

Summary of the PhD Dissertation

Name	Colette Balice-Bourgois
University	University of Lausanne, Faculty of Biology and Medicine
Place	Lausanne, Switzerland
Name of supervisor	Prof. Maya Zumstein-Shaha, FAAN, Prof. Giacomo Simonetti and Dr.Christopher Newman
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Contact	Colette.balice@eoc.ch

Curriculum Vitae

Dr Colette Balice, born in Belgium, obtained her Bachelor's degree in nursing in 1994 in Brussels, followed by her paediatric specialization in 1995. Since completing her training, she has worked as registered nurse in various Belgian paediatric wards, and more particularly in paediatric and neonatal intensive care units. In 1999, she completed her Master in Public Health with focus on healthcare management at Brussel's University. From early on, in her career, Dr Balice has been interested in paediatric pain management. Hence, she completed the Diploma in pain management at the University Pierre and Marie Curie in Paris in 2000. In the same year, she moved to Switzerland, continuing her career in paediatric units as head of nursing in various hospitals in the French and Italian speaking parts. In all these years, she has been engaged in the use of MEOPA for painful interventions in children and other training courses for pain management in paediatrics. In the last seven years, she has worked as scientific collaborator at the Nursing Research Center at the Ente Ospedaliero Cantonale in Bellinzona, Switzerland, while undertaking her doctoral studies in nursing at the University of Lausanne. For her PhD study, she developed a complex interprofessional intervention to improve the management of painful procedures in neonates. Subsequently, she implemented this intervention at the neonatal unit of the hospital in Bellinzona and determined its feasibility and acceptability. In October 2020, she obtained her PhD in Nursing degree. Currently, she works as research nurse at the Pediatric Institute of Southern Switzerland in Bellinzona, as well as coordinator of the Rare Disease Center of Southern Switzerland.



Description of the project

Development of a complex interprofessional intervention and feasibility study to improve the management of painful procedures in neonates

This doctoral thesis contributed to the improvement of the management of painful procedures in neonatology. During hospitalization, neonates are exposed to stressful environments and a high number of painful procedures. If pain is not treated adequately, short- and long-term complications may develop. To date, many guidelines for prevention and treatment of procedural pain exist as well as adequate interventions. However, evidence is not systematically implemented. One of the most important limiting factors in knowledge translation is interprofessional collaboration. In order to reduce pain in neonates elicited by procedures, it is necessary to consider complex interventions involving the whole caregiving team.

The aim of this thesis was to develop a complex interprofessional intervention, called NEODOL, based on the Social Communication Model of Pain by Craig. In this model, the newborn is considered as well as the caregiving team, i.e., parents and healthcare professionals. An acceptability and feasibility study was conducted with healthcare professionals and parents, employing a mixed methods approach, in a neonatology unit of a regional hospital in southern Switzerland. Intervention development followed MRC guidelines, which involves several steps and various methods. A systematic review of clinical practice guidelines for the management of acute procedural pain in neonates was conducted (1). NEODOL was designed, based on these findings, for three groups: neonates, parents and healthcare professionals (2). Results suggest that the intervention is acceptable and feasible to both parents and professionals. Data from various sources was integrated, leading to better understand facilitators and barriers to implementing this intervention. Promoting interprofessional collaboration has been found to be essential in improving the management of painful procedures. Parental involvement is recognized as fundamental to newborn care. However, further exploration is necessary to overcome barriers to parental involvement to promote integration of NEODOL in daily practice. This intervention was appreciated by the whole caregiving team and promising results were obtained (3).

The intervention, NEODOL, highlighted the importance of interprofessional collaboration in the management of painful procedures. This research has implications for interprofessional education, practice, parent engagement and research. Partnership between professionals, parents, researchers and leaders is essential to improve the management of painful procedures in newborns. This feasibility and acceptability study demonstrates that we are moving in the right directions and highlights the need for further research.

1. Balice-Bourgeois C, Zumstein-Shaha M, Vanoni F, Jaques C, Newman CJ, Simonetti GD. A Systematic Review of Clinical Practice Guidelines for Acute Procedural Pain on Neonates. *Clin J Pain*. 2020;36(5).
2. Balice-Bourgeois C, Newman CJ, Simonetti GD, Zumstein-Shaha M. A complex interprofessional intervention to improve the management of painful procedures in neonates. *Paediatric and Neonatal Pain*. 2020;2(3):63-73.
3. Balice-Bourgeois C, Zumstein-Shaha M, Simonetti GD, Newman CJ. Interprofessional Collaboration and Involvement of Parents in the Management of Painful Procedures in Newborns. *Frontiers in Pediatrics*. 2020;8(394).