Parental stress, depression, anxiety and participation to care in Neonatal Intensive Care Units: results of a prospective study in Italy, Brazil, and Tanzania

Supplementary tables and figures

Supp. Table 1. STROBE checklist

	Item No	Recommendation	Page No
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1,3
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5,6
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	6,7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7 to 11
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7 to 11
Bias	9	Describe any efforts to address potential sources of bias	10,11
Study size	10	Explain how the study size was arrived at	10
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7 to 11
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	10,11
		(b) Describe any methods used to examine subgroups and interactions	10,11
		(c) Explain how missing data were addressed	Fig. 1
		(d) If applicable, describe analytical methods taking account of sampling strategy	-
		(e) Describe any sensitivity analyses	-

Results

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	11,12
		(b) Give reasons for non-participation at each stage	11,12, Fig. 1
		(c) Consider use of a flow diagram	Fig.1
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	11,12
		(b) Indicate number of participants with missing data for each variable of interest	11,12, Fig. 1
Outcome data	15*	Report numbers of outcome events or summary measures	11,12,13
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	11,12,13
		(b) Report category boundaries when continuous variables were categorized	11,12,13
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	14

Discussion

Key results	18	Summarise key results with reference to study objectives	14, 15
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15, 16
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14,15,16
Generalisability	21	Discuss the generalisability (external validity) of the study results	15

Other information

Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	17

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Supp. Table 2. Hospitals characteristics

Hospital	Country	Level of care provided	Teaching Hospital	Administration	Live births [1]	Number of beds		
						Intensive care	Semi-intensive care	Kangaroo mother care
Institute for Maternal and Child Health IRCCS "Burlo Garofolo	Italy	Tertiary	Yes	public	140-160/month	10	12	0
Tosamaganga Hospital	Tanzania	Tertiary	Yes	public	240-260/month	0	variable	3
Instituto de Medicina Integral - Prof Fernando Figueira (IMIP)	Brazil	Tertiary	Yes	private /philanthropic	400-420/month	20	10	10
Hospital das Clínicas – University hospital of Universidade Federal de Pernambuco (UFPE)	Brazil	Tertiary	Yes	public- federal government	180-200/month	8	5	5
Barão de Lucena Hospital	Brazil	Tertiary	Yes	public- state government	400-420/month	18	22	10
Centro Integrado de Saúde Amaury de Medeiros (CISAM)/University of Pernambuco (UPE)	Brazil	Tertiary	Yes	public- state government	340-360/month	10	15	7

Agamenon Magalhães Hospital	Brazil	Tertiary	Yes	public- state government	400/month	15	15	8
Maria Lucinda Hospital	Brazil	Secondary	Yes	public- state government	0 [2]			

1   Based on average observed in year 2019, 2020 and 2021 (approximated)
2   No maternity hospital, only NICU.

Supp. Table 3. Parents' characteristics

	Brazil	Italy	Tanzania	p-value [0]
	N=327	N=191	N=224	
	n (%)	n (%)	n (%)	
Parental age (Median [IQR])	27 [22, 32]	37 [34, 41]	25 [21, 30]	< 0.001
Missing	3 (0.9)	0	0	
Working status				
Housewife/Unemployed	198 (60.6)	20 (10.4)	40 (17.9)	< 0.001
Working	127 (38.8)	167 (87.4)	183 (81.7)	
No data	2 (0.6)	4 (2.1)	1 (0.4)	
Marital status				
Married	114 (34.9)	89 (46.6)	164 (73.2)	
Un-married	135 (41.3)	5 (2.6)	57 (25.4)	< 0.001
Unmarried living together	74 (22.6)	97 (50.8)	2 (0.9)	
Missing	4 (1.2)	0	1 (0.4)	
Education ISCED [1]				
0-1 *(No schooling or Primary ed.)*	4 (1.2)	0	145 (64.7)	
2-3 *(Lower secondary ed. or Upper secondary ed.)*	288 (88.1)	108 (56.5)	72 (32.1)	< 0.001
4-5-6 *(Higher ed. and post-graduation)*	35 (10.7)	81 (42.4)	7 (3.1)	
Missing	0	2 (1)	0	
Parity *(data collected only for mothers)*				
1	161 (49.2)	63 (56.3)	51 (22.8)	
2	82 (25.1)	28 (25)	16 (7.1)	0.003
>2	59 (18)	20 (17.9)	38 (17.0)	
Missing	25 (7.6)	1 (0.9)	113 (50.4)	

Notes: 0- For the chi-squared test comparing the different proportions, 'missing' levels were not considered because they have almost zero values; 1 - Imperfect match for Brazilian standards used in the local questionnaire.

Abbreviations: IQR = interquartile range, ISCED: International Standard Classification of Education.

Supp. Table 4. Newborns' characteristics

	Brazil	Italy	Tanzania [2]	p-value
	N=327	N=123	N=224	
	n (%)	n (%)	n (%)	
Sex				
Female	160 (48.9)	63 (51.2)	114 (50.9)	0.916
Male	163 (49.8)	60 (48.8)	109 (48.7)	
Missing	4 (1.2)	0	1 (0.4)	
Gestational age at birth (weeks)				
≤27	21 (6.4)	6 (4.9)	8 (3.6)	
28-33	165 (50.5)	29 (23.6)	33 (14.7)	
34-36	69 (21.1)	41 (33.3)	26 (11.6)	< 0.001
37-41	70 (21.4)	47 (38.2)	138 (61.6)	
≥42 *	0	0	19 (8.5)	
Unit				
NICU	219 (67.0)	60 (48.8)	160 (71.4)	
Semi-intensive care	103 (31.5)	63 (51.2)	63 (28.1)	< 0.001
Missing	4 (1.2)	0	1 (0.4)	
Apgar at 5th minute <7	26 (8.0)	3 (2.4)	53 (23.7)	< 0.001
Bag mask ventilation at birth	145 (44.3)	28 (22.8)	84 (37.5)	0.031
Any respiratory distress[1]	156 (47.7)	58 (47.2)	121 (54.0)	0.749
Intubation	95 (29.1)	24 (19.5)	0 (0.0)	/
Sepsis	85 (26.0)	16 (13)	43 (19.2)	0.113
Jaundice [3]	235 (71.9)	24 (19.5)	145 (64.7)	< 0.001
Major malformation	47 (14.4)	8 (6.5)	12 (5.4)	0.064
Surgery	44 (13.5)	12 (9.8)	5 (2.2)	0.020
Total hospitalization, days (*Median [IQR]*)	29 [18, 47]	15 [8.5, 26]	7 [5, 12]	< 0.001
Missing	18 (5.5)	0	1 (0.4)	

Notes: 0- For the chi-squared test comparing the different proportions, 'missing' levels were not considered because they have almost zero values; 1 – both clinical and radiological signs; 2 – second level hospital; 3 – slightly different definitions used

Abbreviations: IQR = interquartile range.

Supp. Table 5A. Frequency of parental depression, anxiety (EPDS-A) and stress

		At least one condition		All conditions at once	
		Frequency	*%*	*Frequency*	*%*
Italy	Total sample (N = 191)	101	52.9	22	11.5
Brazil	Cases with data on all 3 conditions (N= 106)	69	65.1	17	16.0
	Total sample (N = 327)	225	68.8		5.2
Tanzania	Total sample (N = 224)	130	58.0	4	1.8

Notes: predefined cut off: Depression: EPDS ≥ 12 for Italy and ≥ 13 for Brazil and Tanzania; Anxiety: EPDS-A ≥ 6;Stress: SOL ≥ 3.

Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; EPDS-A = Edinburgh Postnatal Depression Scale for Anxiety; SOL = Stress Occurrence Level.

Supp. Table 5B. Frequency of parental depression, anxiety (STAI) and stress

		At least one condition		All conditions at once	
		Frequency	*%*	*Frequency*	*%*
Italy	Cases with data on all 3 conditions (N = 130)	82	**63.1**	17	**13.1**
	Total sample (N = 191)	119	62.3		8.9
Brazil	Cases with data on all 3 conditions (N= 106)	74	**69.8**	11	**10.4**
	Total sample (N = 327)	230	70.3		3.4

Notes: predefined cut off: Depression: EPDS ≥ 12 for Italy and ≥ 13 for Brazil and Tanzania; Anxiety: STAI state > 40; Stress: SOL ≥ 3.
Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; STAI = State-Trait Anxiety Inventory; SOL = Stress Occurrence Level. STAI score was not collected in Tanzania.

Supp. Table 6. Frequency of depression, anxiety and stress in the three countries

		EPDS		EPDS-A		STAI				PSS:NICU			
						State		Trait		OSL		SOL	
		≥12/13	%	≥6	%	>40	%	>40	%	≥3	%	≥3	%
Italy	Total sample for each score	63	33.3	46	24.3	48	36.9	36	27.7	13	6.8	70	36.7
Brazil	Total sample for each score	38	35.8	30	28.3	35	59.3	69	65.1	147	45.0	211	64.5
Tanzania	Total sample	117	52.3			/				3	1.3	10	4.5

Notes: Depression cut-offs: EPDS ≥ 12 for Italy and ≥ 13 for Brazil and Tanzania. Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; STAI = State-Trait Anxiety Inventory; PSS:NICU = Parental Stressor Scale in NICU; OSL = Overall Stress Level; SOL = Stress Occurrence Level.

Supp. Table 6B. Frequency of severe stress and severe anxiety in Italy and Brazil

	STAI		PSS:NICU	
	State		SOL	
	>60	%	≥4	%
Italy	5	3.84	6	4.69
Brazil	3	5.04	24	22.64
Tanzania	/	/	0	0

Abbreviations: STAI = State-Trait Anxiety Inventory; PSS:NICU = Parental Stressor Scale in NICU; SOL = Stress Occurrence Level.

Supp. Table 7 – Median scores of depression, anxiety and stress in the three countries

| | Depression (EPDS) | | Anxiety (EPDS-A) | | Anxiety (STAI) | | | | Stress (PSS:NICU) | | | |
| | | | | | State | | Trait | | OSL | | SOL | |
	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
Italy	9	[5; 13]	3	[2; 5]	37	[30.0; 46.8]	35	[28; 41]	1.9	[1.4; 2.3]	2.6	[2; 3.3]
Brazil	10	[6; 15]	4	[2; 6]	**45**	[37.5; 52]	**44**	[37.2; 50]	2.8	[2.0; 3.5]	**3.4**	[2.6; 4]
Tanzania	**13**	[9; 16]	4	[3; 6]					1.8	[1.4; 2.1]	2.1	[1.6; 2.5]

Note: In bold median values above the cut-off (EPDS ≥ 12/13, STAI > 40, SOL ≥ 3), STAI score was not collected in Tanzania.

Abbreviations: IQR = Interquartile range; EPDS = Edinburgh Postnatal Depression Scale; STAI = State-Trait Anxiety Inventory; PSS:NICU = Parental Stressor Scale in NICU; OSL = Overall Stress Level; SOL = Stress Occurrence Level.

Supp. Table 8. Parental participation to care, median scores by domain of IPP-NICU

Domains	Italy		Brazil		Tanzania	
	Median	*IQR*	*Median*	*IQR*	*Median*	*IQR*
Activities related to daily living (0-6)	5	[3; 5.5]	4	[2; 5]	5	[5; 6]
Providing comfort (0-7)	5	[4; 6]	6	[5; 7]	7	[6; 7]
Advocating for newborn health (0-7)	5	[4; 5.5]	5	[4; 6]	5	[2; 6]
Technical task (0-10)	4	[2; 7]	6	[4; 8]	8	[7; 9]
IPP-NICU total score (0-30)	18	[12; 22]	21	[15; 24.8]	24	[21; 26]

Abbreviations: IPP-NICU: Index of paternal participation in NICU; IQR = interquartile range.

Supp. Table 9. Logistic regression models – factors associated with stress in Italy

Dependent: SOL ≥ 3		Not stressed	Stressed	OR (univariate)	OR (multivariate)
Newborn sex	Female	60 (63.8)	34 (36.2)	-	-
	Male	59 (64.1)	33 (35.9)	0.99 (0.54-1.80, p=0.966)	0.72 (0.35-1.45, p=0.356)
Twin	No	93 (59.6)	63 (40.4)	-	-
	Yes	26 (86.7)	4 (13.3)	0.23 (0.06-0.62, p=0.008)	**0.24 (0.06-0.71, p=0.018)**
Intubation	No	97 (66.0)	50 (34.0)	-	-
	Yes	22 (56.4)	17 (43.6)	1.50 (0.72-3.07, p=0.270)	2.10 (0.80-5.83, p=0.139)
Total stay	≤ 14 days	57 (65.5)	30 (34.5)	-	-
	> 14 days	62 (66.0)	32 (34.0)	0.98 (0.53-1.82, p=0.950)	0.91 (0.43-1.94, p=0.816)
Weight	<1500g	24 (70.6)	10 (29.4)	-	-
	≥1500g	95 (62.5)	57 (37.5)	1.44 (0.66-3.36, p=0.376)	2.55 (0.83-8.70, p=0.115)
Education [1]	Not graduated	75 (68.2)	35 (31.8)	-	-
	Graduated	44 (57.9)	32 (42.1)	1.56 (0.85-2.87, p=0.152)	1.90 (0.94-3.87, p=0.075)
Parental age	≥ 35 years	90 (68.2)	42 (31.8)	-	-
	< 35 years	29 (53.7)	25 (46.3)	1.85 (0.96-3.54, p=0.064)	1.70 (0.79-3.70, p=0.175)
Working status	Unemployed	12 (52.2)	11 (47.8)	-	-
	Employed	107 (65.6)	56 (34.4)	0.57 (0.24-1.39, p=0.212)	0.87 (0.30-2.58, p=0.794)
Role	Father	56 (73.7)	20 (26.3)	-	-
	Mother	63 (57.3)	47 (42.7)	2.09 (1.12-4.00, p=0.023)	1.52 (0.73-3.20, p=0.266)
Participation	IPP-NICU < 20	75 (67.0)	37 (33.0)	-	-
	IPP-NICU ≥ 20	44 (59.5)	30 (40.5)	1.38 (0.75-2.54, p=0.297)	1.34 (0.66-2.72, p=0.409)

Notes: [1] Not graduated = ISCED 0,1,2,3; Graduated = ISCED 4,5,6.

Abbreviations: SOL = Stress Occurrence Level; IPP-NICU = Index of Parental Participation in NICU.

Supp. Table 10. Logistic regression models – factors associated with depression in Italy

Dependent: EPDS ≥ 12		Not depressed	Depressed	OR (univariate)	OR (multivariate)
Newborn sex	Female	68 (72.3)	26 (27.7)	-	-
	Male	56 (60.9)	36 (39.1)	1.68 (0.91-3.14, p=0.098)	1.70 (0.82-3.58, p=0.153)
Twin	No	100 (64.1)	56 (35.9)	-	-
	Yes	24 (80.0)	6 (20.0)	0.45 (0.16-1.09, p=0.097)	0.68 (0.22-1.89, p=0.470)
Intubation	No	96 (65.3)	51 (34.7)	-	-
	Yes	28 (71.8)	11 (28.2)	0.74 (0.33-1.57, p=0.446)	1.14 (0.39-3.29, p=0.812)
Total stay	≤ 14 days	55 (63.2)	32 (36.8)	-	-
	> 14 days	69 (73.4)	25 (26.6)	0.62 (0.33-1.17, p=0.142)	0.85 (0.39-1.85, p=0.688)
Newborn weight	<1500g	27 (79.4)	7 (20.6)	-	-
	≥1500g	97 (63.8)	55 (36.2)	2.19 (0.94-5.75, p=0.086)	3.36 (0.94-14.46, p=0.076)
Education [1]	Not graduated	73 (66.4)	37 (33.6)	-	-
	Graduated	51 (67.1)	25 (32.9)	0.97 (0.52-1.79, p=0.916)	0.85 (0.40-1.76, p=0.659)
Parental age	≥ 35 years	95 (72.0)	37 (28.0)	-	-
	< 35 years	29 (53.7)	25 (46.3)	2.21 (1.15-4.28, p=0.018)	1.48 (0.68-3.19, p=0.320)
Working status	Unemployed	9 (39.1)	14 (60.9)	-	-
	Employed	115 (70.6)	48 (29.4)	0.27 (0.11-0.65, p=0.004)	0.60 (0.21-1.69, p=0.332)
Role	Father	62 (81.6)	14 (18.4)	-	-
	Mother	62 (56.4)	48 (43.6)	3.43 (1.75-7.04, p<0.001)	**2.93 (1.35-6.65, p=0.008)**
Participation	IPP-NICU < 20	77 (68.8)	35 (31.2)	-	-
	IPP-NICU ≥ 20	47 (63.5)	27 (36.5)	1.26 (0.68-2.35, p=0.459)	0.92 (0.44-1.89, p=0.816)

Notes: [1] Not graduated = ISCED 0,1,2,3; Graduated = ISCED 4,5,6.

Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; IPP-NICU = Index of Parental Participation in NICU.

Supp. Table 11. Logistic regression models – factors associated with anxiety in Italy

Dependent: EPDS-A ≥ 6		Not anxious	Anxious	OR (univariate)	OR (multivariate)
Newborn sex	*Female*	72 (76.6)	22 (23.4)	-	-
	Male	69 (75.0)	23 (25.0)	1.09 (0.56-2.14, p=0.799)	1.28 (0.57-2.92, p=0.552)
Twin	*No*	117 (75.0)	39 (25.0)	-	-
	Yes	24 (80.0)	6 (20.0)	0.75 (0.26-1.87, p=0.559)	1.35 (0.43-3.92, p=0.591)
Intubation	*No*	112 (76.2)	35 (23.8)	-	-
	Yes	29 (74.4)	10 (25.6)	1.10 (0.47-2.43, p=0.812)	1.92 (0.60-6.07, p=0.264)
Total stay	*≤ 14 days*	64 (73.6)	23 (26.4)	-	-
	> 14 days	77 (81.9)	17 (18.1)	0.61 (0.30-1.24, p=0.178)	0.75 (0.31-1.75, p=0.506)
Newborn weight	*<1500g*	28 (82.4)	6 (17.6)	-	-
	≥1500g	113 (74.3)	39 (25.7)	1.61 (0.66-4.56, p=0.327)	4.09 (0.99-22.32, p=0.071)
Education [1]	*Not graduated*	80 (72.7)	30 (27.3)	-	-
	Graduated	61 (80.3)	15 (19.7)	0.66 (0.32-1.31, p=0.240)	0.58 (0.24-1.30, p=0.192)
Parental age	*≥ 35 years*	108 (81.8)	24 (18.2)	-	-
	< 35 years	33 (61.1)	21 (38.9)	2.86 (1.41-5.81, p=0.003)	1.90 (0.83-4.31, p=0.122)
Working status	*Unemployed*	13 (56.5)	10 (43.5)	-	-
	Employed	128 (78.5)	35 (21.5)	0.36 (0.14-0.90, p=0.025)	0.89 (0.30-2.81, p=0.843)
Role	*Father*	66 (86.8)	10 (13.2)	-	-
	Mother	75 (68.2)	35 (31.8)	3.08 (1.46-7.00, p=0.005)	**3.03 (1.27-7.83, p=0.016)**
Participation	*IPP-NICU < 20*	86 (76.8)	26 (23.2)	-	-
	IPP-NICU ≥ 20	55 (74.3)	19 (25.7)	1.14 (0.57-2.25, p=0.701)	0.77 (0.34-1.72, p=0.533)

Notes: [1] Not graduated = ISCED 0,1,2,3; Graduated = ISCED 4,5,6.

Abbreviations: EPDS-A = Edinburgh Postnatal Depression Scale – Anxiety subscale; IPP-NICU = Index of Parental Participation in NICU.

Supp. Table 12. Logistic regression models – factors associated with stress in Brazil

Dependent: SOL ≥ 3		Not stressed	Stressed	OR (univariate)	adjOR (multivariate)
Age	*18-30*	33 (53.2)	29 (46.8)	-	-
	>30	17 (44.7)	21 (55.3)	1.41 (0.63-3.19, p=0.411)	1.50 (0.60-3.84, p=0.388)
Gestational weeks	*<34*	24 (41.4)	34 (58.6)	-	-
	≥ 34	27 (56.2)	21 (43.8)	0.55 (0.25-1.18, p=0.129)	0.95 (0.26-3.41, p=0.937)
Marital status	*Single/Divorced*	10 (38.5)	16 (61.5)	-	-
	Married/Stable union	41 (51.2)	39 (48.8)	0.59 (0.23-1.45, p=0.259)	0.69 (0.22-2.08, p=0.515)
Residence	*Recife/RMR*	23 (39.7)	35 (60.3)	-	-
	Interior/Rural area	28 (58.3)	20 (41.7)	0.47 (0.21-1.02, p=0.057)	**0.33 (0.13-0.84, p=0.023)**
Family monthly wage	*One official minimum wage*	25 (43.1)	33 (56.9)	-	-
	More than one min. wage	26 (56.5)	20 (43.5)	0.58 (0.26-1.27, p=0.175)	0.62 (0.25-1.53, p=0.296)
Major malformation	*No*	35 (47.9)	38 (52.1)	-	-
	Yes	16 (48.5)	17 (51.5)	0.98 (0.43-2.24, p=0.959)	1.12 (0.31-4.17, p=0.864)
Surgery	*No*	41 (48.2)	44 (51.8)	-	-
	Yes	10 (47.6)	11 (52.4)	1.02 (0.39-2.71, p=0.960)	2.58 (0.54-13.39, p=0.243)
Intubation	*No*	39 (52.0)	36 (48.0)	-	-
	Yes	12 (38.7)	19 (61.3)	1.72 (0.74-4.11, p=0.215)	1.20 (0.39-3.80, p=0.753)
Covid-19 confirmed	*No*	29 (56.9)	22 (43.1)	-	-
	Yes	22 (40.0)	33 (60.0)	1.98 (0.92-4.33, p=0.084)	1.89 (0.72-5.13, p=0.200)
Total stay	*≤ 30 days*	37 (56.9)	28 (43.1)	-	-
	> 30 days	14 (34.1)	27 (65.9)	2.55 (1.15-5.85, p=0.024)	2.26 (0.80-6.67, p=0.130)
Participation	*IPP-NICU < 20*	26 (44.8)	32 (55.2)	-	-
	IPP-NICU ≥ 20	25 (52.1)	23 (47.9)	0.75 (0.35-1.61, p=0.457)	0.56 (0.19-1.55, p=0.268)

Abbreviations: SOL = Stress Occurrence Level; RMR = Recife's metropolitan region; IPP-NICU = Index of Parental Partecipation in NICU.

Supp. Table 13. Logistic regression models – factors associated with depression in Brazil

Dependent: EPDS ≥ 13		Not depressed	Depressed	OR (univariate)	adjOR (multivariate)
Age	18-30	38 (61.3)	24 (38.7)	-	-
	>30	26 (68.4)	12 (31.6)	0.73 (0.30-1.70, p=0.472)	0.58 (0.22-1.44, p=0.247)
Gestational weeks	<34	38 (65.5)	20 (34.5)	-	-
	≥ 34	30 (62.5)	18 (37.5)	1.14 (0.51-2.54, p=0.747)	0.85 (0.23-3.04, p=0.806)
Marital status	Single/Divorced	16 (61.5)	10 (38.5)	-	-
	Married/Stable union	52 (65.0)	28 (35.0)	0.86 (0.35-2.20, p=0.749)	1.17 (0.41-3.50, p=0.773)
Residence	Recife/RMR	32 (55.2)	26 (44.8)	-	-
	Interior/Rural area	36 (75.0)	12 (25.0)	0.41 (0.17-0.93, p=0.036)	0.40 (0.15-1.01, p=0.057)
Family monthly wage	One official minimum wage	37 (63.8)	21 (36.2)	-	-
	More than one min. wage	30 (65.2)	16 (34.8)	0.94 (0.41-2.11, p=0.880)	1.30 (0.53-3.26, p=0.574)
Major malformation	No	48 (65.8)	25 (34.2)	-	-
	Yes	20 (60.6)	13 (39.4)	1.25 (0.53-2.91, p=0.609)	1.74 (0.50-6.16, p=0.383)
Surgery	No	54 (63.5)	31 (36.5)	-	-
	Yes	14 (66.7)	7 (33.3)	0.87 (0.30-2.33, p=0.788)	0.85 (0.18-3.97, p=0.837)
Intubation	No	48 (64.0)	27 (36.0)	-	-
	Yes	20 (64.5)	11 (35.5)	0.98 (0.40-2.32, p=0.960)	1.04 (0.33-3.19, p=0.952)
Covid-19 confirmed	No	33 (64.7)	18 (35.3)	-	-
	Yes	35 (63.6)	20 (36.4)	1.05 (0.47-2.33, p=0.909)	1.03 (0.39-2.74, p=0.957)
Total stay	≤ 30 days	43 (66.2)	22 (33.8)	-	-
	> 30 days	25 (61.0)	16 (39.0)	1.25 (0.55-2.82, p=0.588)	1.18 (0.42-3.35, p=0.754)
Participation	IPP-NICU < 20	38 (65.5)	20 (34.5)	-	-
	IPP-NICU ≥ 20	30 (62.5)	18 (37.5)	1.14 (0.51-2.54, p=0.747)	1.13 (0.41-3.13, p=0.807)

Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; RMR = Recife's metropolitan region; IPP-NICU = Index of Parental Participation in NICU.

Supp. Table 14. Logistic regression models – factors associated with anxiety in Brazil

Dependent: EPDS-A ≥ 6		Not anxious	Anxious	OR (univariate)	adjOR (multivariate)
Age	*18-30*	42 (67.7)	20 (32.3)	-	-
	>30	30 (78.9)	8 (21.1)	0.56 (0.21-1.40, p=0.229)	0.46 (0.16-1.24, p=0.139)
Gestational weeks	*<34*	42 (72.4)	16 (27.6)	-	-
	≥ 34	34 (70.8)	14 (29.2)	1.08 (0.46-2.53, p=0.857)	0.96 (0.24-3.89, p=0.956)
Marital status	*Single/Divorced*	16 (61.5)	10 (38.5)	-	-
	Married/Stable union	60 (75.0)	20 (25.0)	0.53 (0.21-1.39, p=0.189)	0.65 (0.22-1.99, p=0.442)
Residence	*Recife/RMR*	39 (67.2)	19 (32.8)	-	-
	Interior/Rural area	37 (77.1)	11 (22.9)	0.61 (0.25-1.44, p=0.265)	0.71 (0.26-1.89, p=0.492)
Family monthly wage	*One official minimum wage*	40 (69.0)	18 (31.0)	-	-
	More than one min. wage	35 (76.1)	11 (23.9)	0.70 (0.28-1.66, p=0.422)	0.99 (0.37-2.62, p=0.984)
Major malformation	*No*	52 (71.2)	21 (28.8)	-	-
	Yes	24 (72.7)	9 (27.3)	0.93 (0.36-2.29, p=0.874)	1.00 (0.26-3.67, p=0.996)
Surgery	*No*	60 (70.6)	25 (29.4)	-	-
	Yes	16 (76.2)	5 (23.8)	0.75 (0.23-2.15, p=0.611)	1.05 (0.19-5.47, p=0.953)
Intubation	*No*	54 (72.0)	21 (28.0)	-	-
	Yes	22 (71.0)	9 (29.0)	1.05 (0.40-2.61, p=0.915)	1.02 (0.30-3.35, p=0.977)
Covid-19 confirmed	*No*	38 (74.5)	13 (25.5)	-	-
	Yes	38 (69.1)	17 (30.9)	1.31 (0.56-3.10, p=0.537)	1.26 (0.45-3.58, p=0.658)
Total stay	*≤ 30 days*	48 (73.8)	17 (26.2)	-	-
	> 30 days	28 (68.3)	13 (31.7)	1.31 (0.55-3.10, p=0.537)	1.29 (0.43-3.95, p=0.649)
Participation	*IPP-NICU < 20*	42 (72.4)	16 (27.6)	-	-
	IPP-NICU ≥ 20	34 (70.8)	14 (29.2)	1.08 (0.46-2.53, p=0.857)	1.17 (0.40-3.48, p=0.768)

Abbreviations: EPDS-A = Edinburgh Postnatal Depression Scale – Anxiety subscale; RMR = Recife's metropolitan region; IPP-NICU = Index of Parental Partecipation in NICU.

Supp. Table 15. Logistic regression models – factors associated with stress in Tanzania

Dependent: SOL≥3		Not stressed	Stressed	OR (univariate)	adjOR (multivariate)
Education[1]	No schooling or primary	139 (95.9)	6 (4.1)	-	-
	Secondary or higher	75 (94.9)	4 (5.1)	1.24 (0.31-4.46, p=0.749)	1.60 (0.35-6.78, p=0.523)
Parental age (years)	<25	99 (95.2)	5 (4.8)	-	-
	≥25	115 (95.8)	5 (4.2)	0.86 (0.23-3.18, p=0.817)	1.06 (0.25-4.80, p=0.932)
Working status	Working data	175 (95.6)	8 (4.4)	-	-
	Housewife/Un-employed/no data	39 (95.1)	2 (4.9)	1.12 (0.17-4.69, p=0.887)	1.25 (0.17-6.42, p=0.804)
Sex	Female	111 (97.4)	3 (2.6)	-	-
	Male	102 (93.6)	7 (6.4)	2.54 (0.69-12.02, p=0.185)	2.70 (0.70-13.13, p=0.169)
Newborn weight	≥ 2500 g	120 (95.2)	6 (4.8)	-	-
	<2500 g	93 (95.9)	4 (4.1)	0.86 (0.21-3.10, p=0.820)	0.69 (0.14-3.12, p=0.629)
Total stay	≤ 7 days	126 (96.2)	5 (3.8)	-	-
	> 7 days	88 (94.6)	5 (5.4)	1.43 (0.39-5.29, p=0.579)	1.23 (0.29-5.15, p=0.773)
Unit	NICU	151 (94.4)	9 (5.6)	-	-
	Semi-intensive care	62 (98.4)	1 (1.6)	0.27 (0.01-1.48, p=0.220)	0.23 (0.01-1.46, p=0.188)
Participation	*IPP-NICU < 20*	189 (96.4)	7 (3.6)	-	-
	IPP-NICU ≥ 20	25 (89.3)	3 (10.7)	3.24 (0.67-12.50, p=0.104)	3.51 (0.63-16.72, p=0.121)

Notes: variable role and gestational age was removed because of extreme results. [1]No schooling or primary education = ISCED 0,1; Secondary or higher education: ISCED 2,3,4,5,6.

Abbreviations: IPP-NICU = Index of Parental Participation in NICU, NICU = neonatal intensive care unit; SOL = stress occurrence level.

Supp. Table 16. Logistic regression models – factors associated with depression in Tanzania

Dependent: EPDS≥13		Not depressed	Depressed	OR (univariate)	adjOR (multivariate)
Education[1]	No schooling or primary	61 (42.4)	83 (57.6)	-	-
	Secondary or higher	45 (57.0)	34 (43.0)	0.56 (0.32-0.96, p=0.038)	0.57 (0.31-1.02, p=0.061)
Parental age (years)	<25	48 (46.6)	55 (53.4)	-	-
	≥25	58 (48.3)	62 (51.7)	0.93 (0.55-1.58, p=0.796)	0.81 (0.45-1.46, p=0.485)
Working status	Working data	87 (47.5)	96 (52.5)	-	-
	Housewife/Un-employed/no data	19 (47.5)	21 (52.5)	1.00 (0.50-2.00, p=0.996)	0.94 (0.43-2.04, p=0.870)
Newborn sex	Female	54 (47.4)	60 (52.6)	-	-
	Male	52 (47.7)	57 (52.3)	0.99 (0.58-1.67, p=0.960)	1.07 (0.62-1.86, p=0.804)
Gestational age	<27 weeks	2 (33.3)	4 (66.7)	-	-
	27-32 weeks	17 (45.9)	20 (54.1)	0.59 (0.07-3.41, p=0.567)	0.49 (0.06-2.99, p=0.452)
	32-37 weeks	20 (66.7)	10 (33.3)	0.25 (0.03-1.51, p=0.144)	0.23 (0.03-1.52, p=0.141)
	>37 weeks	67 (44.7)	83 (55.3)	0.62 (0.08-3.27, p=0.587)	0.73 (0.09-4.32, p=0.739)
Newborn weight	≥ 2500 g	62 (49.2)	64 (50.8)	-	-
	<2500 g	44 (45.4)	53 (54.6)	1.17 (0.69-1.99, p=0.569)	1.52 (0.71-3.32, p=0.283)
Total stay	≤ 7 days	61 (46.9)	69 (53.1)	-	-
	> 7 days	45 (48.4)	48 (51.6)	0.94 (0.55-1.61, p=0.829)	0.93 (0.51-1.68, p=0.808)
Unit	NICU	74 (46.2)	86 (53.8)	-	-
	Semi-intensive care	32 (50.8)	31 (49.2)	0.83 (0.46-1.50, p=0.541)	1.01 (0.53-1.94, p=0.982)
Participation	IPP-NICU < 20	13 (48.1)	14 (51.9)	-	-
	IPP-NICU ≥ 20	93 (47.4)	103 (52.6)	1.03 (0.45-2.31, p=0.946)	1.05 (0.44-2.48, p=0.909)

Abbreviations: EPDS = Edinburgh Postnatal Depression Scale; IPP-NICU = Index of Parental Participation in NICU, NICU = neonatal intensive care unit.

Notes: variable role was excluded because of extreme results. [1]No schooling or primary education = ISCED 0,1; Secondary or higher education: ISCED 2,3,4,5,6.

Supp. Table 17. Logistic regression models – factors associated with anxiety in Tanzania

Dependent: EPDS - A ≥ 6		Not anxious	Anxious	OR (univariate)	adjOR (multivariate)
Education[1]	No schooling or primary	103 (71.5)	41 (28.5)	-	-
	Secondary or higher	55 (70.5)	23 (29.5)	1.05 (0.57-1.92, p=0.873)	1.31 (0.67-2.56, p=0.427)
Parental age (years)	<25	78 (75.7)	25 (24.3)	-	-
	≥25	80 (67.2)	39 (32.8)	1.52 (0.85-2.77, p=0.164)	2.04 (1.04-4.09, p=0.040)
Working status	Working data	132 (72.5)	50 (27.5)	-	-
	Housewife/Un-employed/no data	26 (65.0)	14 (35.0)	1.42 (0.67-2.91, p=0.343)	2.33 (0.99-5.53, p=0.052)
Sex	Female	77 (68.1)	36 (31.9)	-	-
	Male	81 (74.3)	28 (25.7)	0.74 (0.41-1.32, p=0.311)	0.72 (0.39-1.33, p=0.300)
Gestational age	<27 weeks	4 (66.7)	2 (33.3)	-	-
	27-32 weeks	27 (73.0)	10 (27.0)	0.74 (0.12-5.94, p=0.750)	0.86 (0.14-7.20, p=0.879)
	32-37 weeks	25 (83.3)	5 (16.7)	0.40 (0.06-3.44, p=0.357)	0.53 (0.07-4.84, p=0.542)
	>37 weeks	102 (68.5)	47 (31.5)	0.92 (0.17-6.81, p=0.926)	1.21 (0.20-9.71, p=0.839)
Newborn weight	≥ 2500 g	89 (71.2)	36 (28.8)	-	-
	<2500 g	69 (71.1)	28 (28.9)	1.00 (0.56-1.80, p=0.991)	1.63 (0.72-3.69, p=0.243)
Total stay	≤ 7 days	85 (65.9)	44 (34.1)	-	-
	> 7 days	73 (78.5)	20 (21.5)	0.53 (0.28-0.97, p=0.042)	0.43 (0.21-0.84, p=0.016)
Unit	NICU	112 (70.0)	48 (30.0)	-	-
	Semi-intensive care	46 (74.2)	16 (25.8)	0.81 (0.41-1.55, p=0.536)	0.59 (0.27-1.24, p=0.177)
Participation	IPP-NICU < 20	20 (74.1)	7 (25.9)	-	-
	IPP-NICU ≥ 20	138 (70.8)	57 (29.2)	1.18 (0.49-3.15, p=0.723)	1.04 (0.40-2.96, p=0.935)

Abbreviations: EPDS-A = Edinburgh Postnatal Depression Scale - Anxiety subscale; IPP-NICU = Index of Parental Participation in NICU, NICU = neonatal intensive care unit.

Notes: variable role was excluded because of extreme results. [1]No schooling or primary education = ISCED 0,1; Secondary or higher education: ISCED 2,3,4,5,6.