**ISA ISPID  
  
Abstract Submission  
  
Nº: 144**

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| Topics: **SIDS/SUID** |
| Type: **Oral** |
| **Physiological measures from infants sleeping overnight in a culturally-derived sleep device (wahakura) compared to a standard bassinet: a randomized controlled trial** |
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| **Introduction** Sudden Unexpected Death in Infancy [SUDI], is the biggest single component of post neonatal death in the developed world. Unfortunately, like many indigenous groups, New Zealand Māori have increased risk of SUDI, likely associated with the combined risk factors of infant–adult bed sharing after infant exposure to smoking in pregnancy. The wahakura is a sleep device developed by Māori as an alternative to direct bed sharing, but as yet is untested. Objectives:to compare the overnight oxygen saturation (SaO2)and thermal environment of infants in a wahakura and standard bassinet as part of a large study to identify potential risks (bed sharing, infant prone and lateral sleep positions, hypoxia and hyperthermia), and potential benefits (breastfeeding promotion) of the wahakura.  **Material and Methods** 200 mainly Māori participants were recruited through midwifery practices in deprived areas, and randomized to receive a wahakura (W) or a bassinet (B) during pregnancy for use from birth. A 1 month infant sleep study with “usual sleep device” included infrared video, infant SaO2, and peripheral and environmental temperature. Episodes of SaO2 less than 94% and less than 90%, time in a cool state (shin temp less than 34o) or warm state (shin temp greater than 36o ) and room and outside temperatures were compared for the groups.  **Results** SaO2 was analysed by intention to treat for 83B and 84W infants. Median minutes less than 94% (B: 1.99; W:1.91) and less than 90% (0.75; 0.74) were similar as were number of dips of SaO2/hr of 5% (8.57; 10.88, p=0.9) and dips of 10% (1.65; 2.45, p=0.5). As treated analysis for 105 infants in a bassinet or cot (BC), 47 in a wahakura (W) and 13 in an adult’s bed (AB) also indicated equivalence across the groups for these measures of SaO2. Overnight mean shin, room and outside temperatures were not different between the randomised groups nor were median infant cool times [B:54.5min (IQR 28, 150) vs W 66min (26,147]. 75% of infants in both groups had no warm time (shin>35o). Only 18B and 14W infants had any warm time (mean:97min, 73min). As treated analysis compared 94BC, 39W and 11AB infants and similarly did not show a difference between groups for time in a cool or warm state.  **Conclusions** Preliminary results indicate equivalence for overnight SaO2 between the wahakura and bassinet and for overnight infant temperature, thus supporting our findings from video and questionnaires to suggest the wahakura is at least equivalent to the currently recommended bassinet as an option for parents who may otherwise bedshare. Funding source: Health Research Council of New Zealand, University of Otago research grant |
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