

Implementation of Evidence-Based Nursing: Challenges and Barriers

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Nursing research provides the foundation for evidence-based nursing (EBN) practice. Evidence-based practice (EBP) has gained momentum in nursing although definitions vary widely. Research findings, knowledge from basic science, clinical knowledge and expert opinion are all considered “evidence”. However, practices based on research findings are more likely to result in the desired patient outcomes across various settings and geographic locations. The staff nurse is a critical link in bridging research-based changes into clinical practice. Depending on the environment, a health care organisation may or may not have the resources to ensure critical, succinct, reasonable evaluation and application of research findings as they relate to the point-of-care delivery. Both EBM and EBN fall under the umbrella of evidence-based practice. Nurses are committed to providing holistic care; treating and working with patients rather than working on them. Effectiveness of treatment is only one part of the clinical decision-making process. In deciding on therapeutic interventions, acceptability to the patient and cost-effectiveness are considered. Several barriers in implementing evidence-based practice have been identified. Nurse administrators are key leaders in facilitating an EBP culture within a healthcare facility. They are in the best position to support new nurses in their transition and in evidence-based practice.

The past century has witnessed spectacular changes in the way we live and think. Human brilliance and technology have come together to propose solutions we dared not imagine 50 years ago. Many diseases have been conquered, millions of people have been saved from premature death and disability and the search for better solutions to health care is on.

In EBP approach, health care professionals use the best evidence possible, i.e. the most appropriate information available, to make clinical decisions for individual patients. It involves complex and conscientious decision-making based not only on the available evidence but also on patient characteristics and preferences.

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Theory-guided practice must be placed at the core of nursing and must integrate relevant outcome-driven practice with the art & science of caring & healing (Walker & Redmon, 1999). EBP requires nurses to base treatment on scientific research. However, the ideas behind the practice were introduced long before by the nursing pioneer Florence Nightingale.

It was during late 1980's that EBP originated in medicine. It was built on the promise that health professionals should not centre practice on traditions & beliefs but on sound information grounded in research findings and scientific developments. There is an ongoing emphasis on development of nursing knowledge through research and theory building to improve their practice basis. Nursing relies on multiple ways of knowledge because it has characteristics of social, behavioural, and biological sciences.

Implementing treatment after analysing the reviews is an important step in evidence-based nursing practice. Everyone involved in treating the patient will use the research information to create a treatment plan. EBP represents a shift toward more scientific inquiry in patient care. However, personal experience, wisdom and patient relationships are still very much a part of successful nursing care.

Some examples are given below which bridge the gap from research to clinical practice. These examples show that research evidence plays a significant role in health care practices. Different persons and populations need not respond similarly to interventions.

Challenges & Barriers

Nurses face real challenge when translating best evidence into clinical practice. For example, the relevant research-based databases are not comprehensive in many areas. Also, there is ongoing explosion in the amount and type of information available. Some of the barriers are as follows:

1. Lack of administrative support.
2. Lack of time to critically appraise literature for relevant and best evidence.

Practice	Evidence
CRITICAL CARE	
Reduction of VAP by oral care	♦ Ventilator-associated pneumonia is defined as pneumonia that occurs 48 hours or more after intubation. ♦ Oral hygiene has been identified as one important weapon in the defense against VAP.
Care of CVP with Chlorhexidine	♦ Chlorhexidine (effective skin disinfect) bathing was associated with significant reductions in central venous catheter-associated bloodstream infections. ♦ To prevent infection, the site of the cannula insertion should be cleaned for a minimum of 30 seconds with equivalent skin cleansing solution (0.5% chlorhexidine in 70% alcohol).
Music therapy--a complementary treatment for mechanically ventilated intensive care patients:	♦ A significant fall in systolic and diastolic blood pressure during the music therapy session and a corresponding rise after cessation of treatment.
Hyperbaric oxygen therapy for the adjunctive treatment of traumatic brain injury	♦ HBOT may reduce the risk of death and improve the final GCS and may reduce patient death and disability. ♦ HBOT can improve oxygen supply to the injured brain, reduce the swelling associated with low oxygen levels and reduce the volume of brain that will ultimately perish.
Milking and stripping is no longer recommended to maintain patency	♦ This practice causes increased intra pleural pressure and damages the pleural tissue. ♦ New tube contains a non-thrombogenic coating, thus decreases the potential for clotting. ♦ If it is necessary to help the drainage move to the tubing, apply a gentle squeeze –release motion to small segments of the chest tube between the fingers.
Deep breathing and coughing exercises for post-surgical patients	♦ Deep breathing and coughing exercises can decrease the risk of lung complications following surgery, deep breathing helps to get more oxygen to the body's cells. ♦ Coughing and deep breathing work to clear mucus and allow moist air to enter the airways.
HEALTH PROMOTION AND PREVENTIVE RISK BEHAVIOUR	
Papaya dressing The pulp of the papaya fruit is mashed and applied daily to full thickness to the infected wounds and burns	♦ It appears to be effective in de-sloughing necrotic tissue, preventing burn wound infection, and providing a granulating wound suitable for the application of a split thickness skin graft. ♦ Papaya also contains carpaine and aglycones which have a broad spectrum antimicrobial act. ♦ The juice has been used for treatment of warts, corns, and cancers, the roots for piles and yaws, the leaves for nervous pains and the fruit for infected wounds, malignant tumours and burns.
Vitamin C prevents infections	♦ In the immune system, the major role of vitamin C seems to be as a physiological antioxidant, protecting host cells against oxidative stress caused by infections. ♦ Vitamin C increases the functioning of phagocytes, the proliferation of T-lymphocytes and the production of interferon, and decreased the replication of viruses.
Head end elevation	♦ There is evidence that a sustained supine position (zero-degree head-of-bed elevation) increases gastro oesophageal reflux and the probability for aspiration. ♦ Elevating the head of the bed to an angle of 30 to 45 degrees, unless contraindicated, is recommended for patients at high risk for aspiration pneumonia.
Saline nasal irrigation for upper respiratory conditions	♦ SNi is a safe, effective, and tolerable therapy for patients with chronic rhino sinusitis. ♦ Saline nasal irrigation is an adjunctive therapy for upper respiratory conditions that bathes the nasal cavity with spray or liquid saline.
REPRODUCTIVE INFANT HEALTH	
Effective intervention for breast engorgement	♦ Cabbage leaves would reduce breast engorgement; the green cabbage plant contains a high concentration of sulphur, which is known to reduce swelling and inflammation in all tissues. ♦ Do not reuse leaf. Use the cabbage leaves for about 2 days or until the engorgement gets
Kegel exercises for pregnant woman	♦ Kegel exercises, also called pelvic floor exercises, help strengthen the muscles that support the uterus, bladder, and bowels. Kegel exercises also help strengthen vaginal muscles. ♦ Toning all of these muscles will also minimise two common problems during pregnancy: bladder control and haemorrhoids. It is also recommended after pregnancy to promote
Early oral intake and gastrointestinal function after caesarean delivery	♦ Early oral intake after caesarean delivery improves the return of gastrointestinal function and does not increase the occurrence of gastrointestinal complications. ♦ A neurogenic non-adrenergic pathway of post-operative ileus is activated during abdominal surgery and until three hours after surgery. ♦ To avoid stimulating this neurogenic pathway, oral intake (liquid diet and solid diet) between six to eight hours after caesarean delivery is suggested.
Hospital use of sucrose water for new-born pain relief	♦ The sucrose (due to the sweet taste) and pain relief are interrelated through the body's endogenous opioid system which provides natural analgesia, safe intervention for relieving pain during venepuncture or heel stick in pre-term and term infants.

Effect of kangaroo mother care	♦ Implementing skin-to-skin care for full-term and pre-term babies for thermoregulation, decreasing bradycardia and apnoea. ♦ Kangaroo mother care (KMC) is widely considered to be the most feasible, readily available, preferred intervention for LBW, premature infants, thereby decreasing neonatal morbidity and mortality. ♦ KMC may lessen maternal depression.
Delayed umbilical cord clamping and neonatal outcomes	♦ Several systematic reviews have clamping the umbilical cord in all births should be delayed for at least 30-60 seconds. ♦ Delayed cord clamping increases early haemoglobin concentrations and iron stores in infants. This extra iron, combined with body iron (approximately 75 mg / kg of body weight) present at birth in a full-term new-born, may help prevent iron deficiency during the first year of life.
Infrared rays for episiotomy wound healing	♦ The infrared therapy is effective in reducing episiotomy pain and promotes early wound healing and reduces the chance of infection in post-natal mothers.
CHRONIC ILLNESS AND LONG TERM CARE	
Vitamin D for the management of multiple sclerosis	♦ Low levels of vitamin D have been proposed as an environmental factor contributing to the development of MS. ♦ Vitamin D has a role in regulating immune response, by decreasing production of pro-inflammatory cytokines and increasing production of anti-inflammatory cytokines.
Iron supplementation for breath holding attacks in children	♦ Iron deficiency anaemia may lead to adverse effects on oxygen uptake in the lungs and so reduce available oxygen to the tissues, including central nervous system tissue. ♦ Iron supplementation (at 5 mg/kg/day of elemental iron for 16 weeks) appears to be useful in reducing the frequency and severity of breath-holding attacks.
Alexander technique for chronic asthma	♦ The Alexander Technique is a form of physical therapy involving a series of movements designed to correct posture and bring the body into natural alignment and aid relaxation. ♦ The technique has been used by people with asthma and to try and improve breathing and reduce the usage of medications.
Exercise can help reduce cancer-related fatigue	♦ Aerobic exercises, both during and after cancer treatment, can be beneficial.
SYMPTOM MANAGEMENT	
Abdominal massage relieves constipation	♦ Abdominal massage can relieve constipation of various physiological causes. ♦ It stimulates peristalsis, decreases colonic transit time and increases the frequency of bowel movements. ♦ It also reduces discomfort and pain, induces relaxation and improves quality of life.
Care of thrombophlebitis	♦ Superficial thrombophlebitis is one of the very common complications of long-term intravenous therapy. ♦ Magnesium sulphate application is most effective intervention in reducing the superficial thrombophlebitis.
Cold application for symptom management	♦ Cold saline was an effective method of reducing temperature in children with acute brain injury. ♦ This approach can be considered to treat fever or to induce hypothermia.

- Lack of knowledge regarding evidence-based practice strategies.
- Uncertainty that evidence based practice will result in better patient outcome than traditional care.
- Lack of interest.
- Lack of confidence in critical appraisal skills.
- Nurses feel overwhelmed by the volume of evidence.
- Lack of authority and co-operation to change patient care procedures.
- Negative beliefs, attitudes and values.
- Educational preparations.
- Heavy patient workloads.
- Lack of support from nurse managers.
- Different goals for practice between administrators and staff nurses.
- Lack of evidence-based practice mentors in health care systems.
- Lack of resources, inadequate staffing
- Difficulty in understanding statistical analysis.
- Limited IT Skills / Lack of Searching Skills.

Conclusion

From the beginning of the nursing research endeavour, nurses have been interested in using nursing

research to effectively impart the care of individuals. It is important for nurses to advance EBP by assessing the barriers to EBP, correcting the misperceptions about EBP goals and question the current clinical practices. Health care administrators must facilitate an environment that fosters intellectual curiosity & support research efforts.

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