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Women and Children's Current Awareness Bulletin

April 2019

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Title: A randomized controlled trial to evaluate the effectiveness of a brief motivational intervention to improve exclusive breastfeeding rates: Study protocol.

Citation: Journal of Advanced Nursing; Apr 2019; vol. 75 (no. 4); p. 888-897

Author(s): Franco-Antonio, Cristina; Calderón-García, Julián Fernando; Vilar-López, Raquel; Portillo-Santamaría, Mónica; Navas-Pérez, Juan Francisco; Cordovilla-Guardia, Sergio

Aims: To estimate the effectiveness of a brief motivational intervention (BMI) in increasing the duration of exclusive breastfeeding in the first 6 months postpartum. A complementary aim was to examine a potential mediating role of breastfeeding self-efficacy in the effectiveness of the BMI.

Background: Breastfeeding is associated with benefits for babies and mothers' health. Among the pool of techniques used to encourage healthy behaviours, BMI is highlighted based on the principles of motivational interviewing. One of the main components of these interventions is the promotion of self-efficacy, which, in fact, is a key factor for breastfeeding success.

Design: A multi-centre randomized controlled clinical trial of parallel groups.

Methods: Women who begin to breastfeed in the first hour after birth will be randomly assigned to the intervention group (receiving a BMI at immediate postpartum plus a telephone booster at the 1st and 3rd month postpartum) or the control group (receiving standard breastfeeding education at the same time). Outcome measures include the following: breastfeeding, breastfeeding self-efficacy, general self-efficacy, and postnatal depression. Data will be collected before the intervention and at the 1st, 3rd, and 6th month after birth. The study protocol has been approved by Badajoz Ethics Committee of Clinical Research in October 2017.

Discussion: This study will identify the effectiveness of BMI in improving exclusive breastfeeding rates. The findings will give useful evidence to health professionals about how to support breastfeeding. Impact: This study will address the low-exclusive breastfeeding rates, that in our country are far lower than World Health Organization's recommendation.

Title: Impact of maternal obesity and breastfeeding intention on lactation intensity and duration.

Citation: Maternal & Child Nutrition; Apr 2019; vol. 15 (no. 2)

Author(s): Marshall, Nicole E.; Lau, Bernard; Purnell, Jonathan Q.; Thornburg, Kent L.

Abstract: Exclusive breastfeeding (EBF) has numerous maternal health benefits. However, EBF rates are lower in mothers with obesity. We sought to better understand whether maternal body composition measurements in early pregnancy are also predictive of lower rates of EBF. Healthy pregnant women with prepregnancy body mass index (BMI) of 17.5–51 kg/m2 underwent determination of percent body fat (% body fat) in early (12–16 weeks) and late (37 weeks) gestation. Intent and duration of EBF were determined by surveys completed at 6 weeks and 6 months postpartum (PP). Unadjusted and adjusted analyses were performed to compare EBF rates and weaning by maternal BMI and % body fat. Increasing BMI and % body fat in early pregnancy were significantly associated with lower rates of EBF among women intending EBF. Women with BMI ≥ 25 were less likely to be EBF at 6 weeks and 6 months PP compared with women of normal BMI (67 and 37% vs. 91 and 79%, P value 0.005 and 0.001, respectively). Among primiparous women intending EBF, 100% of women in the lowest two body fat quartiles in early pregnancy were EBF at

6 weeks PP compared with 66.7 and 63.6% of women in the higher quartiles (P = 0.03). Lactation cessation by 6 months PP was higher with increasing maternal BMI (P = 0.001). Maternal obesity in early gestation is associated with lower EBF rates among women intending EBF and earlier weaning. Excess adiposity in early pregnancy may impede EBF.

Title: Women's views about a free breast pump service: Online survey informing intervention development.

Citation: Maternal & Child Nutrition; Apr 2019; vol. 15 (no. 2)

Author(s): McInnes, Rhona J.; Gillespie, Nicola; Crossland, Nicola; Hall Moran, Victoria; Hoddinott, Pat

Abstract: Improving breastfeeding outcomes is a global priority; however, in the United Kingdom, continuation of breastfeeding remains low. Growing empirical evidence suggests a free breast pump service might be an acceptable and feasible incentive intervention to improve breastfeeding outcomes and reduce heath inequalities. To inform intervention development, we conducted an online survey with women recruited via social media using snowball sampling. Data were analysed descriptively (closed questions) with qualitative thematic analysis (free text). The survey was completed by 666 women, most of whom had recently breastfed and used a breast pump. Participants agreed that free pump hire (rental/loan; 567 women; 85.1%) or a free pump to keep (408; 61.3%) should be provided. Free text comments provided by 408 women (free pump) and 309 women (free hire) highlighted potential benefits: helping women to continue breastfeeding; express milk; overcome difficulties; and pump choice. Concerns are possible effect on breast milk supply, reduced breastfeeding, pumps replacing good support for breastfeeding, and pump hire hygiene. Personal and societal costs are important issues. Some suggested a pump service should be for low-income mothers, those with feeding difficulties or sick/preterm infants. A one-size service would not suit all and vouchers were proposed. Some suggested fees and deposits to prevent waste. To our knowledge, this is the first study reporting views about the acceptability of providing a free breast pump hire service. Mothers support and wish to have a say in breast pump service development. Future evaluations should address impact on feeding outcomes, professional support, hygiene for hired pumps, and costs.

Title: Manual therapy for the pediatric population: a systematic review.

Citation: BMC Complementary & Alternative Medicine; Mar 2019; vol. 19 (no. 1)

Author(s): Parnell Prevost, Carol; Gleberzon, Brian; Carleo, Beth; Anderson, Kristian; Cark, Morgan; Pohlman, Katherine A.

Background: This systematic review evaluates the use of manual therapy for clinical conditions in the pediatric population, assesses the methodological quality of the studies found, and synthesizes findings based on health condition. We also assessed the reporting of adverse events within the included studies and compared our conclusions to those of the UK Update report.

Methods: Six databases were searched using the following inclusion criteria: children under the age of 18 years old; treatment using manual therapy; any type of healthcare profession; published between 2001 and March 31, 2018; and English. Case reports were excluded from our study. Reference tracking was performed on six published relevant systematic reviews to find any missed article. Each study that met the inclusion criteria was screened by

two authors to: (i) determine its suitability for inclusion, (ii) extract data, and (iii) assess quality of study.

Results: Of the 3563 articles identified, 165 full articles were screened, and 50 studies met the inclusion criteria. Twenty-six articles were included in prior reviews with 24 new studies identified. Eighteen studies were judged to be of high quality. Conditions evaluated were: attention deficit hyperactivity disorder (ADHD), autism, asthma, cerebral palsy, clubfoot, constipation, cranial asymmetry, cuboid syndrome, headache, infantile colic, low back pain, obstructive apnea, otitis media, pediatric dysfunctional voiding, pediatric nocturnal enuresis, postural asymmetry, preterm infants, pulled elbow, suboptimal infant breastfeeding, scoliosis, suboptimal infant breastfeeding, temporomandibular dysfunction, torticollis, and upper cervical dysfunction. Musculoskeletal conditions, including low back pain and headache, were evaluated in seven studies. Twenty studies reported adverse events, which were transient and mild to moderate in severity.

Conclusions: Fifty studies investigated the clinical effects of manual therapies for a wide variety of pediatric conditions. Moderate-positive overall assessment was found for 3 conditions: low back pain, pulled elbow, and premature infants. Inconclusive unfavorable outcomes were found for 2 conditions: scoliosis (OMT) and torticollis (MT). All other condition's overall assessments were either inconclusive favorable or unclear. Adverse events were uncommonly reported. More robust clinical trials in this area of healthcare are needed. Trial registration: PROSPERA registration number: CRD42018091835

Title: Incidence of severe critical events in paediatric anaesthesia in the United Kingdom: secondary analysis of the anaesthesia practice in children observational trial (APRICOT study).

Citaiton: Anaesthesia; Mar 2019; vol. 74 (no. 3); p. 300-311

Author(s): Engelhardt, T.; Ayansina, D.; Bell, G. T.; Oshan, V.; Rutherford, J. S.; Morton, N. S.

Abstract: The anaesthesia practice in children observational trial of 31,127 patients in 261 European hospitals revealed a high (5.2%) incidence of severe critical events in the peri-operative period and wide variability in practice. A sub-analysis of the UK data was undertaken to investigate differences compared with the non-UK cohort in the incidence and nature of peri-operative severe critical events and to attempt to identify areas for quality improvement. In the UK cohort of 7040 paediatric patients from 43 hospitals, the overall incidence of peri-operative severe critical events was lower than in the non-UK cohort (3.3%, 95%CI: 2.9-3.8 vs. 5.8%, 95%CI: 5.5-6.1, RR 0.57, $p < 0.001$). There was a lower rate of bronchospasm (RR 0.22, 95%CI: 0.14-0.33; $p < 0.001$), stridor (RR 0.42, 95%CI: 0.28-0.65; $p < 0.001$) and cardiovascular instability (RR 0.69, 95%CI: 0.55-0.86; $p = 0.001$) than in the non-UK cohort. The proportion of sicker patients where less experienced teams were managing care was lower in the UK than in the non-UK cohort (10.4% vs. 20.4% of the ASA physical status 3 and 9% vs. 12.9% of the ASA physical status 4 patients). Differences in work-load between centres did not affect the incidence and outcomes of severe critical events when stratified for age and ASA physical status. The lower incidence of cardiovascular and respiratory complications could be partly attributed to more experienced dedicated paediatric anaesthesia providers managing the higher risk patients in the UK. Areas for quality improvement include: standardisation of serious critical event definitions; increased reporting; development of evidence-based protocols for management of serious critical events; development and rational use of paediatric peri-operative risk assessment scores; implementation of current best practice in provision of competent paediatric anaesthesia services in Europe; development of specific training in the management of

severe peri-operative critical events; and implementation of systems for ensuring maintenance of skills.

Title: Quality improvement in the NICU: increasing the use of own mother's milk.

Citation: Infant; Mar 2019; vol. 15 (no. 2); p. 65-68

Author(s): James, Katie; Bolla, Paul; Sakalidis, Vanessa; Schärer-Hernán, Nania G.

Title: Impact on delayed newborn bathing on exclusive breastfeeding rates, glucose and temperature stability, and weight loss.

Citation: Journal of Neonatal Nursing; Apr 2019; vol. 25 (no. 2); p. 74-77

Author(s): Chamberlain, Jill; McCarty, Susan; Sorce, Joanne; Leesman, Betsy; Schmidt, Sarah; Meyrick, Elizabeth; Parlier, Simone; Kennedy, Linda; Crowley, Debra; Coultas, Lori

Objective: Determine impact delayed newborn bathing for 24 hours has on exclusive breastfeeding rates, temperature and glucose stability, and percentage of weight loss and, to determine if there was a difference in the nurses' knowledge and comfort levels regarding delayed bathing pre and post implementation.

Design: Pre-post retrospective chart review and, pre-post survey.

Setting: Midwestern health system with three hospitals that has a combined average delivery rate of 2100 births.

Participants: 330 charts were reviewed pre-implementation, 330 charts were reviewed post-implementation, and 100 RNs were asked to participate in the pre and post-survey.

Methods: Newborn baths were delayed 24 hours after birth unless contraindicated by a blood borne pathogen or upon parental requests.

Results: Post-intervention there was a significant decrease in the number of blood glucose level checks (p =.002) and the amount of blood glucose levels equal or below 45 (p =.001). There was a trend in decreased weight loss post-intervention, but was not significant (p =.227). Cold stress significantly decreased (p <.001) post-intervention. Exclusive breastfeeding rates did not change. Nurses' perception of comfort and knowledge level increased post-intervention.

Conclusion: Delaying an infant's bath until 24 hours after birth seems to have positive impact on the infant's temperature regulation as well as glucose stability. Retaining vernix on neonates through the nursing practice of delayed bathing may improve neonates' temperature and glucose stability.

Title: Evaluation of the Family and Infant Neurodevelopmental Education (FINE) programme in the UK.

Citation: Journal of Neonatal Nursing; Apr 2019; vol. 25 (no. 2); p. 93-98

Author(s): Warren, Inga; Mat-Ali, Ezam; Green, Mark; Nyathi, Dumisani

Aims: Family and Infant Neurodevelopmental Education (FINE) is a comprehensive, multidisciplinary educational pathway designed to support quality improvements in infant and family centred developmental care in neonatal services. This study aims to evaluate the impact of FINE on neonatal care in the UK.

Methods: A mixed method evaluation was based on two surveys of staff to explore perceptions of change in the care of infants, parent participation, and staff experience since the introduction of FINE. Survey 1 (S1) was conducted across a regional neonatal network where all units had sent delegates to FINE foundation courses. The Chi Squared Test was used to compare scores indicating that practice had got better, worse or stayed the same; Z numbers showed differences in perceptions between those staff who had and had not attended FINE courses. An on-line survey (S2) explored how participants from many different areas of the UK perceived the impact of FINE courses on their practice.

Results: Staff responses to Survey 1 (n = 95) indicated significant improvements in all areas of impact ($p < 0.001$) regardless of whether participants had (n = 33) or had not (n = 62) attended FINE courses. In general those that had attended were more positive about all areas of practice except for "infant safety" where both groups had equally positive views. Survey 2 (n = 44) mirrored these results with 70–95% of participants indicating that their practice had improved.

Conclusion: The results of this study suggest that FINE provides appropriate education for enhancing infant and family centred developmental care in neonatal units. Highlights • An infant and family centred approach to neonatal care has benefits for infants and families. • Family and Infant Neurodevelopmental Education (FINE) is an education pathway for all neonatal healthcare professionals. • Staff surveys indicated positive perceptions of FINE on the care of infants, parent participation, and staff experience.

Title: Parents' experiences of diagnosis and care following the birth of a child with cleft lip and/or palate.

Citation: British Journal of Midwifery; Mar 2019; vol. 27 (no. 3); p. 151-160

Author(s): Costa, Bruna; Williams, Jennifer R; Martindale, Anna; Stock, Nicola M

Background: Receiving the news that their child has a health condition, such as a cleft lip and/or palate (CL/P), can have a considerable psychological impact on parents, yet research has highlighted parental dissatisfaction and service-related issues.

Aims: To investigate the experiences of parents of children born with CL/P in relation to postnatal diagnosis and neonatal care.

Method: Data were collected from 470 parents using an online mixed-methods survey.

Findings: The majority of participants received their diagnosis and postnatal care from a midwife. Many (61%) were satisfied with their overall diagnostic experience; however, participants also perceived a lack of sensitivity, knowledge and empathy from hospital staff. Further issues were raised regarding the implications of a 'delayed' diagnosis including feeding difficulties.

Conclusion: Better training and support for midwives is recommended to address the challenges associated with the postnatal diagnosis and neonatal care of children with CL/P.

Title: "Golden Hour" quality improvement intervention and short-term outcome among preterm infants.

Citation: Journal of Perinatology; Mar 2019; vol. 39 (no. 3); p. 387-392

Author(s): Peleg, Ben; Globus, Omer; Granot, Maya; Leibovitch, Leah; Mazkereth, Ram; Eisen, Irit; Morag, Iris; Stern, Orly; Rozen, Chava; Maayan-Metzger, Ayala; Strauss, Tzipora

Objective: To evaluate the impact of a quality improvement intervention during the first hour of life ("Golden Hour") on short-term preterm neonatal outcome.

Study design: A comprehensive protocol designed for initial stabilization and treatment of preterm infants that included cord blood sampling, use of a dedicated resuscitation room and improved team communication using Crew Resource Management tools. The infants admitted before and after implementation of the protocol were retrospectively compared in a matched case-control design.

Results: There were 194 infants in the intervention group and 194 controls. Admission temperatures improved significantly from a mean of 35.26 °C to 36.26 °C ($P < 0.001$), and late-onset sepsis and bronchopulmonary dysplasia rates lowered significantly ($P = 0.035$ and $P = 0.028$, respectively) in the intervention group. There was trend towards reduction in early blood transfusion and ventilation duration.

Conclusions: A "Golden Hour" quality improvement intervention was of significant benefit for preterm neonates. Further follow-up to assess long-term effects is warranted.

Title: Evaluating Teamwork in the Neonatal Intensive Care Unit: A Survey of Providers and Parents.

Citation: Advances in neonatal care : official journal of the National Association of Neonatal Nurses; Mar 2019

Author(s): Masten, Marjorie; Sommerfeldt, Susan; Gordan, Suzanne; Greubel, Elizabeth; Canning, Caroline; Lioy, Janet; Chuo, John

Background: A unified vision of team mission, psychologically safe practice environment, effective communication, and respect among team members are key characteristics of an effective interdisciplinary neonatal intensive care unit (NICU) team.

Purpose: A quality improvement team in a quaternary NICU surveyed parents, physicians, and nurses on perceptions of teamwork to identify opportunities for improvement.

Design/Methods: Parents and healthcare staff (n = 113) completed an anonymous survey from May to July of 2014 to assess team roles and membership, team qualities, shared mission, psychological safety, hierarchy, communications, and conflict awareness. An expert panel assigned questions into one or more characteristics of team intelligence.

Results: Physicians, nurses, and parents perceive their roles and the composition of the healthcare team differently. Most providers reported a shared mission and having a cooperative spirit as their teams' best attributes. While most nurses chose safety as most important, the majority of doctors chose treatment plan. Parents consider tenderness toward their infant, providing medical care and answers to their questions important. All expressed varying concerns about psychological safety, conflict resolution, and miscommunications.

Implications for Practice: This survey identifies strengths and gaps of teamwork in our NICU and provides insight on necessary changes that need to be made to improve collaboration among the interdisciplinary care team including parents.

Implications for Research: This quality improvement report identifies aspects of team care delivery in NICUs that require further study. The concept of team intelligence and its impact on team effectiveness invites in-depth exploration.

Title: Menarche, pregnancies, and breastfeeding do not modify long-term prognosis in multiple sclerosis.

Citation: Neurology; Mar 2019; vol. 92 (no. 13); p. e1507

Author(s): Zuluaga, María I; Otero-Romero, Susana; Rovira, Alex; Perez-Hoyos, Santiago; Arrambide, Georgina; Negrotto, Laura; Galán, Ingrid; Río, Jordi; Comabella, Manuel; Nos, Carlos; Arévalo, María Jesús; Vidal-Jordana, Angela; Castilló, Joaquin; Rodríguez, Breogán; Midaglia, Luciana; Mulero, Patricia; Mitjana, Raquel; Auger, Cristina; Sastre-Garriga, Jaume; Montalban, Xavier; Tintoré, Mar

Objective: To investigate the effect of menarche, pregnancies, and breastfeeding on the risk of developing multiple sclerosis (MS) and disability accrual using a multivariate approach based on a large prospective cohort of patients with clinically isolated syndrome (CIS).

Methods: A cross-sectional survey of the reproductive information of female participants in a CIS cohort was performed. We examined the relationship of age at menarche with the risk of clinically definite MS (CDMS), McDonald 2010 MS, and Expanded Disability Status Scale (EDSS) 3.0 and 6.0. The effect of pregnancy (before and after CIS) and breastfeeding in the risk of CDMS, McDonald 2010 MS, and EDSS 3.0 was also examined. Univariate and multivariate analyses were performed and findings were confirmed using sensitivity analyses and a propensity score model.

Results: The data of 501 female participants were collected. Age at menarche did not correlate with age at CIS and was not associated with the risk of CDMS or EDSS 3.0 or 6.0. Pregnancy before CIS was protective for CDMS in the univariate analysis, but the effect was lost in the multivariate model and did not modify the risk of EDSS 3.0. Pregnancy after CIS was protective for both outcomes in univariate and multivariate analyses when pregnancy was considered a baseline variable, but the protective effect disappeared when analyzed as a time-dependent event. Breastfeeding did not modify the risk for the 3 outcomes.

Conclusions: These results demonstrate that menarche, pregnancies, and breastfeeding did not substantially modify the risk of CDMS or disability accrual using a multivariable and time-dependent approach.

Title: Lingual frenotomy in neonates: past, present, and future.

Citation: The British journal of oral & maxillofacial surgery; Mar 2019

Author(s): Ganesan, K; Girgis, S; Mitchell, S

Abstract: During the last decade, increasing awareness of breastfeeding and its health benefits has not been reflected in the provision of lingual frenotomy in neonates with tongue-tie. This could be because of inconsistencies in our understanding of the importance and treatment of ankyloglossia. In this review, we discuss the current clinical guidance on diagnosis and management, and the future of such a service in the early postpartum period.

Title: The perceptions and experiences of women with a BMI ≥30kg/m2 who breastfeed: A meta-synthesis.

Citation: Maternal & child nutrition; Mar 2019 ; p. e12813

Author(s): Lyons, Stephanie; Currie, Sinead; Peters, Sarah; Lavender, Tina; Smith, Debbie M

Abstract: Breastfeeding has copious health benefits for both mother and child, but rates of initiation and maintenance amongst women with a BMI ≥30kg/m2 are low. Few interventions aiming to increase these rates have been successful, suggesting that breastfeeding behaviour in this group is not fully understood. Therefore, this review aimed to systematically

identify and synthesise the qualitative literature which explored the perceptions and experiences of women with a BMI ≥30kg/m2 who breastfed. The search identified five eligible papers, and a meta-ethnographic approach was taken to synthesise the findings. One theme was identified: 'weight amplifies breastfeeding difficulties', revealing that women with a BMI ≥30kg/m2 experience common breastfeeding difficulties to a greater degree. In particular, women with a BMI ≥30kg/m2 struggle with the impact of medical intervention, doubt their ability to breastfeed, and need additional support. These findings can inform understanding of breastfeeding models, future research directions, intervention development and antenatal and postnatal care for women with a BMI ≥30kg/m2 .

Title: Exposure to prenatal secondhand smoke and early neurodevelopment: Mothers and Children's Environmental Health (MOCEH) study.

Citation: Environmental health : a global access science source; Mar 2019; vol. 18 (no. 1); p. 22

Author(s): Lee, Myeongjee; Ha, Mina; Hong, Yun-Chul; Park, Hyesook; Kim, Yangho; Kim, Eui-Jung; Kim, Yeni; Ha, Eunhee

Background: The association between exposure to secondhand smoke (SHS) during pregnancy and a child's neurodevelopment has not been established yet. We explored the association between prenatal exposure to SHS and neurodevelopment at 24 months of age considering genetic polymorphism and breastfeeding in 720 mothers and their offspring enrolled in the Korean multicenter birth cohort study (Mothers and Children Environmental Health, MOCEH).

Methods: We quantified urine cotinine concentrations in mothers once from 12th to 20th gestational weeks and excluded those whose urine cotinine levels exceeded 42.7 ng/ml to represent SHS exposure in early pregnancy. Mental developmental index (MDI) and psychomotor developmental index (PDI) values were measured using the Korean version of the Bayley Scales of Infant Development II (K-BSID-II) at 24 months of age. A general linear model was used to assess the relationship between maternal urinary cotinine level and neurodevelopment.

Results: MDI scores were inversely associated with cotinine [β = - 2.73; 95% confidence interval (CI): - 5.32 to - 0.15] in children whose mothers had early pregnancy urinary cotinine levels >1.90 ng/ml. No association was evident in children whose mothers had cotinine levels ≤1.90 ng/ml. This negative association was more pronounced in children whose mothers had both Glutathione S-transferases mu 1 (GSTM1) and theta 1 (GSTT1) null type [β = - 5.78; 95% CI: -10.69 to - 0.87], but not in children whose mothers had any present type of GSTM1/GSTT1 [β = - 1.64; 95% CI: -4.79 to 1.52]. The association was no longer significant when children received breast milk exclusively for up to 6 months [β = - 0.24; 95% CI: -4.69 to 4.20] compared to others [β = - 3.75; 95% CI: -7.51 to 0.00]. No significant association was found for PDI.

Conclusions: Maternal exposure to SHS during pregnancy may result in delayed MDI in early childhood. This effect might be modified by genetic polymorphism and breastfeeding behavior.

Title: The opinions regarding smoking behaviors in the postpartum period of the women who quit smoking during pregnancy: A qualitative study.

Citation: Perspectives in psychiatric care; Mar 2019

Author(s): Kocatas, Semra; Guler, Nuran; Sezer, Recep Erol

Purpose: Research is designed to know the opinions of women who quit smoking during pregnancy on changing smoking behaviors during the postpartum period.

Design and Methods: Forty-seven women who quit smoking during pregnancy were included in the sample of study. Data were collected using in-depth face-to-face interview method with semistructured interview forms.

Findings: Most of the reasons of women about their restarting were either individual such as the need to cope with stressful events in the family, or baby-related such as termination of breastfeeding.

Practice Implications: Determining causes of relapse will guide nurses to develop effective intervention to reduce smoking rates in women.

Title: Emerging Research Paradigm for Infant Drug Exposure Through Breast Milk.

Citation: Current pharmaceutical design; Mar 2019

Author(s): Ito, Shinya

Background: Information on drug secretion into milk is insufficient due to exclusion of lactating women from clinical trials and drug development processes. As a result, non-adherence to necessary drug therapy and discontinuation of breastfeeding occur, even if the predicted level of infant exposure is low. In contrast, inadvertent infant exposure to drugs in breast milk continues to happen due to lack of rational risk assessment, resulting in serious toxicity cases including death. This problem is multifactorial, but one of the key elements is a lack of pharmacokinetic information on drug secretion into milk and resultant infant exposure levels, the first line of evidence for risk assessment.

Methods: To solve this important problem, a combination of population pharmacokinetics approach (to estimate averages and variations of drug concentration profiles in milk) and physiologically-based pharmacokinetics modeling of infants (to predict the population profiles of infant drug exposure levels) appears useful.

Results: This review describes the feasibility to develop such approaches, and the knowledge gaps that still exist.

Conclusions: in order to facilitate participant enrollment and data acquisition in a timely manner, networks of investigators become crucial.

Title: Updates in the management of inflammatory bowel disease during pregnancy.

Citation: The Medical journal of Australia; Mar 2019

Author(s): Bell, Sally J; Flanagan, Emma K

Abstract: The best pregnancy outcomes for women with inflammatory bowel disease (IBD) occur when their disease is in remission at conception and remains in remission throughout pregnancy. Active IBD can lead to adverse pregnancy outcomes, including spontaneous abortion, pre-term birth and low birthweight. The majority of women with IBD who are taking maintenance medication will require medication throughout the pregnancy to prevent disease relapse. Most IBD medications are considered safe in pregnancy and breastfeeding, except for methotrexate. Pre-conception counselling should be arranged with the patient's IBD specialist and should include discussions regarding the importance of optimising disease control before and during pregnancy as well as the medication management plan for

pregnancy. Patients with IBD should be reassured that their fertility is normal when the disease is quiescent, with the exception of women who have had pelvic surgery. IBD activity should be carefully monitored during pregnancy using non-invasive techniques, and disease flares during pregnancy should be treated promptly with escalation of therapy in consultation with the patient's IBD specialist. Mode of delivery should be determined by obstetric need; however, caesarean delivery is preferred for women with a history of ileal pouch anal anastomosis surgery or active perianal Crohn's disease.

Title: Easy Diagnosis of Jaundice: A Smartphone-based Nanosensor Bioplatform using Photoluminescent Bacterial Nanopaper for Point-of-Care Diagnosis of Hyperbilirubinemia.

Citation: ACS sensors; Mar 2019

Author(s): Tabatabaee, Raziyeh Sadat; Golmohammadi, Hamed; Ahmadi, Seyyed Hamid

Abstract: One of the concerns of parents in the first days of their baby's birth is the baby's risk of jaundice/hyperbilirubinemia. This is because more than 60 percent of babies are born with jaundice that, if not timely diagnosed and subsequently treated, can lead to serious damage to their health. On the other hand, despite recent progresses in sensors technology for clinical applications, the development of easy-to-use, cost-effective, sensitive, specific and portable diagnostic devices, which use non-toxic and biodegradable materials in their design and fabrication, are still demanded. Herein we present an easy-to-use, cost-effective, selective, non-toxic and disposable photoluminescent nanopaper-based assay kit with a smartphone readout for easy diagnosis of neonatal jaundice through visual determination of Bilirubin (BR) in infants' blood samples. The developed BR assay kit comprises highly photoluminescent carbon dots (CDs) sensing probes embedded in a bacterial cellulose (BC) nanopaper substrate (CDBN). The photoluminescence (PL) of the developed BR sensor is quenched in the presence of BR as a PL quencher and then selectively recovered upon blue light (λ=470 nm) exposure, due to converting the unconjugated BR to the colourless oxidation products(non-PL quencher) through BR photoisomerization and photooxidation, that subsequently leads to selective PL enhancing of CDBN. The recovered PL intensity of the developed BR assay kit, which was monitored by integrated smartphone's camera, was linearly proportional to the concentration of BR in the range of 2-20 mg dL-1. The feasibility of real application of the fabricated smartphone-based BR assay kit was also confirmed via comparing the results of our method with a clinical reference method for determination of BR concentration in infant's blood samples. Taking the advantages of the non-toxicity and the extraordinary physicochemical properties of photoluminescent BC nanopaper as sensing substrate, along with those of smartphone technology, we believe that our developed smartphone-based BR assay kit, as an easy-to-use, cost-effective (~0.01 Euro per test), portable and novel sensing bioplatform, can be potentially exploited for sensitive, specific, rapid and easy BR detection and jaundice diagnosis at the point-of-care (POC) and routine clinical laboratories as well.

Title: Reducing Pressure Injuries in the Pediatric Intensive Care Unit.

Citation: The Nursing clinics of North America; Mar 2019; vol. 54 (no. 1); p. 127-140

Author(s): Cummins, Kristin A; Watters, Richard; Leming-Lee, Treasa 'Susie'

Abstract: This quality improvement project used the Model for Improvement including the Plan-Do-Study-Act cycle of change framework to educate pediatric intensive care unit

(PICU) nurses on risk factors for pediatric pressure injuries and prevention strategies, improve turning compliance for PICU patients, and implement an electronic trigger to order nutrition consultations on all patients with a Braden Q score less than 16. The quality improvement project decreased preventable patient harm to PICU patients by decreasing the pressure injury incidence rate from 8% to 3% in the 6-week time period.

Title: Reduction of hospital-acquired infections in the neonatal intensive care unit: A long-term commitment.

Citation: American journal of infection control; Mar 2019

Author(s): Flidel-Rimon, Orna; Guri, Alex; Levi, Dina; Ciobotaro, Pnina; Oved, Maly; Shinwell, Eric S

Abstract: We instituted quality improvement program. We compare the infection rate before (2011-2012) and after (2013-2015). Central line associated blood stream infection episodes decreased from 15.2 to 2.29 episodes per 1000 catheter days (P = .004). We found two major changes, 1. Hand hygiene increased mainly "before aseptic task", from 69.9% to 89.9% and 2. A significant decrease in the length of the catheter use from 5.4 ± 4.5 before to 4.4 ± 2.5 days after the intervention (P = .001).

Title: Implementing a Parent Education Program in the Special Care Nursery.

Citation: Journal of pediatric health care : official publication of National Association of Pediatric Nurse Associates & Practitioners; 2019; vol. 33 (no. 2); p. 131-137

Author(s): Hunter, La Monica L; Blake, Stephanie; Simmons, Catherine; Thompson, Julie; Derouin, Anne

Background: Parents of preterm hospitalized infants, whose lengths of stay can range from a few days to several months, often experience emotional liability. Because the Neonatal Intensive Care Unit (NICU) or Special Care Nursery (SCN) is a stressful and intimidating environment, prompt attention should be given to reducing parental stress and increasing parental confidence in preparation to care for their child post-discharge.

Methods: A quality improvement pilot project was designed to evaluate the parent education and support program, titled HUG Your Baby, in a Level II SCN for its ability to decrease stress and increase confidence for postpartum mothers of preterm infants born at less than 35 weeks gestation during the infant's hospitalization.

Results: The outcomes demonstrated a statistically significant decrease in maternal stress and a statistically significant increase in maternal confidence.

Discussion: The HUG Your Baby program is an effective parent education and support program that would benefit NICU and SCN families.

Title: Waterfalls and Handoffs: A Novel Physician Staffing Model to Decrease Handoffs in a Pediatric Emergency Department.

Citation: Annals of emergency medicine; Mar 2019; vol. 73 (no. 3); p. 248-254

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Study Objective: Patient handoffs at shift change in the emergency department (ED) are a well-known risk point for patient safety. Numerous methods have been implemented and studied to improve the quality of handoffs to mitigate this risk. However, few have investigated processes designed to decrease the number of handoffs. Our objective is to evaluate a novel attending physician staffing model in an academic pediatric ED that was designed to decrease patient handoffs.

Methods: A multidisciplinary team met in August 2012 to redesign the attending physician staffing model. The team sought to decrease patient handoffs, optimize provider efficiency, and balance workload without increasing total attending physician hours. The original model required multiple handoffs at shift change. This was replaced with overlapping "waterfall" shifts. This was a retrospective quality improvement study of a process change that evaluated the percentage of intradepartmental handoffs before and after implementation of a new novel attending physician staffing model. In addition, surveys were conducted among attending physicians and charge nurses to inquire about perceived impacts of the change.

Results: A total of 43,835 patient encounters were analyzed. Immediately after implementation of the new model, there was a 25% reduction in the proportion of encounters with patient handoffs, from 7.9% to 5.9%. A survey of physicians and charge nurses demonstrated improved perceptions of patient safety, ED flow, and job satisfaction.

Conclusion: This new emergency physician staffing model with overlapping shifts decreased the proportion of patient handoffs. This innovative system can be implemented and scaled to suit EDs that have more than single-physician coverage.

Title: Transcutaneous bilirubin levels of newborn infants performed abdominal massage: A randomized controlled trial.

Citation: Journal for specialists in pediatric nursing : JSPN; Feb 2019 ; p. e12237

Author(s): Gözen, Duygu; Yılmaz, Özge Eda; Dur, Şadiye; Çağlayan, Sabiha; Taştekin, Ayhan

Purpose: This study was designed as a randomized controlled trial to determine the effect of abdominal massage on bilirubin levels of newborn infants.

Design and Methods: The sample group consisted of 90 newborn infants (experimental group: 44; control group: 46) who were followed in a university hospital after birth between March and August 2017. The data were collected using an Information Form, Observation Form, and Transcutaneous Bilirubin Level Meter. Bilirubin levels were measured 1 hr after the first breastfeeding in both groups. The abdominal massage was performed for 5 min in each session, was continued in three sessions per day; was completed in totally six sessions for 2 days in infants in the experimental group. The second bilirubin measurements were repeated at the 48th hour after the birth and bilirubin levels were compared in two groups. The Student t test was used to evaluate the normally distributed data and the Mann-Whitney U test was used to carry out statistics in nonnormal distribution of quantitative data.

Results: The bilirubin levels of the groups (experimental group: 1.06 ± 0.92; control group: 1.01 ± 0.98) were statistically similar before abdominal massage, $t(88) = 0.25$, $p = 0.803$. The difference of the bilirubin levels was compared in the groups before and after abdominal massage. The increase of bilirubin levels in the experimental group (1.96 ± 1.69 mg/dl) was statistically significantly lower compared with the control group (2.80 ± 2.30 mg/dl), $t(88) = -1.974$, $p = 0.048$.

Practice Implications: Abdominal massage is effective to reduce bilirubin levels of newborn infants.

Title: Implications of Ankyloglossia on Breastfeeding.

Citation: MCN. The American journal of maternal child nursing; ; vol. 44 (no. 2); p. 73-79

Author(s): Hill, Rebecca

Objective: The purpose of this integrative review was to synthesize the literature on the relationship between infant breastfeeding and ankyloglossia.

Data Sources: The search terms tongue-tie or ankyloglossia and breastfeeding were used via CINAHL, Ovid MEDLINE, Health Reference Academic, and PsycINFO. Primary research articles and clinical reviews were considered in the search parameters.

Study Selection: Searches yielded 201 articles written in English and published between 1999 and 2018. After screening, 50 full-text articles were assessed for eligibility, 43 of which were omitted for irrelevance. Three qualitative and four quantitative studies remained for inclusion in the review.

Data Extraction: Studies were reviewed for information on the relationship between ankyloglossia and breastfeeding. Studies examining results of ankyloglossia treatment were omitted. Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used.

Data Synthesis: Analysis revealed a varied degree of difficulties with breastfeeding when the infant has ankyloglossia. Prevalence is uncertain due to lack of universal screening guidelines, and infrequent use of screening tools. No studies were found that examined psychological ramifications of feeding difficulties with ankyloglossia. There are no validated screening tools for ankyloglossia.

Conclusion: More research is necessary on effects of breastfeeding difficulties of infants with ankyloglossia on the mother-infant relationship. A reliable screening tool needs to be developed and validated. Education for nurses to assess infants with ankyloglossia in a systematic fashion should be explored. Investigation of psychological sequelae, including maternal stress, postpartum depression, and mother-infant bonding is an important next step in the research of infants with ankyloglossia.

Title: Promoting self-management of breast and nipple pain in breastfeeding women: Protocol of a pilot randomized controlled trial.

Citation: Research in nursing & health; Mar 2019

Author(s): Lucas, Ruth; Bernier, Katherine; Perry, Mallory; Evans, Heather; Ramesh, Divya; Young, Erin; Walsh, Stephen; Starkweather, Angela

Abstract: The majority of women experience pain during breastfeeding initiation with few strategies to manage breast and nipple pain. In fact, women cite breast and nipple pain as among the most common reasons for breastfeeding cessation. To address this important issue, we developed a breastfeeding self-management (BSM) intervention, based on the Individual and Family Self-Management Theory Framework. In this framework, self-management is conceptualized as a process in which women use knowledge, beliefs, and social facilitation to achieve breastfeeding goals. The purpose of this longitudinal pilot randomized controlled trial was to test the feasibility, acceptability, and preliminary efficacy of the BSM intervention with women initiating breastfeeding. Recruitment of 60 women intending to breastfeed occurred within 48 hr of delivery and women were randomized to either the intervention or usual care group. The BSM intervention group received BSM education modules that included information of how to manage breast and nipple pain and

self-management support through biweekly texting from the study nurse, and were asked to complete a daily breastfeeding journal. Primary outcomes measured at baseline, 1, 2, and 6 weeks will be used to (a) evaluate feasibility, acceptability, and preliminary efficacy of the BSM intervention, and (b) assess the influence of protective and risk factors of breastfeeding pain (including individual genetic polymorphisms related to pain sensitivity) on process variables for self-management of breastfeeding and breastfeeding pain, and on proximal (breastfeeding pain severity and interference, breastfeeding frequency) and distal outcomes (breastfeeding exclusivity and duration and general well-being).

Title: Breastfeeding outcomes in European NICUs: impact of parental visiting policies.

Citation: Archives of disease in childhood. Fetal and neonatal edition; Mar 2019; vol. 104 (no. 2); p. F151

Author(s): Cuttini, Marina; Croci, Ileana; Toome, Liis; Rodrigues, Carina; Wilson, Emilija; Bonet, Mercedes; Gadzinowski, Janusz; Di Lallo, Domenico; Herich, Lena Carolin; Zeitlin, Jennifer; EPICE Research Group

Objective: The documented benefits of maternal milk for very preterm infants have raised interest in hospital policies that promote breastfeeding. We investigated the hypothesis that more liberal parental policies are associated with increased breastfeeding at discharge from the neonatal unit.

Design: Prospective area-based cohort study.

Setting: Neonatal intensive care units (NICUs) in 19 regions of 11 European countries.

Patients: All very preterm infants discharged alive in participating regions in 2011-2012 after spending >70% of their hospital stay in the same NICU (n=4407).

Main Outcome Measures: We assessed four feeding outcomes at hospital discharge: any and exclusive maternal milk feeding, independent of feeding method; any and exclusive direct breastfeeding, defined as sucking at the breast. We computed a neonatal unit Parental Presence Score (PPS) based on policies regarding parental visiting in the intensive care area (range 1-10, with higher values indicating more liberal policies), and we used multivariable multilevel modified Poisson regression analysis to assess the relation between unit PPS and outcomes.

Results: Policies regarding visiting hours, duration of visits and possibility for parents to stay during medical rounds and spend the night in unit differed within and across countries. After adjustment for potential confounders, infants cared for in units with liberal parental policies (PPS≥7) were about twofold significantly more likely to be discharged with exclusive maternal milk feeding and exclusive direct breastfeeding.

Conclusion: Unit policies promoting parental presence and involvement in care may increase the likelihood of successful breastfeeding at discharge for very preterm infants.

Title: Green LED phototherapy for neonatal hyperbilirubinemia: A randomized controlled trial.

Citation: Pediatrics international : official journal of the Japan Pediatric Society; Mar 2019

Author(s): Kuboi, Toru; Kusaka, Takashi; Okada, Hitoshi; Arioka, Makoto; Nii, Kohichiroh; Takahashi, Megumi; Yamato, Satoshi; Sadamura, Takaaki; Jinnai, Wataru; Nakano, Akiko; Itoh, Susumu

Background: The main photochemical pathway in phototherapy for neonatal hyperbilirubinemia is the production and elimination of cyclobilirubin, which is a structural photoisomer of bilirubin and is most efficiently produced by green light. However, green light-emitting diode (LED) phototherapy has not been evaluated in the clinical setting because it is not recommended in American Academy of Pediatrics guidelines. We aimed to compare the efficacy of green LED phototherapy and blue LED phototherapy in patients with neonatal hyperbilirubinemia.

Methods: In this prospective randomized controlled trial, neonates with hyperbilirubinemia were randomly allocated to a green LED or blue LED phototherapy group. Both groups underwent 24 h of phototherapy, and blood was sampled before and after 24 h of phototherapy. Total serum bilirubin levels were measured by enzymatic methods and bilirubin photoisomers were measured by high-performance liquid chromatography.

Results: Thirty-four infants were randomized (green, 16; blue, 18). Total serum bilirubin (TSB) levels decreased significantly from 15.3 ± 1.5 to 13.9 ± 1.5 mg/dL in the green LED group ($p < 0.01$) and from 16.2 ± 1.3 to 14.5 ± 1.7 mg/dL in the blue LED group ($p < 0.01$) after 24 h of phototherapy. No significant difference was found in the TSB level reduction after phototherapy between the groups.

Conclusions: Both light sources showed a significant reduction in TSB levels, which indicated clinical effectiveness.

Sources Used:

The following databases are used in the creation of this bulletin: Amed, British Nursing Index, Cinahl & Medline.

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