



Letter

Authors' response to "An unnecessary pain: A commentary on Gao et al. (2018)"



Dear Editor,

We are grateful to the authors for their interest and thoughtful comments in reference to our article "Effect of non-nutritive sucking and sucrose alone and in combination for repeated procedural pain in preterm infants: A randomized controlled trial". We thank editors for the opportunity to clarify our points of view.

Firstly, the authors state "The administration of sucrose alone is considered a "gold standard". How relevant is it then to conduct a study with four groups of which one is sucrose without it being considered a control group?" There were no valid guidelines for routine heel-stick pain management in the NICUs in China at the time of this study. Sucrose hadn't been regularly used to decrease preterm infants' procedural pain as a "gold standard" in the NICU where this study was conducted. The standard care for preterm infant during the heel-stick pain at the study site was not sucrose but "gentle touch". The possible explanations for it may include the concern regarding the efficacy and safety profile of repeated administration of sucrose for frequently performed painful procedures, and the medical staff traditionally believed gentle touch could have a calming effect on preterm infant during the painful experience. It is important to note that the Cochrane systematic review updated by Stevens et al. in 2016 concluded that the optimal dose is unknown and the effectiveness of repeated sucrose administration and also the children's long-term neurodevelopmental outcome need to be further studied (Stevens et al., 2016). Moreover, Slater et al. did not find a significant pain-reducing effect of sucrose on nociceptive brain activity measured with EEG and EMG opposed to the PIPP which raises the question of the appropriate primary outcome (Slater et al., 2010). Therefore, we considered the standard care in the NICU as the intervention for the control group.

Secondly, the authors stated "The authors do not provide a definition for "gentle touch" and quote two studies: one referring to therapeutic touch (Bahman Bijari et al., 2012), and the other to touch-contact (Herrington and Chiodo, 2014)." Thanks very much for the careful critique. We should add the definition of gentle touch in our paper, which is very helpful for the readers or clinical practitioners to repeat the study or apply it to the clinic. In our study, gentle touch was accomplished by the research nurse through placing the fingertips of one hand above the eyebrow line with the palm touching the preterm infant's crown while the other hand was rested on the lower abdomen of the infant encompassing the waist and the hip (Bahman Bijari et al., 2012). Bahman Bijari et al. showed that gentle touch had soothing and calming effect on preterm infants and could be beneficial in nursing interventions (Bahman Bijari et al., 2012).

Thirdly, the authors stated "The application of "gentle touch" by Gao et al. (2018) is questionable since it was performed only when preterm infants cried during the painful procedure. It is important to note that preterm infants may experience pain without crying given that pain expression is primarily characterized by physiological and behavioural responses in this population". Gentle touch was performed only when preterm infants cried during the painful procedure, which is the standard of care in the NICU where this study was conducted. As far as the crying response, preterm infants enrolled in the study were stable, without mechanical ventilation, and aged more than 30 weeks. Therefore, participants in this study could demonstrate crying response when they experienced heel-stick pain. Crying has been widely used to assess procedural pain in preterm infants (Bueno et al., 2012; Herrington and Chiodo, 2014; Osman et al., 2015; Choudhary et al., 2016; Soliman et al., 2016).

Lastly, the authors stated "Shouldn't sucrose, considered a "gold standard", be administered to the control group? In a context of research, the scientific community should question the publication of studies which fail to provide the control group with appropriate pain management in the light of current knowledge." The reason why we considered the standard care as the control condition has been stated in the second paragraph of this letter. Our results showed that the standard care "gentle touch" was inadequate for the preterm infants to relieve procedural pain. Therefore, the routine care for the control group might have led to unnecessary pain for preterm infants assigned to this condition, although this limitation was minimized by offering preterm infants in this condition gentle touch. The limitation above has been included in the discussion section of our paper (Gao et al., 2018). We believe that our results can bring more attention to preterm infant pain management. It is hoped that our work will lead to the establishment of guidelines for neonatal pain management in China and other developing countries.

References

- Bahman Bijari, B., Iranmanesh, S., Eshghi, F., Baneshi, M.R., 2012. Gentle human touch and Yakson: the effect on preterm's behavioral reactions. *ISRN Nurs.*, 750363.
- Bueno, M., Stevens, B., de Camargo, P.P., Toma, E., Krebs, V.L., Kimura, A.F., 2012. Breast milk and glucose for pain relief in preterm infants: a noninferiority randomized controlled trial. *Pediatrics* 129 (4), 664–670.
- Choudhary, M., Dogiyal, H., Sharma, D., Datt Gupta, B., Madabhavi, I., Choudhary, J.S., Choudhary, S.K., 2016. To study the effect of Kangaroo Mother Care on pain response in preterm neonates and to determine the behavioral and physiological responses to painful stimuli in preterm neonates: a study from western Rajasthan. *J. Matern. Fetal Neonatal Med.* 29 (5), 826–831.
- Gao, H., Li, M., Gao, H., Xu, G., Li, F., Zhou, J., Zou, Y., Jiang, H., 2018. Effect of non-nutritive sucking and sucrose alone and in combination for repeated procedural pain in preterm infants: a randomized controlled trial. *Int. J. Nurs. Stud.* 83,

- 25–33.
- Herrington, C.J., Chiodo, L.M., 2014. Human touch effectively and safely reduces pain in the newborn intensive care unit. *Pain Manag. Nurs.* 15 (1), 107–115.
- Osman, M., Elsharkawy, A., Abdel-Hady, H., 2015. Assessment of pain during application of nasal-continuous positive airway pressure and heated, humidified high-flow nasal cannulae in preterm infants. *J. Perinatol.* 35 (4), 263–267.
- Slater, R., Cornelissen, L., Fabrizi, L., Patten, D., Yoxen, J., Worley, A., Boyd, S., Meek, J., Fitzgerald, M., 2010. Oral sucrose as an analgesic drug for procedural pain in newborn infants: a randomised controlled trial. *Lancet* 376 (9748), 1225–1232.
- Soliman, H., Elsharkawy, A., Abdel-Hady, H., 2016. Does topical lidocaine reduce the pain associated with the insertion of nasal continuous positive airway pressure prongs in preterm infants?: A randomized, controlled pilot trial. *Clin. J. Pain* 32 (11), 948–954.
- Stevens, B., Yamada, J., Ohlsson, A., Haliburton, S., Shorkey, A., 2016. Sucrose for analgesia in newborn infants undergoing painful procedures. *Cochrane Database Syst. Rev.* 7.

Haixia Gao*

School of Nursing, Nanjing University of Chinese Medicine, Nanjing, China

Mei Li

Children's Hospital of Nanjing Medical University, China

Honglian Gao

Binzhou Medical University Hospital, Binzhou, China

Guihua Xu

School of Nursing, Nanjing University of Chinese Medicine, Nanjing, China

Fang Li, Jing Zhou, Yunsu Zou, Honghua Jiang

*Children's Hospital of Nanjing Medical University, China*E-mail address:

scitgzzyx@163.com (H. Gao)

* Corresponding author.