

EFFECTIVENESS OF IN-SERVICE EDUCATION IN ENHANCING THE
KNOWLEDGE OF NEWBORN PAIN ASSESSMENT AND NON-
PHARMACOLOGICAL MANAGEMENT OF NURSES IN THE MOTHER
BABY UNIT

By

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CHAPTER I

- The American Academy of Pediatrics recommends a mandatory serology state newborn screen (NBS) on all newborns prior to discharge (American Academy of Pediatrics, 2018).
- State of Florida (Florida Health. 2018).
- Nurses in the Mother Baby Unit are responsible for performing this procedure prior to the infant's discharge, via a heel stick

BACKGROUND AND SIGNIFICANCE

- Perception that newborns do not perceive pain
- Newborns can detect, process, and respond to painful stimuli
- Newborns have 30% to 50% lower threshold of pain
- Consequences of prolonged unrelieved pain to newborns

(Cong, Delaney, & Vazquez, 2013).

NEEDS ASSESSMENT

- Endorsement of age appropriate pain assessment and management as a standard of care when caring for newborns in the MBU
- Limited knowledge and various perceptions about newborn pain among the nurses in the MBU
- Underutilization of pain assessment and non-pharmacological pain management in newborns

(Cong, Delaney, & Vazquez, 2013).

PROBLEM STATEMENT

- Underutilization of the newborn pain assessment and non-pharmacological pain management is due to a lack of knowledge by nurses who care for newborns (Cong, Delaney, & Vazquez, 2013).
- The importance of ongoing in-service education programs can be worthwhile and lead to an increase in the nurse's awareness, knowledge, competence, of newborn pain assessment and management and potentially improve newborn outcomes (Norushe, Van Rooyen, & Strumpher,

PROJECT PURPOSE

- To determine the effectiveness of in-service education to nurses on the Mother Baby Unit (MBU) on newborn pain assessment and in providing non-pharmacological interventions to newborns during a heel stick procedure.
- To support the healthcare organization's mission to provide and maintain high-quality care

PROJECT OBJECTIVES

- To increase the nurses and hospital administrators awareness about the effectiveness of in-service education in enhancing the knowledge of nurses on evidence-based newborn pain assessment tool
- To implement a evidence- base newborn pain assessment tool that enhance will the knowledge of nurses on the MBU.
- To initiate different non-pharmacological pain management (comfort measures) to newborns by the end of January 2020.

PROJECT OBJECTIVES CONT'D

- Enhancement of knowledge will be reflected in about 80% or greater on the responses of the post questionnaire as compared to the pre-educational questionnaire.

CLINICAL QUESTION

- “Do nurses in the MBU demonstrate increased awareness of newborn pain assessment and the use of comfort measures during a heel stick procedure a one month period after receiving in-service education on newborn pain assessment than was provided in a one month prior to receiving education on the newborn assessment education”.

CONGRUENCE WITH THE ORGANIZATIONAL STRATEGIC PLAN

- The Mission, Vision, Philosophy and Strategic Plan of the organization
- Provision of exceptional care, innovative health care, accompanied by clinical excellence
- Providing quality healthcare and wellbeing of the community and caregivers
- Efficiency among healthcare providers, provides great investment

SEARCH STRATEGY

- Various search engines for the appraisal of evidence and the application of a conceptual framework is presented in this chapter
- PubMed, NIH, Google Scholar, and the Cochrane database.
- Number of articles
- Inclusion criteria

SYNTHESIS OF EVIDENCE

- In-service education
- Non-pharmacological intervention (Comfort measures)
 - Breastfeeding
 - Swaddling/Holding
 - Non- nutritive sucking
 - Skin to skin
- Infant pain.

CONCEPTUAL FRAMEWORK

- Watson's comfort theory
- Caring is the center of the practice of nursing
- Caring promotes growth
- Maintains or attain health
- A holistic approach in the provision of health care

(Watson, 1985).

CHAPTER II

METHODOLOGY

- The study/project surveyed the knowledge of nurses on the MBU two weeks prior to presenting an in-service education on newborn pain assessment and the provision of comfort measures and a survey three weeks after the in-service education.

PROJECT DESIGN

A quality improvement project

This is a systematic approach to analyze practice performance and knowledge in an effort to improve the care of newborns by nurses on the MBU.

CLINICAL PROJECT SETTING

- A suburban hospital in Stuart, Florida
- 10 bed Mother Baby Unit
- Approximately 800 babies are born per year
- Gestational ages between 35 to 40 weeks.

POPULATION

15 Registered full time nurses

- Qualification of Nurses
 - Master of Science in Nursing - 2
 - Bachelor of Science in Nursing - 6
 - Registered nurses with Associate degree -7
- Years of nursing experience ranges from 6 months to 25years

DATA COLLECTION INSTRUMENT

The Likert Scale questionnaire

- 10 questions on the Likert scale
- 1 indicates strongly disagree
- 3 indicates neutral
- 5 indicates strongly agree

PROJECT PLAN

- Consent forms
- 10 questions on Likert scale pre questionnaire
- Analysis of responses of prequestionnaire
- 20 minute power-point presentation on newborn pain assessment and provision of comfort measures.
- 10 questions on Likert scale post questionnaire
- Analysis of post questionnaire responses

DATA ANALYSIS

- Analysis of pre questionnaire
- Re-enforcement of newborn pain assessment tool
- Re-enforcement of comfort measures
- Analysis of post questionnaire

INSTITUTIONAL REVIEW BOARD/ETHICAL ISSUES

- Application submitted for approval to the IRB
- Approval letter from director of the MBU
- Consent forms to participants (voluntary)
- Explanation of project benefits
- No risks involved

CHAPTER III

- Evaluation of Organizational readiness and Cost effectiveness analysis of the project

ORGANIZATIONAL ASSESSMENT

- Readiness for change
- Barriers
- Interprofessional collaboration
- Cost factors

ORGANIZATIONAL ASSESSMENT CONT'D

Readiness for Change

- To meet current and future health needs of patients
- Quest for achievement of higher Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- Enhancement of hospital experience by patients and their parents

ORGANIZATIONAL ASSESSMENT CONT'D

Barriers

- Managers concern about money and time factors
- MBU nurses resistance to change due to time constraints
- Lack of motivation by nurses on the MBU

ORGANIZATIONAL ASSESSMENT CONT'D

Interpersonal collaboration

- Application of effective communication skills
- Development and implementation of evidence-based practice models
- Involvement of the multidisciplinary healthcare team

COST FACTORS

- Participants paid by their hourly wage per minutes spend at the In-Service Education approximately 20-30 minutes (Cost to Organization)
- No cost to student

CHAPTER IV

RESULTS

Analysis of Implementation Process

- Objectives of quality improvement project shared with participants
- Consents forms given out to participants
- Participants informed about withdrawal from project at any time
- Protection of privacy maintained (Questionnaire box).
- Data collection tool- Likert scale with ten questions

ANALYSIS OF IMPLEMENTATION CONT'D

- Questionnaire – Pre and Post educational presentation
- Participants given pre-educational questionnaire
- Completed pre-educational drop in a questionnaire box
- 20 minute power-point presentation on Newborn Pain Assessment and Nonpharmacological Management (comfort measures) during a heel stick, two weeks after collection of Pre-educational questionnaire.

ANALYSIS OF IMPLEMENTATION CONT'D

- Post – educational questionnaire given to participants three weeks after power-point presentation
- Pre and post educational responses analyzed
- Time frame for implementation was eight weeks.
- Questionnaire responses destroyed in the hospital shredder after project completion.

ANALYSIS OF OUTCOME DATA

- Responses by 15 participants of Pre-educational questionnaire
- No comments on pre-educational questionnaire
- Post-educational responses
- Comments on post-educational questionnaires
- Percentages of the pre and post responses indicates about 80% improvement on enhancement of awareness by the nurses.

PERCENTAGES OF PRE-QUESTIONNAIRE RESPONSES

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|------------------|-------------------|----------|------------|-----------|----------------|
| Pretest Response | | | | | |
| Q1 | 0 | 0 | 8(53.33%) | 4(26.66%) | 3((20%) |
| Q2 | 0 | 0 | 0 | 0 | 15(100%) |
| Q3 | 0 | 0 | 9(60%) | 3(20%) | 3(20%) |
| Q4 | 0 | 0 | 10(66.67%) | 4(26.66%) | 1(6.67%) |
| Q5 | 0 | 0 | 10(66.67%) | 4(26.66%) | 1(6.67%) |
| Q6 | 0 | 0 | 10(66.67%) | 4(26.66%) | 1(6.67%) |
| Q7 | 0 | 0 | 11(73.33%) | 3((20%) | 1(6.67%) |
| Q8 | 0 | 0 | 10(66.67%) | 4(26.66%) | 1(6.67%) |
| Q9 | 0 | 0 | 11(73.33%) | 3((20%) | 1(6.67%) |
| Q10 | 0 | 0 | 9(60%) | 5(33.33%) | 1(6.67%) |

PERCENTAGES OF POST QUESTIONNAIRE RESPONSES

| | | | | | |
|-----|---|---|-----------|------------|-----------|
| Q1 | 0 | 0 | 0 | 12(80%) | 3((20%) |
| Q2 | 0 | 0 | 0 | 0 | 15(100%) |
| Q3 | 0 | 0 | 0 | 9(60%) | 6(40%) |
| Q4 | 0 | 0 | 1(6.67%) | 11(73.33%) | 3((20%) |
| Q5 | 0 | 0 | 0 | 14(93.33%) | 1(6.67%) |
| Q6 | 0 | 0 | 0 | 12(80%) | 3((20%) |
| Q7 | 0 | 0 | 9(60%) | 5(33.33%) | 1(6.67%) |
| Q8 | 0 | 0 | 5(33.33%) | 9(60%) | 2(13.33%) |
| Q9 | 0 | 0 | 3(20%) | 11(73.33%) | 1(6.67%) |
| Q10 | 0 | 0 | 1(6.67%) | 13(86.67%) | 1(6.67%) |

ANALYSIS OF OUTCOME DATA CONT'D

- Paired sample t test used to analyze results
- Response of pre-educational questionnaire was 0.20 standard deviation
- Responses of the post-educational questionnaire was 0.15
- Difference of 1.64 standard deviation from the pre-educational responses as compared to post-educational responses.

ANALYSIS OF OUTCOME DATA CONT'D

- Inservice education on Newborn Assessment and Nonpharmacological (comfort measures) during a heel stick made an improvement in the knowledge and awareness of the nurses in the MBU.

CHAPTER V

DISCUSSION

SUMMARY OF FINDING AND OUTCOME

- Use of evidence- based newborn pain assessment tool
- Benefits of in-service education
- Improvement of nurses knowledge
- Utilization of the Newborn pain assessment tool
- Provision of comfort of newborns during a heel stick



- Copied from Research Features



- Copied from Semantic Scholar



- [ScienceDirect.com](https://www.sciencedirect.com)

DISCUSSION CONT'D

Limitation

- Lack motivation of some of the participants in regards to continuing education
- Time limitations in regards to high work load
- Introduction of new tasks /responsibilities for participants

DISCUSSION CONT'D

Implications and Impact to Practice

- Promotion of empowerment to nurses
- Increase in competency among nurses
- Meeting needs of patients
- Achievement of organizational goals
- Positive impact on nurses attitudes and knowledge

DISCUSSION CONT'D

Future Research

- To include registered nurses in the Neonatal intensive care unit and Labor and Delivery department
- To include Patient care technicians
- Continuous education on up dates on current evidence-based practices.

CHAPTER VI

CONCLUSION

Value of the Project

- Nurses understanding of the neurosensory needs of newborns
- Nurses performing heel sticks on newborns with parental involvement
- Promotion of family centered care
- Incorporating newborn pain assessment and the provision of comfort measures in new employee orientation

CONCLUSION CONT'D

Value of the Project

- Biannual education on newborn pain assessment, the utilization of the newborn pain assessment tool, and the provision of comfort measures during a heel stick procedure.

CONCLUSION CONT'D

DNP Essentials

- Understanding and the incorporation of all the DNP Essentials during the quality improvement project.

DNP Essential I: Scientific Underpinnings for Practice

The review of literature, integration of research and the understanding of a conceptual framework.

CONCLUSION CONT'D

DNP Essential II: Organizational and Systems Leadership for Quality Improvement

- Initiating a needs assessment to improve patient care and the collaboration with the leaders of the organization

CONCLUSION CONT'D

DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

- Application of evidence-based practice and information technology in healthcare delivery

CONCLUSION CONT'D

DNP Essential IV: Information Systems/Technology and Patient care Technology for the Improvement and Transformation of Healthcare

- Development of concepts and knowledge in healthcare technology

CONCLUSION CONT'D

DNP Essential V: Healthcare Policy for Advocacy in Healthcare

- Advocating for the safety and rights of the patients
- Advocating for a professional standard of practice

CONCLUSION CONT'D

DNP Essential VI: Inter-Professional Collaboration for Improving Patient and Population Health Outcomes

- Improvement in collaborative and communication skills with multidisciplinary teams

CONCLUSION CONT'D

DNP Essential VII: Clinical Prevention and Population health for Improving the Nation's Health

- The use of questionnaire in assessing nurses knowledge
- The use of in-service education to enhance nurses knowledge

CONCLUSION CONT'D

DNP Essential VIII: Advanced Nursing Practice

- Discussions and receiving feedback from program chair and mentor.

CONCLUSION CONT'D

Plan of Dissemination

- Development of a plan to sustain the practice of newborn pain assessment.
- The utilization of the newborn pain assessment tool
- The implementation of comfort measures during a heel stick
- Provision of resources by the organization for continuing education for nurses

CONCLUSION CONT'D

Attainment of Personal and Professional Goal

- Improvement in communication skills
- Ease with collaboration with other team members
- Enhanced leadership skills
- Application of conceptual frame works
- Improvement in the ability to search and understand data bases on healthcare.
- Ability to be a better mentor other nurses

CONCLUSION CONT'D

Attainment of Personal and Professional Goal

- Improvement in advocacy for nurses and patients.

REFERENCES

- American Academy of Pediatrics. (2018). *Program to Enhance the Health & Development of Infants and Children (PEHDIC)*. Retrieved from <https://www.aap.org/en-us/advocacy-and-policy/app-health-initiatives/PEHDIC/Pages/Newborn-Screening.aspx>
- Cong, X., Delaney, C., & Vazquez, V. (2013). Neonatal nurses' perceptions of pain assessment and management in NICUs: a national survey. *Adv Neonatal Care*. 13(5):353-60. doi: 10.1097/ANC.0b013e31829d62e8

REFERENCES CONT'D

- Florida Health. (2018). *Newborn Screening*. Retrieved from <http://www.floridahealth.gov/programs-and-services/childrens-health/newborn-screening/index.html>

REFERENCES CONT'D

- Norushe, T. F., Van Rooyen, D., & Strumpher, J. (2004). In-service education and training as experienced by registered nurses. *Curationis*. 27(4), 63-72.
- Watson, J. (1985). *Nursing: The Philosophy and Science of Caring*. Retrieved from <http://www.nursing-theory.org/theories-and-models/watson-philosophy-and-science-of-caring.php>

QUESTIONS

