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Amy Carroll, OTD, OTR/L

*Department of Occupational Therapy, Thomas Jefferson University*

Susan Toth-Cohen, PhD, OTR/L

*Department of Occupational Therapy, Thomas Jefferson University*

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# Cross-Cultural and Inter-Professional Knowledge Translation of Developmentally Supportive Care in an Indian NICU

Amy Carroll, OTD. OTR/L, Susan Toth-Cohen, PhD, OTR/L  
Jefferson School of Health Professions, Thomas Jefferson University

DSC Team: Dr. Amitava Sengupta, Dr. Senthil Kumar, Dr. Rachna Chandra, Ms Minakshi Saxena, Dr. Amy Carroll

## Knowledge Translation Model

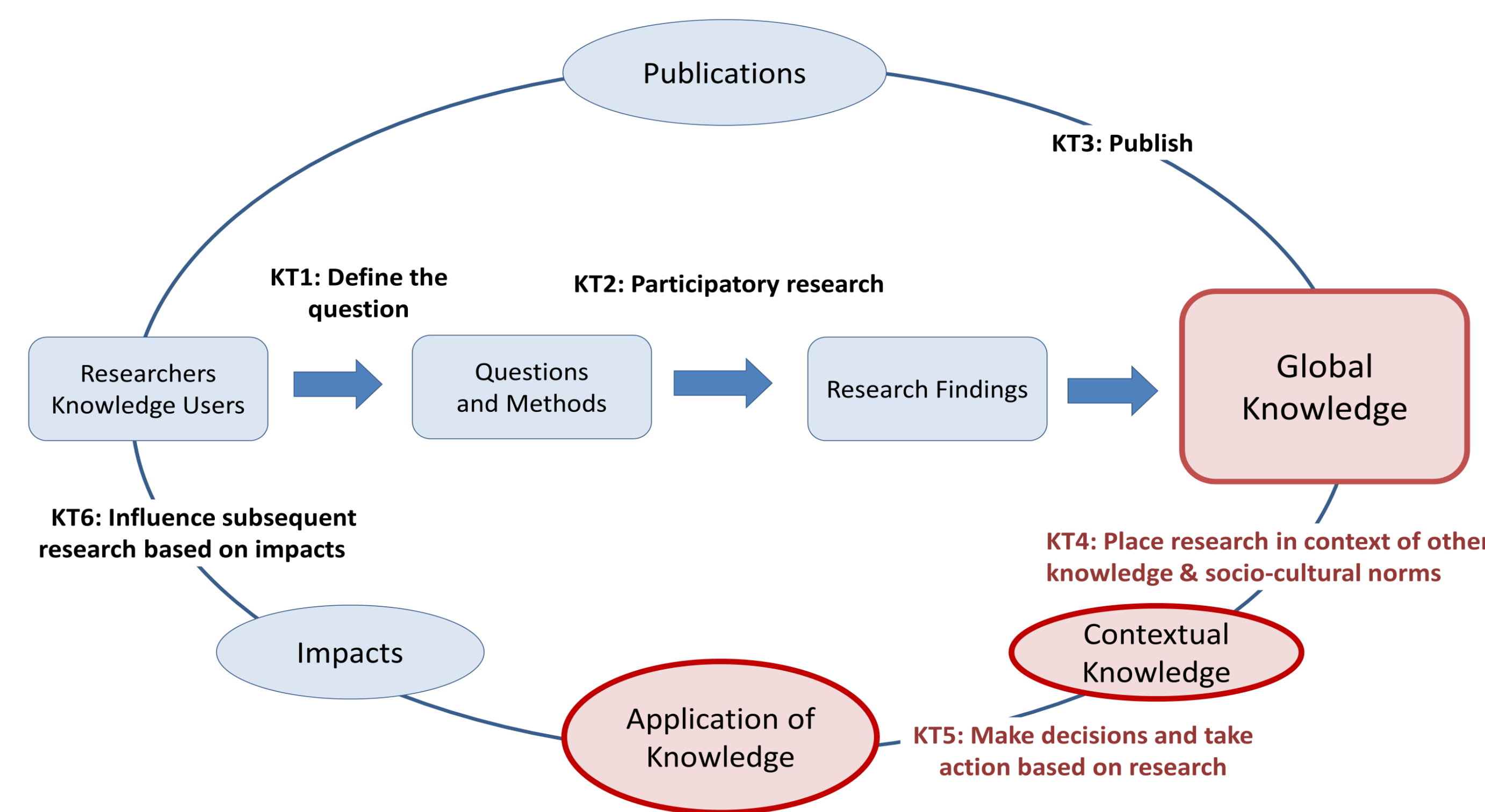


Figure1: Modified from the CIHR research cycle superimposed by the six opportunities to facilitate KT. Original's Source: Canadian Institute of Health Research Knowledge Translation within the Research Cycle Chart. Ottawa: Canadian Institute of Health Research. 2007. Reproduced by Sudsawad, 2007, with the permission of the Minister of Public Works and Government Services Canada, 2007

## Background: Knowledge Translation

- Knowledge translation is the process of moving what we learned through research to the actual applications of knowledge in a variety of practice settings and circumstances (Sudsawad, 2007).
- Implementing research knowledge in everyday practice is the most challenging step of evidence-based practice (Ilott, 2012).
- This know-do gap is considered one of the most important challenges for public health in this century (WHO, 2006).
- Health care providers face a myriad of cultural, contextual, and interpersonal factors during a knowledge translation process. Attention to differences in worldview and cultural perspectives is critical for occupational therapists wishing to provide culturally relevant care (Iwama, Thomson, & MacDonald, 2011; World Federation of Occupational Therapists, n.d.; Watson, 2006).

## Interaction-Focused Model

(Jacobson, Butterill, & Goering, 2003)

Model Component	Paras Hospitals (summarized)
User-Group	Medical staff in a 15 bed tertiary care NICU in a private hospital in a Gurgaon, India
Issue	Need <i>developmentally supportive care</i> to safe guard infant neurobehavioral development
Evidence Base	-Evidence supports the need & use of developmentally supportive care. -Practice guides and evidence base need local modification for use in this context.
User- Clinical Educator (OT) Relations	Strongest with medical director and DSC team, variable with doctors and nurses.
Dissemination	Participatory, inclusive, experiential learning in context, point of care reinforcement

## Synopsis:

A cross-cultural, and inter-professional NICU Team, including an American OT, used knowledge translation (KT) frameworks to apply current global evidence in developmentally supportive care in ways that were useful, cost effective, and meaningful to the families and staff in their tertiary care NICU setting in Gurgaon, India. The team used Pre & Post videotaping of routine care and procedures to measure the change in practice.

## Objectives

- Increase NICU nurses' use of DSC during routine care and procedures
- Decrease the use of non-supportive behaviors

## Methods

**Subjects:** A DSC team explored DSC practices and facilitated implementation in NICU care through the KT initiative. The team consisted of the director/neonatologist, the pediatric intensivist, a senior resident, the lactation counselor/family educator, and the occupational therapist (OT). Nine NICU nurses in 2 cohorts participated in the KT.

**Procedure:** The DSC team conducted a needs assessment reviewed literature and created a 5 week KT program based on the modified CIHR model and informed by contextual knowledge organized using the Interaction-Focused Model.

- Prior to the KT, the full NICU team received an overview of DSC.
- During the KT clinical guides, best evidence, and practice techniques associated with DSC were shared.
- Each week also included practical instruction, small group simulated experiences, and finally hands-on application related to the weekly topic.
- The KT finished with a strength-based team planning session for continued DSC in the NICU.
- The DSC team measured the integration of DSC into infant care through pre/during/post videos taken during routine care or procedures.
- Videotapes were scored via a DSC Behavior Checklist.

**Results:** Mean scores for the occurrence of DSC behaviors increased in 5 of 6 categories and mean score for the occurrence of (developmentally) non-supportive behaviors decreased in 6 of 6 categories. The overall percentage of DSC behaviors increased and the overall percentage of non-supportive behaviors decreased in the post DSC KT videos.

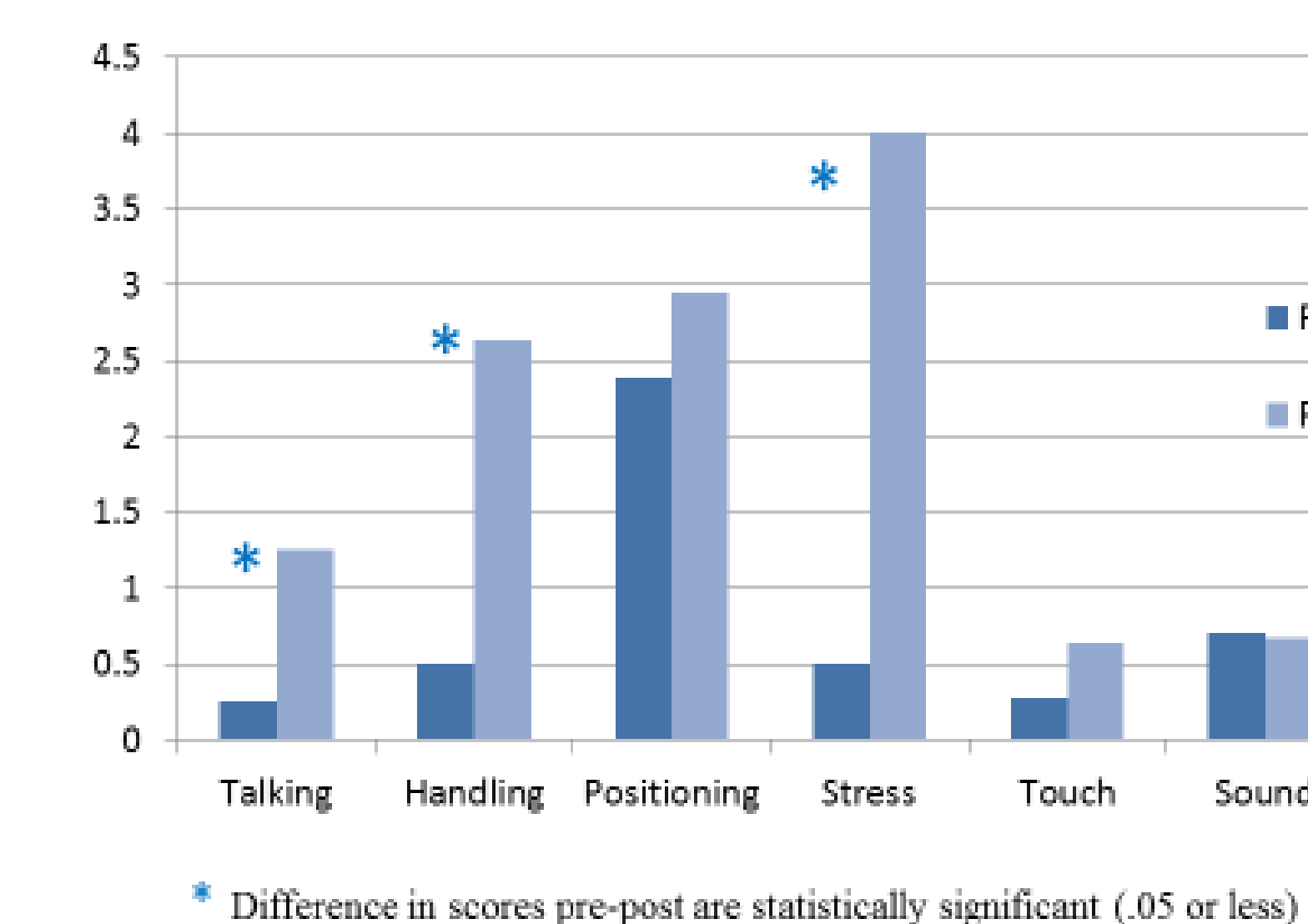
## Background: Why Developmentally Supportive Care

- The third trimester of fetal development is a critical time in brain development that can be altered by the environmental and sensory experiences of the infant (Als, 1998, Vandenberg, 2007)
- DSC is widely practiced in NICUs in developed nations to help minimize risks to infant development (Coughlin, Gibbins, Hoath, 2009).
- DSC interventions are used to minimize infant stress in the NICU through: control of external stimuli like light and sound, clustering of daily care (feeding, diaper changes etc.), positioning or swaddling, and calming techniques. (Symington & Pinelli, 2009).
- Surveys of families receiving care and the NICU staff revealed a need to increase the use of DSC for the infants.

## Outcomes

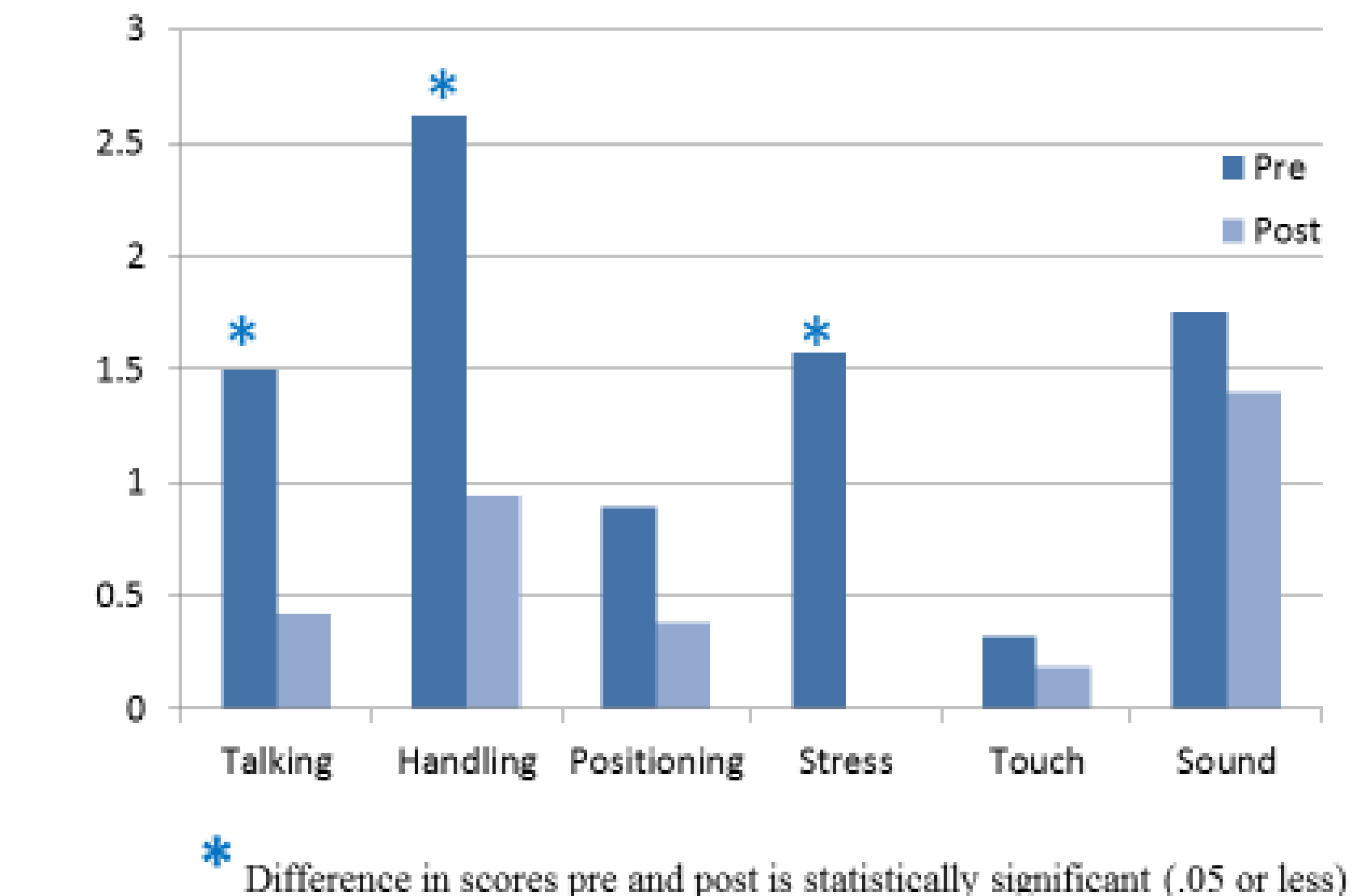
Comparison of pre (N =16) & post (N =16) knowledge translation videotapes of 9 nurse participants during routine care/procedures of infants in the NICU

Figure 1. Mean occurrence of positive DSC behaviors (N= 25) per category (pre/post)



\* Difference in scores pre-post are statistically significant (.05 or less)

Figure 2. Mean occurrence of non-supportive behaviors (N= 24) per category (pre/post)



\* Difference in scores pre and post is statistically significant (.05 or less)

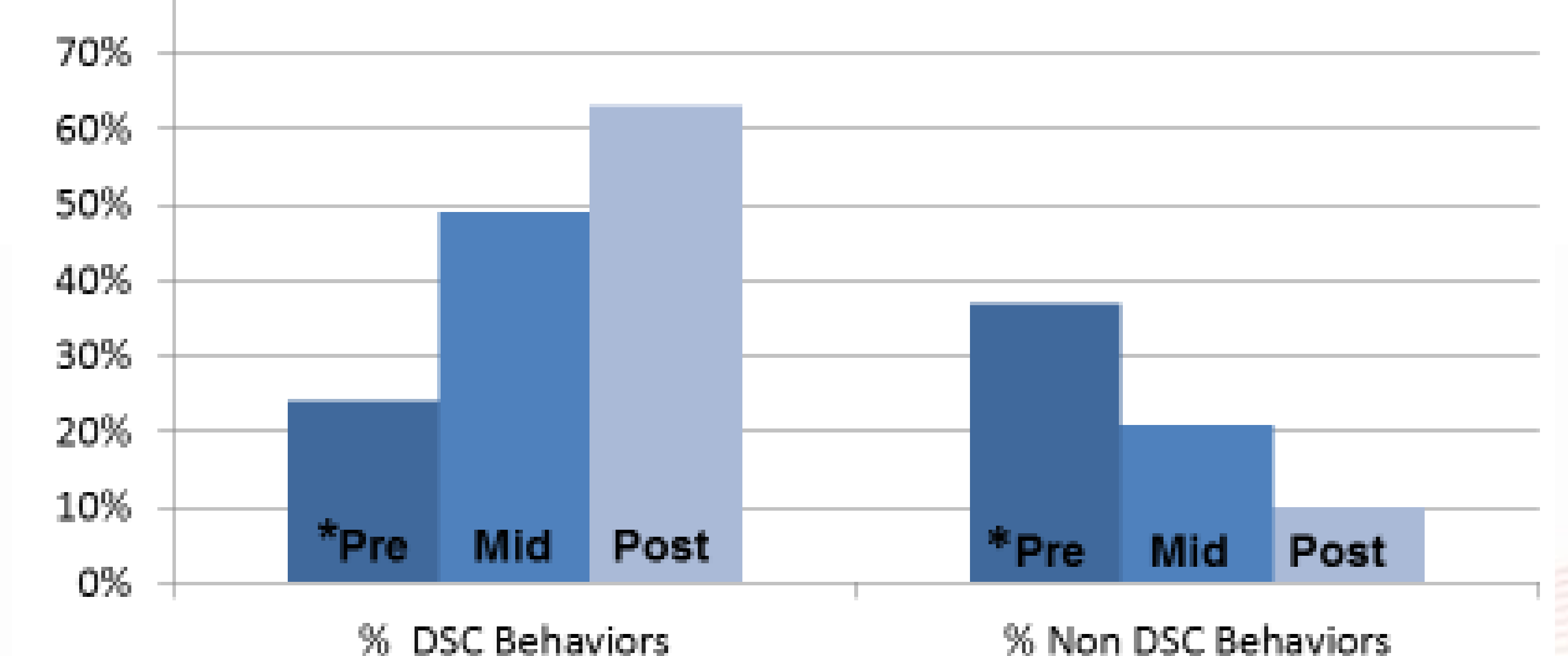
**Discussion:** Findings support OT facilitated inter-professional collaboration using KT frameworks to integrate new knowledge into clinical care in cross-cultural settings.

## Knowledge Translation Insights:

- KT is a fluid process; an interaction among/between clinical educators and knowledge users that can be highly influenced by contextual factors.
  - Addressing these contextual factors seemed to increase the amount and complexity of information that participants could absorb.
  - The initial strength-based visioning and the instructional techniques used seemed to empower nurses and increase their engagement.
- Contextual and Inter-Professional Insights:**
- Flexibility for addressing contextual factors (i.e. cultural diversity, learning mores, communication, and inter-personal) of the NICU contributed to success.
  - Nursing engagement improved when the senior DSC team physicians were present and involved; thus all team members attended each class.
  - Differences in primary languages (English, Hindi, Malayalam) added a degree of complexity that was resolved by flexibility of instructors and allowing time for paraphrasing information across languages.
  - Through participatory implementation planning, nurses and the DSC team localized global knowledge with setting specific solutions to dampen sound, make nappies fit better, provide non-nutritive suck experiences, and support positioning of infants.

**Conclusion:** KT models were useful. DSC practices were integrated into NICU care measured post KT.

Fig. 3 % Use of DSC and Non-Supportive Care over Time



\*Pre, mid, and post Developmentally Supportive Care Knowledge Translation