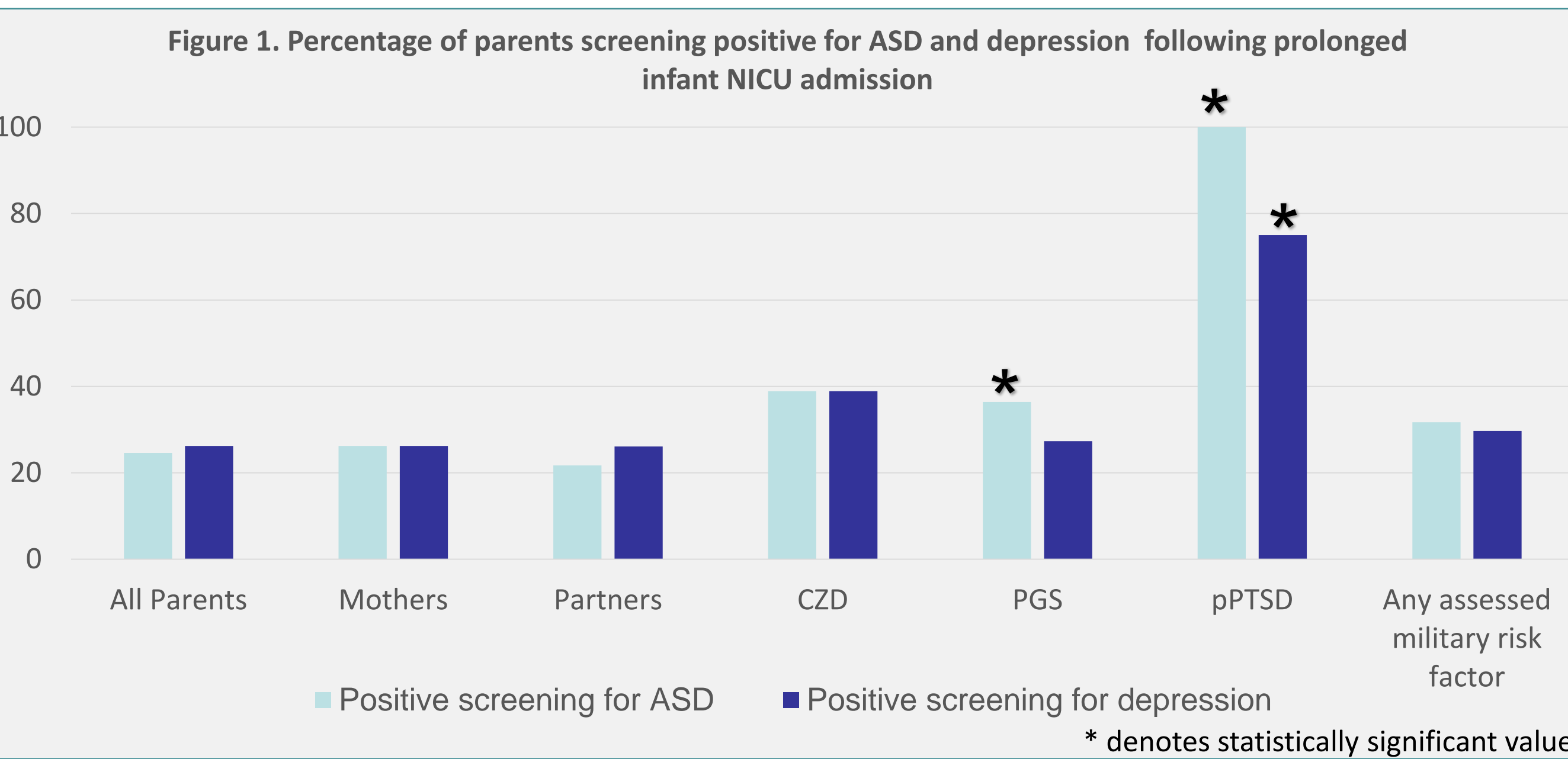


Table 3. Incidence of positive ASD and depression screening and association with military risk factors

	<b>+ ASD (%)</b>	<b>OR (95% CI, p-value)</b>
Total	16 (24.6)	
Mothers	11 (26.2)	
Partners	5 (21.7)	
Combat zone deployment (CZD)	7 (38.9)	2.69 (0.81-8.87, p=0.11)
<b>Prolonged geographic separation (PGS)</b>	<b>12 (36.4)</b>	<b>4 (1.13-14.2, p=0.02)</b>
<b>Pre-existing PTSD (pPTSD)</b>	<b>4 (100)</b>	<b>(p=0.0005)</b>
Any assessed military risk factor	13 (31.7)	3.25 (0.82-12.9, p=0.07)
	<b>+ Depression (%)</b>	<b>OR (95% CI, p-value)</b>
Total	17 (26.2)	
Mothers	11 (26.2)	
Partners	6 (26.1)	
Combat zone deployment (CZD)	7 (38.9)	2.35 (0.73-7.64, p=0.16)
Prolonged geographic separation (PGS)	9 (27.3)	1.13 (0.37-3.4, p=0.83)
<b>Pre-existing PTSD (pPTSD)</b>	<b>3 (75)</b>	<b>10 (0.97-104.6, p=0.03)</b>
Any assessed military risk factor	17 (29.3)	1.57 (0.48-5.2, p=0.45)

## Conclusions

- Our study found approximately 25% of parents will experience ASD and depression symptoms after a prolonged NICU admission
- This is lower than what has been reported in previous literature<sup>4,5</sup>, which is likely attributed to the lack of extremely low gestational age newborns and low parent-reported illness severity
- The incidence of positive ASD and depression screening were similar between mothers and partners
- Having a history of PGS was associated with a higher risk of ASD but not depression symptoms while having pPTSD was strongly associated with higher risk of ASD and depression symptoms
- Parents with history of CZD or any of the assessed military risk factors showed a trend towards higher risk for developing ASD, but this finding was not statistically significant
- These findings suggest military families have unique stressors that impact their ability to cope with the stress of a prolonged NICU admission although the study is likely weakened by a lack of extremely low gestational age and severely ill newborns
- Enrollment is ongoing and assessment for PTSD is being performed post-discharge utilizing the PTSD Checklist for DSM-5

## References

