



Lizelle Jacobs (PhD candidate)

Neurodevelopmental Supportive Care in South African NICUs – An Essential Change of Attitude



UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG





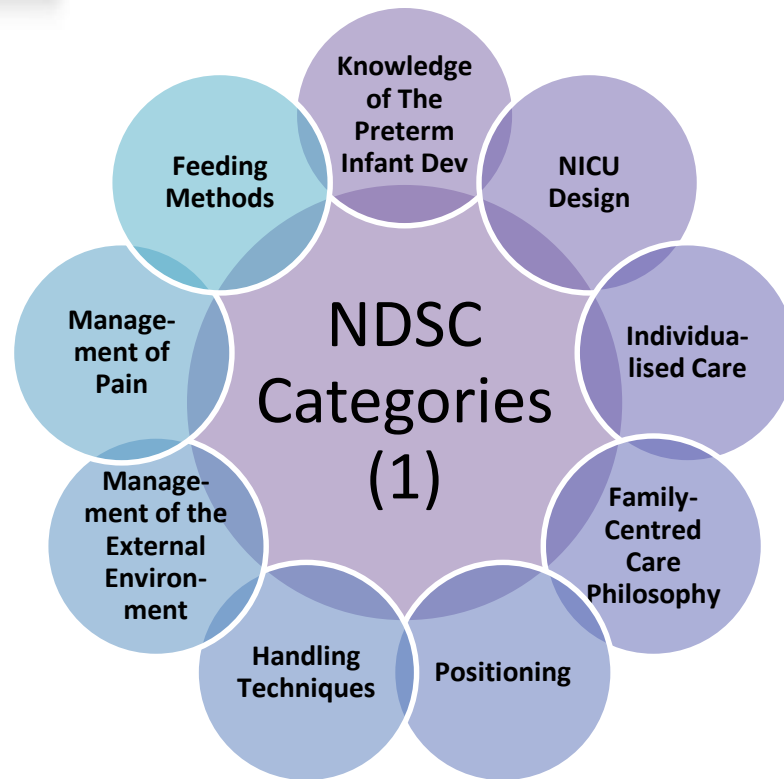
OUTLINE AND INTRODUCTION

- Preterm Infant and NDSC
- Implementation Research
- Methodology
- Results and Discussion
- Conclusion
- Next Phases





NEURODEVELOPMENTAL SUPPORTIVE CARE (NDSC) (1)



“Developmental care is a broad category of interventions that is designed to minimize the stress of the NICU environment” (2 p. 3)





BENEFITS OF NDSC (2-9)

Medical Benefits

- ↑ Physiological regulation
- ↑ Oxygenation
- ↑ Ventilation and weaning from supplemental oxygen
- ↑ Weight gain, height and head circumference
- ↑ Medical status with fewer complications
- Quicker transition to oral feeding

Cost Effectiveness

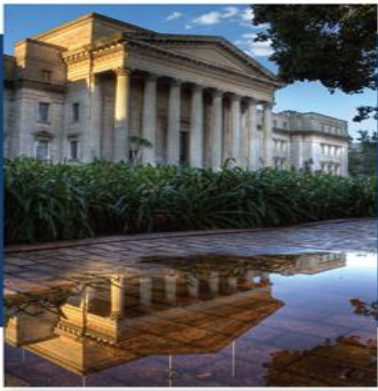
- Discharged sooner
- ↓ Critical care cost
- ↓ Cost of hospitalisation



Improved Growth and Development

- ↑ Neurobehavioural developmental outcomes e.g. vital signs, growth measure, posture
- ↑ Attachment and bonding
- ↑ Family outcomes

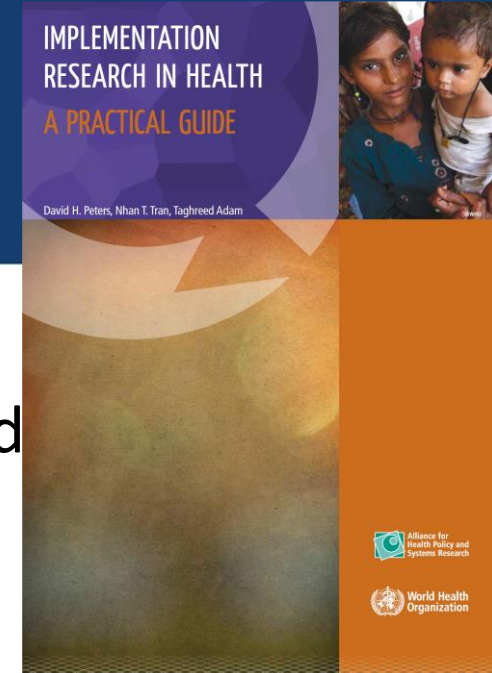


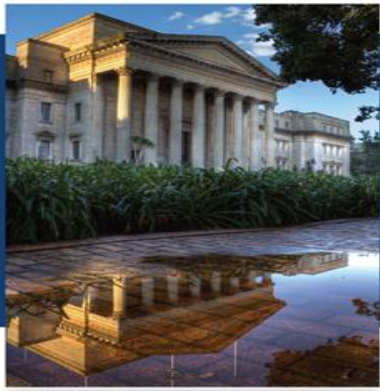


IMPLEMENTATION RESEARCH (10)

- World Health Organization: Bridge the gap between research and practice
- Contributes to the process of applying evidence-based practice
- Considers real-life issues preventing successful implementation
- Identifies contextual facilitators and barriers

AIM: To describe the process of implementation of a NDSC training programme for multi-disciplinary teams, who provide services in two academic public hospital NICUs in South Africa

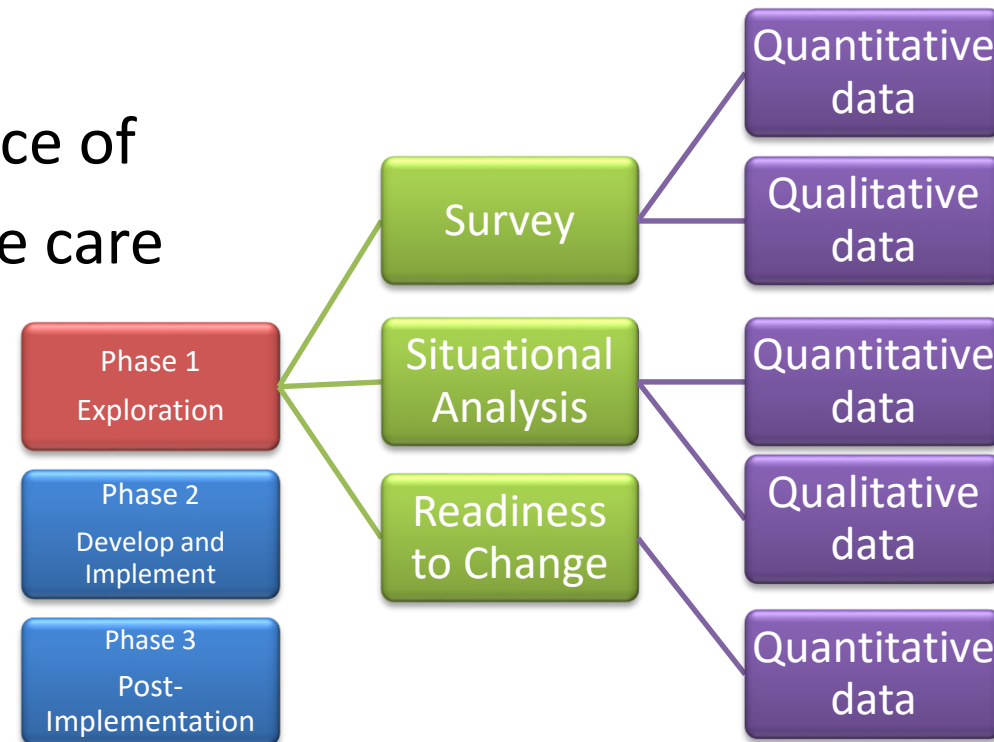


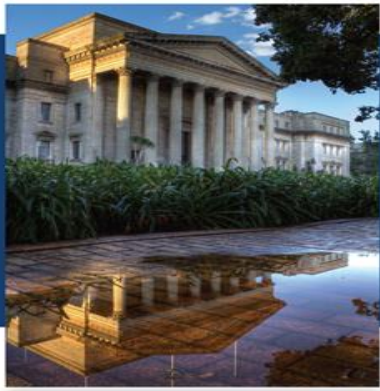


METHODOLOGY



- Multi-phase design, mixed method
- Total population sample: MDT members
- Phase 1 Aim:
To investigate the current practice of neurodevelopmental supportive care in the NICU





RESULTS AND DISCUSSION

SURVEY

Positive Aspects

Family-centred care

- Parents are involved in care
- Breastfeeding or expressing

Positioning

- Nesting

Light

- Phototherapy - eye protection

Knowledge of infant development

- MDT approach

High Risk Areas

NICU design

Individualised care

Family-centred care

- Privacy
- Siblings visiting
- Parent support groups

Positioning

- Physiological flexion

Handling techniques

Sound

Light

Pain management

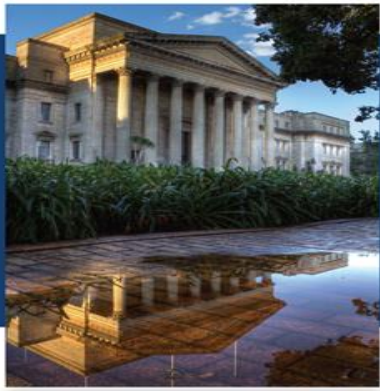
Knowledge of infant development

- NDSC training

Feeding

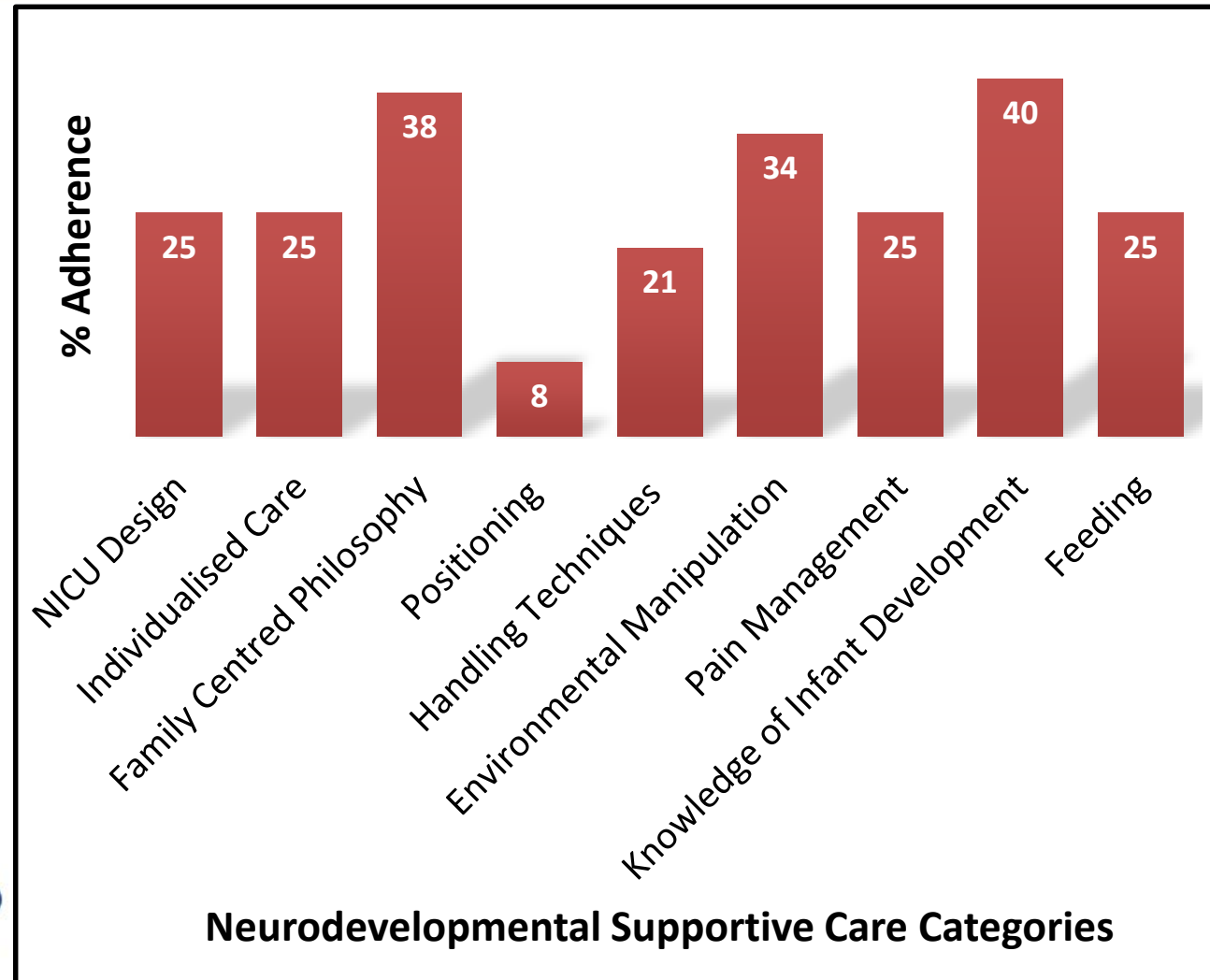
- Non-nutritive sucking

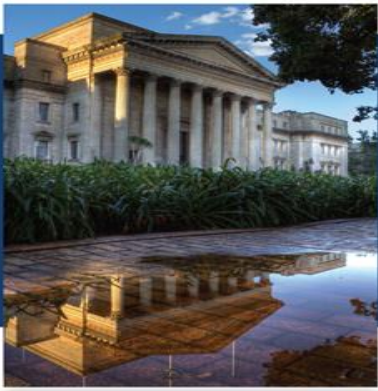




RESULTS AND DISCUSSION

SITUATIONAL ANALYSIS



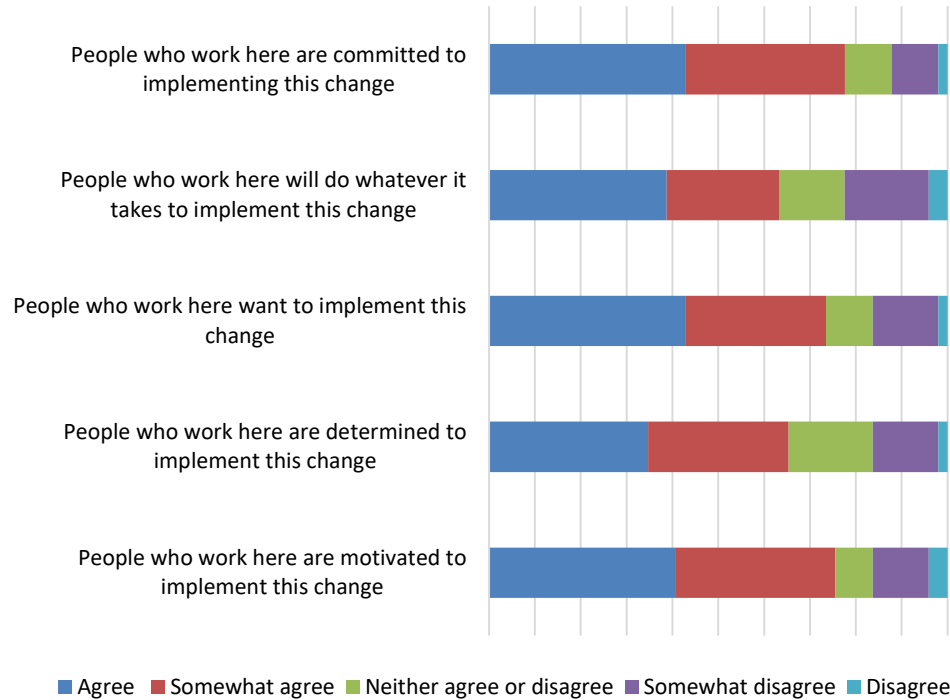


RESULTS AND DISCUSSION (11)

READINESS TO CHANGE

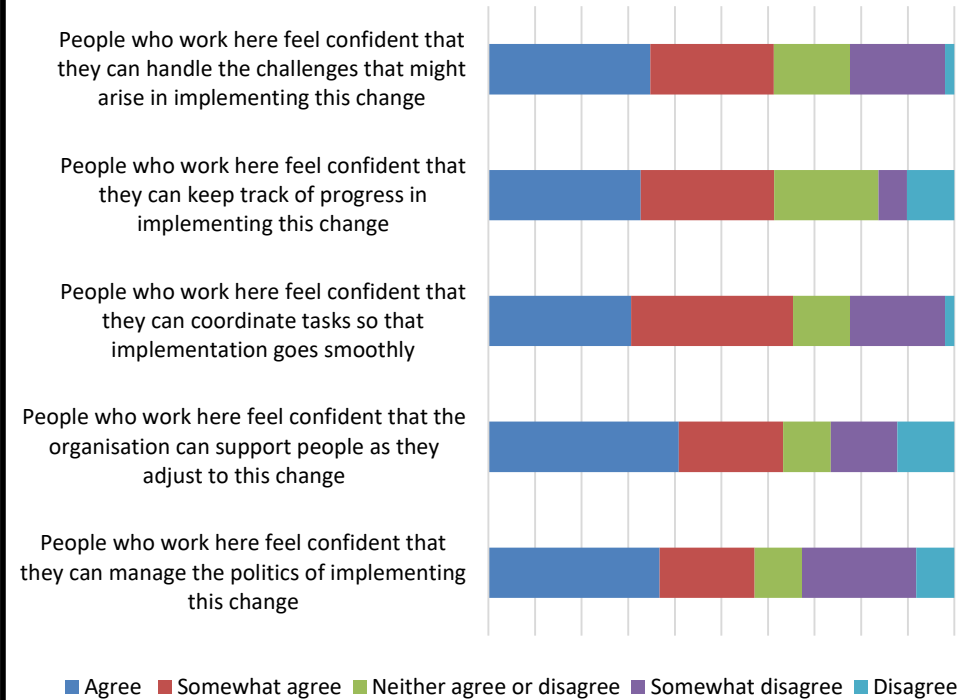
Change Commitment

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



Change Efficacy

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%





NEXT PHASES

PHASE 1
Exploration

PHASE 2
Develop and
Implement

PHASE 3
Post-
Implementation





CONCLUSION

*‘Developmental care
will make the biggest difference
and be most successful in the most
challenged settings with little
resources’^{12,13}*





Supervisor: Prof Daleen Casteleijn (University of the Witwatersrand)
Co-supervisor: Prof Welma Lubbe (North-West University)

**How to
change the
world**

**#1 Believe
that
you can**



**THANK
YOU!**



REFERENCES

1. Lubbe W. Best practice guidelines for neurodevelopmental supportive care of the preterm infant (Doctoral dissertation, North-West University)
2. Symington AJ, Pinelli J. Developmental care for promoting development and preventing morbidity in preterm infants. The Cochrane Library. 2006
3. WHO. Born Too Soon: The Global Action Report on Preterm Birth. Geneva, Switzerland: World Health Organization; 2012
4. McAnulty G, Duffy FH, Kosta S, Weisenfeld NI, Warfield SK, Butler SC, Alidoost M, Bernstein JH, Robertson R, Zurakowski D, Als H. School-age effects of the newborn individualized developmental care and assessment program for preterm infants with intrauterine growth restriction: preliminary findings. BMC pediatrics. 2013;13(1):25
5. Als H, Duffy FH, McAnulty G, Butler SC, Lightbody L, Kosta S, Weisenfeld NI, Robertson R, Parad RB, Ringer SA, Blickman JG. NIDCAP improves brain function and structure in preterm infants with severe intrauterine growth restriction. Journal of Perinatology. 2012;32(10):797-803
6. Kiechl-Kohlendorfer U, Merkle U, Deufert D, Neubauer V, Peglow UP, Griesmaier E. Effect of developmental care for very premature infants on neurodevelopmental outcome at 2 years of age. Infant Behavior and Development. 2015;39:166-72





REFERENCES

7. Ullenhag A, Persson K, Nyqvist KH. Motor performance in very preterm infants before and after implementation of the newborn individualized developmental care and assessment programme in a neonatal intensive care unit. *Acta Paediatrica*. 2009; 98(6):947-952\
8. Pickler RH, McGrath JM, Reyna MB, McCain N, Lewis MM, Cone MS, Wetzel P, Best A. A model of neurodevelopmental risk and protection for preterm infants. *The Journal of perinatal & neonatal nursing*. 2010;24(4):356
9. Rheeder A, Lubbe W, Pretorius R. Compliance With Best Practice Guidelines for Neurodevelopmental Supportive Care in South Africa: A Situational Analysis. *The Journal of perinatal & neonatal nursing*. 2017
10. Peters DH, Adam T, Alonge O, Agyepong IA, Tran N. Implementation research: what it is and how to do it. *Bmj*. 2013;347:f6753.
11. Shea CM, Jacobs SR, Esserman DA, Bruce K, Weiner BJ. Organizational readiness for implementing change: a psychometric assessment of a new measure. *Implementation Science*. 2014;9(1):7.
12. Als H, Gilkerson L, Duffy FH, Mcanulty GB, Buehler DM, Vandenberg K, Sweet N, Sell E, Parad RB, Ringer SA, Butler SC. A three-center, randomized, controlled trial of individualized developmental care for very low birth weight preterm infants: medical, neurodevelopmental, parenting, and caregiving effects. *Journal of Developmental & Behavioral Pediatrics*. 2003;24(6):399-408.
13. Goldberg-Hamblin S, Singer J, Singer GH, Denney MK. Early intervention in neonatal nurseries: The promising practice of developmental care. *Infants & Young Children*. 2007;20(2):163-71.





IMAGES USED

By Jacoplane (well, his parents anyway) - Own work, CC BY-SA 3.0,
<https://commons.wikimedia.org/w/index.php?curid=1276885>

Public Domain, <https://commons.wikimedia.org/w/index.php?curid=664>

By Brian Hall - Own work, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=1786974>

By Lindsay Mgbor/Department for International Development, CC BY 2.0,
<https://commons.wikimedia.org/w/index.php?curid=26240371>

Peters DH, Adam T, Alonge O, Agyepong IA, Tran N. Implementation research: what it is and how to do it. Bmj. 2013 Nov 20;347:f6753

By Mike Blyth - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=2664575>

By Geraint Hill - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=64181315>

By Zerbey at the English language Wikipedia, CC BY-SA 3.0,
<https://commons.wikimedia.org/w/index.php?curid=2213639>

By ceejayoz - <https://www.flickr.com/photos/ceejayoz/3579010939/>, CC BY 2.0,
<https://commons.wikimedia.org/w/index.php?curid=8039784>

By Polihale - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=7071001>



Audio clip: <https://www.youtube.com/watch?v=uXVIYGEOOvk>

