



48

PARENTAL STRESS, DEPRESSION, ANXIETY AND PARTICIPATION TO CARE IN NEONATAL INTENSIVE CARE UNITS: RESULTS OF A PROSPECTIVE STUDY IN ITALY, BRAZIL, AND TANZANIA

Dr. Ilaria Mariani¹, prof Marzia Lazzerini^{1,2}, Dafne Barcala Coutinho do Amaral Gomez³, dr Gaetano Azzimonti⁴, dr Jenny Bua⁵, dr Waldemar Brandão Neto⁶, dr Laura Travan⁵, dr Juliana Barradas de Souza³, dr Michele D'Alessandro⁴, dr Sabrina Plet⁵, dr Geisy Maria de Souza Lima³, dr Emmanuel Abraham Ndile⁷, dr Maddalena Ermacora⁵, dr Emanuelle Pessa Valente¹, dr Paolo Dalena¹

¹WHO Collaborating Centre for Maternal and Child Health, Institute for Maternal and Child Health – IRCCS Burlo Garofolo, ²Maternal Adolescent Reproductive and Child Health Care Centre, London School of Hygiene & Tropical Medicine, ³Instituto de Medicina Integral Prof Fernando Figueira, ⁴Cuamm Doctors with Africa, ⁵Neonatal Intensive Care Unit, Institute for Maternal and Child Health – IRCCS Burlo Garofolo, ⁶Universidade de Pernambuco (UPE), ⁷Newborn Unit, Tosamaganga Hospital

INTRODUCTION Studies comparing multiple mental health conditions across different settings and evaluating their association with parental participation in newborn care are lacking. We aimed at evaluating the frequency of parental stress, anxiety, and depression, along with the level of participation in newborn care among parents of newborns in Italy, Brazil and Tanzania.

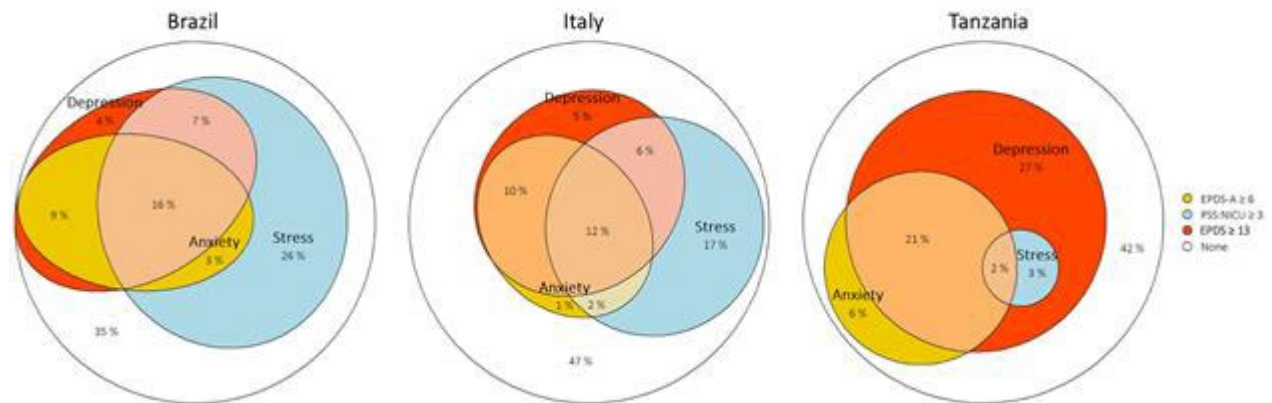
MATERIAL AND METHODS Parental stress, anxiety, depression and participation in care were assessed prospectively in parents of newborns in eight NICUs, utilising: the Parental Stressor Scale in NICU (PSS:NICU); the Edinburgh Postnatal Depression Scale (EPDS) and EPDS-Anxiety sub-scale (EPDS-A); the Index of Parental Participation in NICU (IPP-NICU).

RESULTS Study outcomes were assessed on 742 parents (Brazil = 327, Italy = 191, Tanzania = 224). We observed a very high frequency of stress, anxiety and depression in all facilities, with an overall estimated frequency of any of the mental health condition of 65.1%, 52.9% and 58.0% in Brazil, Italy, Tanzania respectively ($p < 0.001$, Figure). The three countries had different patterns of intersections across populations identified with different conditions with the frequency of all three conditions simultaneously higher in Brazil (16.0%) and Italy (11.5%) compared to Tanzania (1.8%, $p < 0.001$). EPDS scores indicating depression (cut-off: ≥ 13 for Brazil and Tanzania, ≥ 12 for Italy) were significantly more frequent in Tanzania (52.3%) when compared with either Brazil (35.8%) and Italy (33.3%) ($p < 0.001$). Parental participation in care was also significantly higher in Tanzania (median IPP-NICU=24) than in the other two countries (median = 21 for Brazil, 18 for Italy, $p < 0.001$). Severe stress (PSS:NICU ≥ 4) was significantly more frequently reported in Brazil (22.6%), compared to Italy and Tanzania (4.7% and 0% respectively, $p < 0.001$). Factors independently associated with either parental stress, anxiety, or depression varied by country, and a significant association with parental participation in care was lacking.



CONCLUSIONS Study findings suggests that parental stress, anxiety and depression are extremely frequent in NICUs despite diversity in the setting, and requiring immediate action. Further studies should explore the appropriate level of parental participation in care in different settings, as well as support systems for parents, in alignment with the principle of family centered care.

None declared





49

CHARACTERISTICS OF INTERVENTION STUDIES ON FAMILY-CENTRED CARE IN NEONATAL INTENSIVE CARE UNITS: SCOPING REVIEWS OF RANDOMISED CONTROLLED TRIALS

Marzia Lazzerini^{1,2}, Dr. Ilaria Mariani¹, Jenny Bua¹, Cilia Vuillard¹, Martina Girardelli¹, Domenica Squillaci¹, Cristina Tumminelli¹

¹Institute for Maternal and Child Health, IRCCS “Burlo Garofolo”, Trieste, Italy, ²London School of Hygiene & Tropical Medicine

INTRODUCTION: Many family-centred care (FCC) interventions have been tested in NICUs, but a comprehensive review analysing characteristics of existing intervention studies is lacking.

MATERIAL AND METHODS We conducted a scoping review of RCTs on FCC interventions in NICUs. We searched PubMed, EMBASE, Web of Science and the Cochrane library up to January 31, 2022, reference lists of included studies and reviews. Interventions were grouped in five categories as per a previous Cochrane Review (educational, family support, communication, environmental, policies). Subgroup analyses by time-period and country income were conducted.

RESULTS Out of 6583 retrieved studies, 146 RCTs were identified, with 53 (36.3%) RCTs published after 2016. Overall, 118 (80.8%) RCTs were conducted in high-income, 26 (17.8%) in middle-income, none in low-income countries. Only 2 RCTs were multi-country. Very few studies were conducted in at-term babies (9 RCTs). A large variety of interventions combinations was tested, with 52 (35.6%) RCTs testing more than one category, with the most frequent category of intervention being the educational one (138 RCT, 94.5%) and with 24 RCTs (16.4%) including all five categories. We identified a total of 77 different intervention packages; head-to-head comparisons were lacking. The 146 RCTs reported on 425 different outcomes, classified in 13 major categories with parental mental health and neurobehavioural/developmental outcomes being the most frequent category respectively in parents (61 RCTs, 41.8%) and newborns (62 RCTs, 42.5%). For several categories of outcomes almost every RCT used different measurement methods. Educational interventions targeting specifically staff, fathers, siblings and other family members were lacking or poorly described. Only 1 RCT measured outcomes in health workers, 2 in siblings, and none considered other family members. We developed menus of interventions (Figure 1) and of measuring methods (not shown) which can be useful for both researchers and policy-makers.

CONCLUSIONS There is a large and raising number of RCTs on FCC interventions in NICUs, and specific research gaps. The large variety of FCC interventions, their high complexity, the need to tailor them to context, and major gaps in implementation, suggest that implementation research is the current priority. The menus developed may favour both further research and implementation.

None declared



Educational interventions (n=138)

Educational interventions for parents (n=138)

Participants

- Mothers only (n=55) vs Fathers only (n=0) vs Parents (n=82) vs Members different from parents (e.g., grandparents) (n=1)
- Additional presence of extended family members (e.g., siblings, grandparents) (n=15)

Format & Setting

- Theory only (n=16) vs Practice (e.g., bedside, observation) (n=121) vs not specified (n=1)
- One-on-one (n=106) vs group (n=22) vs not specified (n=26)
- Hospital based (n=41) vs hospital + home (n=29)

Frequency, duration

- Frequency: mini-course (n=67) vs weekly (n=29) vs daily (n=16) vs not specified (n=26)
- Minimum number of training sessions: ≤3 (n=19) vs >3 (n=92) vs not specified (n=27)
- Duration: ≤30 min (n=8) vs 30-60 min (n=25) vs >60 min (n=11) vs not specified (n=28)

Training topics*

- Parental role and interaction with the baby (n=127)
- Infant behaviors (n=116)
- Parent mental wellbeing (n=65)
- Transition hospital to home (n=63)
- Infant medical care (n=50)
- Other (n=5)

Delivery methods

- Oral: slides; phone calls; audiotape; interviews (n=118)
- Written: brochure, photos, etc. (n=66)
- Practical demonstrations (n=48)
- Digital/online resources (readings, podcast, video, newsletter) (n=19)
- Informative videos (n=10)
- Videorecording/observation of mother-infant interaction (plus feedback) (n=9)
- Smartphone app/website with private area (n=3)
- Not specified (n=2)

Additional tools

- Parent diary/workbook/checklist (eg parent record of own skills, activities, emotions) (n=53)
- Nurse logbook/medical chart to record parents skills (n=26)
- Baby diary: record for parents of newborn key parameters (eg weight, urine, feeding, regurgitation) (n=9)

Educational interventions for staff (n=81)

Participants

- Nurses (n=59); social workers (n=27); physicians (n=26); physical therapists (n=25); respiratory therapists (n=24); psychologists (n=20); psychiatrists (n=19); occupational, speech and language therapists (n=17); nutritionists (n=17); educators (n=17); students (n=8); researchers (n=5); midwives (n=1); pedagogic workers (n=1); all NICU staff (n=1)

Format & Setting

- Practice (e.g., direct observation, workshop) (n=37) vs not specified (n=44)
- Presence of formal assessments of competences (yes (n=12) vs not specified (n=19))
- Hospital based (n=18) vs hospital + home (n=18) vs not specified (n=45)

Frequency, duration

- Frequency: short-term course only (n=9) vs not specified (n=22)
- Minimum number of training sessions: ≤3 (n=9) vs >3 (n=25) vs not specified (n=47)
- Duration: retraining events (n=21) vs no (n=8) vs not available (n=50)

Training topics

- Specific education on the implemented intervention (n=49)
- Parental and family inclusion, pedagogic supportiveness and communication (n=37)
- Infant interaction with the environment and/or caregivers (n=35)
- Infant development and/or behavior (n=34)
- Parent mental health (n=17)
- Not specified (n=2)

Delivery methods

- Written: reading etc. (n=35)
- Oral: slides, workshop (n=34)
- Practical: bedside observation/guidance/role play (n=31)
- Audio/video recording (plus feedback) (n=4)
- Informative videos (n=2)
- University course certified by the University of Geneva (n=1)
- Not specified (n=46)

Family support interventions (n=48)

1. Peer-to-peer support (n=26)
2. Socio-psychological support (e.g. referral to social services/psychologist) (n=16)
3. Material support (delivery of equipment) (n=11)
4. Economical support (n=10)
5. Religious support (n=1)
6. Other (n=2)

Environmental interventions (n=39)

1. Useful utilities (e.g., rocking chair, designated Kangaroo care chair) (n=35)
2. Noise/light reduction (n=28)
3. Infant developmental care accessories (e.g., specialized hugging pillow, special pacifiers) (n=24)
4. Parent personalization of infant bed area (n=17)
5. Soft bedding in soft natural sheepskin, 100% cotton, velvet, silk (n=17)
6. Parent rest room (n=7)
7. Single family rooms (n=2)
8. Other (n=2)

Communication interventions between parents and staff (n=32)

1. Parent involvement in medical rounds (n=29)
2. Parent encouragement to seek information actively (n=22)
3. Parent participation in Parent Advisory Council or similar (n=17)
4. Parent involvement in compiling infant medical charts (n=7)
5. Other (n=2)

Family-centred policies (n=26)

Type of Policy

1. Dedicated salaried staff (n=17)
2. Nursery certification (e.g., NIDCAP) (n=17)
3. Family Advisory Council or similar (n=17)
4. Financial plan (n=17)
5. Parent involvement in caregiving (n=7)
6. Extended family members (sibling, grandparents) involvement/visits (n=2)

Policy level

- Institutional (n=17)
- NICU only (n=9)



68

PARENTAL STRESS, DEPRESSION, ANXIETY AND PARTICIPATION IN CARE IN NEONATAL INTENSIVE CARE UNIT: A CROSS-SECTIONAL STUDY IN ITALY COMPARING MOTHERS VERSUS FATHERS

Dr Jenny Bua¹, Paolo Dalena¹, Dr. Ilaria Mariani¹, Martina Girardelli¹, Maddalena Ermacora¹, Ursula Manzon¹, Sabrina Plet¹, Laura Travan¹, prof Marzia Lazzerini^{1,2}

¹Institute for Maternal and Child Health IRCCS "Burlo Garofolo", ²London School of Hygiene & Tropical Medicine

INTRODUCTION: Most studies on mental health of parents in NICU focused on mothers, while there is a lack of studies exploring parental gender differences in participation in care. Our study aimed at documenting the levels of stress, depression, anxiety and participation in care among mothers versus fathers of newborns hospitalised in a third level Italian NICU.

MATERIAL AND METHODS: Parental stress, depression and anxiety were assessed by the Parental Stressor Scale in NICU (PSS:NICU), the Edinburgh Postnatal Depression Scale (EPDS), and the State and Trait Anxiety scale (STAI). Participation in care was evaluated with the Index of Parental Participation (IPP). Differences between mothers and fathers were assessed with Mood's median test and z-test respectively for continuous and discrete variables. Multivariate analyses were performed.

RESULTS: 191 parents (112 mothers and 79 fathers) were enrolled. Mothers reported significantly higher median scores for stress (PSS:NICU: 2.9 vs 2.2, $p < 0.001$) and trait anxiety (STAI: 37 vs 32, $p = 0.004$) and higher depression rates (EPDS ≥ 12 : 43.8% vs 19.0%, $p < 0.001$). "High stress" (PSS:NICU ≥ 3) was reported by 45.5% of mothers compared to 24.1% of fathers ($p = 0.004$). The frequency of the three conditions simultaneously was significantly higher among mothers (20.0% vs 3.8%, $p = 0.016$), with the vast majority of mothers (76.0%) suffering from at least one condition compared to less than half of fathers (45.3%, $p < 0.001$). Participation in care was more frequent in mothers (median IPP: 19 vs 15, $p < 0.001$), with the exception of activities related to advocacy (median 5 vs 4, $p = 0.053$). In a multivariate analysis gender differences in mental health outcomes were confirmed with mothers being two times more likely to suffer "high stress" (OR_{adj} 2.16, 95%CI 1.11-4.35), $p = 0.026$, and almost four times more to have a positive screening for depression (OR_{adj} 3.89, 95%CI 1.88-8.57, $p < 0.001$)

CONCLUSIONS: Routine screening of mental distress among parents of infants in NICU is warranted. Gender differences need to be acknowledged in order to deliver tailored support and to promote collaboration with the family of vulnerable newborns. Knowledge and skills on how to prevent and cope with mental distress of parents should be part of the core curriculum of staff working in NICU.

None declared

DO'S Best Practice in Neonatology
and **DON'TS**

1st joint UENPS and EFCNI congress
neobestpractice.eu



3-5 July 2024
LJUBLJANA





83

PERCEIVED MATERNAL PARENTING SELF-EFFICACY (PMP S-E) AT THE LONGITUDINAL FOLLOW UP IN TERTIARY NICU

Mrs. SYLVIA GKANTSEVA PATSOURA¹, Mrs. GEORGIA KARAVANA¹, Mrs. MAGDALINI PAPADOPOULOU¹, Mr. PANTELEIMON PERDIKARIS², Mrs. ANASTASIA KARKANI¹, Mrs. RITA THEOFANOPOULOS¹, Mrs. CHRISTINA FAITAKI³, Mrs. MARTHA THEODORAKI¹

¹NICU, General Hospital Of Nikaia, ²Faculty of Nursing, University of Peloponnese, ³Physiotherapy Department, General Hospital of Nikaia

INTRODUCTION: A mother's self-efficacy as a parent not only affects her own mental health, but also influences the psychological development of her infant. The aim of this prospective, longitudinal study was to examine maternal self-efficacy (PSE) and to explore the factors with which it is associated.

MATERIAL AND METHODS: As a research tool, the Perceived Maternal Parental Self-Efficacy Scale (PMPS-E; Barnes and Adamson-Macedo, 2007) was used, as one of the most appropriate self-report questionnaires, including 20 items (total score 20-80), divided into four subscales: 1 Care Taking procedures, 2 Evoking Behaviors, 3 Reading Behaviors, 4 Situational Belief. The questionnaire was administered at the Longitudinal Follow-up Outpatient Clinic at the scheduled appointments of the third or sixth month of corrected age, during a period of four years. The results were correlated with the mothers' demographic profile (age, marital status, educational level, type and number of deliveries, mode of conception, mental health history) and the characteristics of the newborns (gestational age, birth weight, days of hospitalization, morbidity, outcome). The statistical data were processed with SPSS 29.0.

RESULTS: 104 mother-infant dyads (19-twins, 1-triplet) were recorded. Average age of mothers was 33 years (16-56), 91%-married, 72% - with basic and secondary education, 87.5%-CS, 20% with assisted pregnancy and 10% with a history of mental health (depression, bereavement, anxiety). The average gestational age was 33 weeks (26-41), birth weight-2020g, (680-4300), hospital days-35 (5-160) and 95% - with a good outcome.

A reduced total score was found in women with a history of mental health ($p=0.001$, 95%CI: 2.11-8.59, Cohen's $sd=1.14$ 95%CI: 0.44-1.84) and other health conditions ($p=0.001$, 95%CI: 1.63 -6.43, Cohen's $sd=0.86$ 95%CI: 0.34-1.38).

The Care Taking procedures subscale score was lower in women who had assisted reproduction, multiple pregnancy and prolonged neonatal hospitalization time ($U=472.0$, $z=-3.45$, $p<0.001$). A statistically significant negative correlation was found between the Reading Behaviors subscale and days of hospitalization (Spearman's $r_{ho}=-0.21$, $p=0.034$).

No significant relationship was found between PMP S-E and mother's age, marital status, educational level, type and number of deliveries.

CONCLUSIONS: Parenting maternal self-efficacy is influenced by mental and general health history, assisted reproduction, multiple pregnancy, and duration of hospital stay.



NONE DECLARED



96

WHAT IS THE MELATONIN LEVEL IN PRETERM INFANTS IN THE NEONATAL INTENSIVE CARE UNIT?

Prof. Halyna Pavlyshyn¹, Dr. Iryna Sarapuk¹

¹I. Horbachevsky Ternopil National Medical University

INTRODUCTION

Melatonin plays an important role in the organism functioning, child's growth and development. Considering the important role of this neurohormone in neuroprotection and neuroplasticity, as well as its antioxidant and pain-relieving properties, studying the characteristics of melatonin secretion in preterm infants is essential. Therefore, the aim of our research was to study the peculiarities of melatonin levels depending on various factors, and investigate how Kangaroo-mother care with skin-to-skin (SSC) influences its secretion in preterm infants.

MATERIAL AND METHODS

The study included 140 preterm infants who were treated in the NICU. The level of melatonin in urine samples was determined by enzyme-linked immunosorbent assay. The overall design was a baseline-response design. Urine was collected before (baseline) and after SSC.

RESULTS

The study included 140 preterm infants (19 extremely preterm (13.6%), 52 very preterm (51.4%), and 49 moderate preterm infants (35%). The mean gestational age (GA) of the study population was (31.1±2.4) weeks.

Melatonin level in the study group was 3.92 [2.38; 6.07] ng/ml. It was significantly lower in extremely and very preterm infants compared to moderate preterm (3.57 [2.10; 5.06] ng/ml vs 4.96 [3.20; 8.42] ng/ml, $p=0.007$), and was positively correlated with GA ($r=0.32$; $p<0.001$). Positive correlations were revealed between melatonin level and Apgar score at 1' ($r=0.31$; $p=0.001$) and at 5' ($r=0.35$; $p<0.001$). Melatonin level was lower in newborns with RDS ($p=0.011$). The results of multiple regression has shown that GA at birth was the most significant predictor of melatonin level in preterm infants ($p=0.001$).

There was a significant increase in melatonin level in preterm infants after SSC in comparison with baseline values (3.92 [2.46; 6.08] ng/ml vs 5.48 [3.41; 9.09] ng/ml before and after intervention, $p<0.001$). The level of melatonin increased more intensively after SSC in boys compared to girls ($p=0.049$), dependence on GA was not observed ($p>0.05$).

CONCLUSIONS

Gestational age, Apgar score, and RDS were mostly associated with melatonin level in preterm infants. The level of melatonin in extremely and very preterm infants was lower compared to moderate preterm, and was positively correlated with GA. Kangaroo mother care with SSC is associated with increased melatonin production in preterm infants.

The authors declare that they have no conflict of interest.

DO'S Best Practice in Neonatology
and **DON'TS**

1st joint UENPS and EFCNI congress
neobestpractice.eu



3-5 July 2024
LJUBLJANA





115

NURSES' AND PARENTS' PERCEPTIONS ABOUT FAMILY-CENTERED CARE AND ENVIRONMENTAL LIGHT AND SOUND IN THE NICU

Prof. Marilyn Aita^{1,2,3}, Professor Sonia Semenic^{3,4,5}, Gwenaëlle De Clifford-Faugère¹, Geneviève Laporte^{1,2}, Audrey Larone Juneau^{1,2,6}, Sébastien Colson^{3,7}, Professor Nancy Feeley^{3,4,8}

¹Faculty of Nursing, Université de Montréal, ²Research Centre Azrieli, CHU Sainte-Justine, ³Quebec Network on Nursing Intervention Research (RRISIQ), ⁴Ingram School of Nursing, McGill University, ⁵McGill University Health Center (MUHC) Research Center, ⁶CHU Sainte-Justine, ⁷Aix-Marseille Université, ⁸Centre for Nursing Research and Lady Davis Research Institute, Jewish General Hospital

Background. Both parents and nurses play an essential role in promoting preterm infants' growth and development in the Neonatal Intensive Care Unit (NICU). As nurses should encourage Family-Centered Care (FCC) in addition to a calm, quiet and welcoming environment for parents, it was pertinent to evaluate the nurses' and parents' perceptions of the FCC in the NICU as well as the physical environment to guide neonatal care. The objective of this study was to compare the nurses' and parents' perceptions of the NICU's ability to provide FCC along with the environmental control of light and sound.

Methods. Secondary analysis of two studies conducted in the same university-affiliated NICUs in Montreal, Canada. Overall, 109 nurses with more than 6 months of neonatal experience and 45 parents whose preterm infant were hospitalized for at least seven days composed the sample. The FCC-Questionnaire for nurses and parents (Shields & Tanner, 2004) assessed their perceptions of the NICU's ability to provide FCC; scores ranged from 20 to 80 with a higher score indicating more favorable perceptions. Two questionnaires assessed nurses' and parents' perceptions of NICU environmental control (Walsh-Sukys et al., 2001), where a higher score indicated higher a level of agreement about the appropriateness of the light and sound environment.

Results. No significant difference was found between the mean scores of nurses' and parents' perceptions about the NICU ability to provide FCC (respectively $x=64.1 \pm 5.37$ vs. 64.3 ± 8.44 , $p=.888$). Total mean scores for the appropriateness of the light environment did not indicate a significant difference between nurses ($x=15.4 \pm 2.5$) and parents ($x=16.1 \pm 2.6$) ($p=.128$). Also, mean scores for the appropriateness of the sound environment did not differ significantly between nurses ($x=10.1 \pm 2.9$) and parents ($x=10.8 \pm 2.4$) ($p=0.115$).

Conclusion. Perceptions of nurses and parents were similar for FCC as well as NICU light and sound environmental control. Nurses' and parents' perceptions about these practices were comparable even if parents spent less time in the NICU compared to nurses who are continuously working in the neonatal unit, suggesting that the care seems to be systematically and consistently offered by nurses.

None declared