Table 1 Data (Author, Objectives, Study type, variables, results and evidence) of the articles selected in this study

Music therapy					
Author, year, country.	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence (Oxford)**
Shabani et al. 2016, Iran[29]	To evaluate the effect of MT on the physiological and behavioral pain responses of PMTs during and after phlebotomy.	Randomized clinical trial N= 20	Physiological measures (HR, $SpaO_2$), pain assessment (NFCS) and sleep.	MT is effective; benefits in the analyzed parameters. MT is effective after painful procedures such as phlebotomy.	**1B**
Standley et al. 2012, USA[30]	Evaluate the effect of MT on premature newborns and develop best practice *guidelines for MT in the NICU.*	Meta-analysis (30 RCTs) N = 1,243	Physiological measurements (HR, RR, $SpaO_2$, BP), sucking/swallowing capacity, weight gain, behavior and length of stay.	Significant benefits, especially in live and early MT (BW < 1000g and GA < 28 weeks). Suggests inclusion of MT in NICU protocols for PMTs : music to pacify, improve sucking/swallowing and multimodal stimulation.	**1A**
Hartling et al. 2009, Canada[32]	To evaluate the effectiveness of MT in full-term neonates or PMTs .	Systematic review (9 RCTs) N = 388	Physiological measures (HR, RR and $SpaO_2$), behavior, pain (RIPS, NFCS, NIPS, MCS) and facial expression (MAX).	Benefits during painful procedures. May improve oral feeding in PMT when combined with other non-invasive therapies. Inconclusive study due to heterogeneity.	**1B**
Bergomi et al. 2014, Italy[33]	Evaluate the use of MT compared to the use of Sucrose or another standard procedure.	Randomized Clinical Trial N= 35	Physiological measures (HR and $SpaO_2$), behavioral (PIPP) and sleep.	Use of MT and glucose are effective and safe in controlling pain in PMTs . Heterogeneity of studies limits definitive conclusions.	**1B**
Polkki et al. 2014, Finland[34]	To evaluate the effectiveness of MT on pain in premature newborns for painful procedures in the NICU.	Systematic review (2 RCTs) N= 41	Physiological measures (HR, RR, BP, $SpaO_2$), behavioral (facial expression, movement), sleep and pain (NIPS, NFCS).	Effective and safe pain relief for PMTs in NICU. They meet the NICU's criteria for good clinical and ethical practices.	**1A**

Breast-feeding					
Author, year, country	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence and degree of recommendation**
Singh et al. 2016, India[36]	To evaluate the analgesic effect of breastfeeding during heel puncture in healthy newborns.	Randomized Clinical Trial N= 60	Physiological measurements (HR, $SpaO_2$, BP) and crying time.	Breastfeeding is effective as analgesia during painful procedures in newborns. They recommend universal use during a painful stimulus.	**1B**
Benoit et al. 2017, Canada[37]	To evaluate the effectiveness of breastfeeding and milking in reducing pain caused by the procedure in PMTs (30-36 weeks) and full-term newborns.	Systematic review (21 RCTs) N= 2,336	Physiological parameters (HR), crying time and pain (PIPP, NIPS, DAN, NFCS).	Breastfeeding is effective and more beneficial than milking, being enhanced associated with skin-to-skin contact and the use of local anesthetics. Limited evidence on the use of breast milk alone and in PMTs.	**1A**
Zhu et al. 2014, China[38]	To evaluate the effectiveness of breastfeeding, MT and combined techniques in relieving pain in healthy newborns during heel puncture.	Randomized clinical study N = 250	Pain (NIPS), crying time and latency.	Clinical evidence of pain relief caused by heel puncture with breastfeeding, which is superior to that of MT. No benefit in associated techniques.	**1B**

Gentle containment					
Author year, country	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence and degree of recommendation**
Obeidat et al. 2009 USA[35]	Determine the effectiveness of gentle restraint during invasive procedures in PMTs.	Systematic review (5 RCTs) N = 132	Physiological measures (HR, $SpaO_2$), pain (NIPS) and sleep.	Benefits in reducing pain in premature newborns undergoing painful procedures.	**1B**

Kangaroo method					
Author year, country	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence and degree of recommendation**

Cordero et al. 2015. Spain[39]	To analyze the effectiveness of Kangaroo Care during painful procedures in reducing pain in newborns.	Systematic review (21 RCTs) N = 2,030	Physiological measurements (HR, $SpaO_2$), pain (NIPS, PIPP), EEG and cortisol.	Benefits in reducing painful sensations and improving behavioral response. It must be applied at least 30 minutes before the painful procedure.	**1A**

Sound exhibition					
Author, year, country	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence and degree of recommendation**
Almadhoob et al. 2015. Canada[40]	Determine the effects of reducing sound in PMTs (< 32 weeks) or MBP (< 1500g) on growth, NPMD and sleep pattern.	Systematic review (1 RCT) N = 34	Weight, height and BMI, hearing (AABR and EOA), sleep, DNPM index (Bayley II), suction or NGT time, MV time, supplemental O_2 , comorbidities and length of stay.	Lower sound exposure can reduce the resulting stress on the cardiovascular, respiratory, neurological and endocrine systems, promoting growth and reducing adverse effects. There was a significant difference in the DNPM Index. Insufficient sample for definitive conclusions.	**1B**

Luminous exposure					
Author year, country	**Goals**	**Kind of study**	**Variables analyzed**	**Results/Conclusions**	**Level of evidence and degree of recommendation**
Morag et al. 2016. Canada[16]	To evaluate the effectiveness of LC on the growth of PMT newborns at corrected age 3-6 months and the differences between gestational ages.	Systematic review (9 RCTs) N= 525	Physiological measures (HR, RR, Spa O_2), sleep, DNPM (BSID), cortisol, weight gain, length of stay and MV, diet and comorbidities.	Greater weight gain, lower incidence of ROP, shorter crying time and hospital stay. Small sample without definitive conclusions.	**1B**

Subtitles:	GA: Gestational age.	NIRS: Near infrared spectroscopy.
MT: Music therapy.	NICU: Neonatal Intensive Care Unit.	DAN: Douleur Aigu du Nouveau – Née.[k]
HR: Heart Rate.	RCT: Randomized Clinical Trial.	AABR: Automated auditory brainstem response.
RR: Respiratory rate.	USA: United States of America.	OAE: Evoked otoacoustic emissions.
BP: Systemic blood pressure.	NBAS: Neonatal Behavior Assessment Scale.[f]	VM: Mechanical ventilation.
$SpaO_2$: Partial oxygen saturation.	MBP: Very low weight.	LC: Luminosity cyclical.
ROP: Retinopathy of prematurity.	NNS: Non-nutritive sucking.	BSID: Bayley Scales of Infant Development.[l]
PMT: Premature.	NIPS: Newborn and Infant Pain Scale.[g]	MAX: Facial Movement Coding System.[m]
DNPM: Neuropsychomotor development.	PIPP: Preterm Infant Pain Profile Scale.[h]	MCS: Movement Coding System.
RN: Newborn.	NFCS: Neonatal Facial Activity.[i]	EEG: Electroencephalogram.
BW: Birth weight	RIPS: Riley Infant Pain Scale.[j]	

[f]Barlow J, Herath NI, Bartram TC, et al. The Neonatal Behavioral Assessment Scale (NBAS) and Newborn Behavioral Observations (NBO) system for supporting caregivers and improving outcomes in caregivers and their infants. *Cochrane Database Syst Rev*. 2018 Mar 14;3.

[g]Hudson-Barr D, Capper-Michel B, Lambert S, et al. Validation of the Pain Assessment in Neonates (PAIN) scale with the Neonatal Infant Pain Scale (NIPS). *Neonatal Netw*. 2002 Sep-Oct;21(6):15–21.

[h]Ballantyne M, Stevens B, McAllister M, et al. Validation of the premature infant pain profile in the clinical setting. *Clin J Pain*. 1999 Dec;15(4):297–303.

[i]Peters JW, Koot HM, Grunau RE, et al. Neonatal Facial Coding System for assessing postoperative pain in infants: item reduction is valid and feasible. *Clin J Pain*. 2003 Nov-Dec;19(6):353–363.

[j]Joyce BA, Schade JG, Keck JF, et al. Reliability and validity of preverbal pain assessment tools. *Issues Compr Pediatr Nurs*. 1994 Jul-Sep;17(3):121–135.

[k]Dias FSB, Gasparino RC, Carmona EV, et al. Validation of the Échelle Douleur Inconfort Nouveau-Né for Brazilian culture. Rev esc sick. USP (30). 2017 [cited 2018 June 04].

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[m]Izard, C. (1979). The maximally discriminative facial movement coding system (MAX). Unpublished manu-script, University of Delaware, Instructional Resources Center.