**REVIEW ARTICLE**

# EVIDENCE BASED PRACTICE IN HEALTH CARE: A REVIEW

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**Abstract:**

Evidence -Based Practice (EBP) is a systematic approach to clinical decision-making that combines patient preferences, professional knowledge, and the best available research data to enhance health outcomes. EBP, which emerged from evidence-based medicine in the 1990s, is now a fundamental aspect of contemporary nursing practice and healthcare. It entails developing precise clinical questions, locating and evaluating pertinent research, and implementing proven results in patient care. This procedure guarantees that interventions are not only successful but also customized to meet the needs and circumstances of each individual. EBP promotes cost-effective practices and minimizes unnecessary variances in practice, improving the quality, safety, and efficiency of care. EBP helps nurses stay up to date with the fast changing scientific and technological landscape by encouraging professional accountability, critical thinking, and lifelong learning. Access to up-to-date information and guidelines, sufficient training, and institutional support are necessary for the effective application of EBP. Interprofessional cooperation, mentoring, and leadership are necessary to overcome obstacles such time restraints, resource scarcity, and change aversion. All things considered, EBP changes healthcare from tradition-driven procedures to evidence-based decision-making, which enhances clinical results, organizational performance, and patient satisfaction. Health systems can guarantee that care delivery stays effective, responsive, and in line with the best available scientific evidence by integrating EBP into practice, policy, and education.

**Keyword:** Hierarchy of Evidence, Scientific Research, Appraisal Tools and Frame Work.

## Introduction:

Evidence Based Practice (EBP) in nursing and health care is a method used to make clinical decisions. It combines the best research evidence, the expert knowledge of healthcare professionals and the personal preferences of patients to improve health results. It goes beyond traditional method that

rely only on experience, instinct or habit and instead uses up-to-date, reliable evidence to guide patient care.

In today's fast changing health care environment, EBP ensures that nursing actions are safe, effective and in line with the most recent scientific information. It connects research with real world practice, allowing nurses and health care workers to offer care that is not only based on science but also adapted to each patients individual's needs, values and cultural background. By encouraging critical thinking, ongoing learning and the use of research in daily practice, EBP improves the quality of care, increase patient satisfaction and leads to better health care outcomes. It is a key part of modern nursing and health care, ensuring that decisions are well informed, logical and centered around the patient.

**Importance of Evidence-Based Practice (EBP) in Nursing and Health Care**

**1. Improves Patient Outcomes**

EBP ensures that care is based on the latest scientific research which helps to reduce errors, complications and mortality rates while improving recovery and quality of life.

**2. Enhances Quality of Care**

By applying the best available evidence, nurses and healthcare providers deliver safe, effective and standardized care, leading to higher quality services.

**3.Promote Cost Effectiveness**

Reduces unnecessary treatments, hospital stays and use of outdated interventions, making health care more affordable for patients and systems.

**4. Encourages Critical Thinking and Clinical Decision Making**

Nurses and practitioners analyse research findings and integrate them with clinical expertise and patient preferences leading to more informed decisions.

**5. Bridges the gap between research and practice**

EBP translates current research findings into clinical settings, ensuring that practice keeps pace with scientific advancements.

**6. Increases Patient Satisfaction**

Patients are more likely to trust and engage in their care when they know treatments are based on proven evidence and their personal values are considered.

**7. Supports Professional Development**

Encourages lifelong learning, skill improvement and professional accountability for healthcare providers.

**Evolution of Evidence-Based Practice (EBP) in Health Care**

**1. Early Roots (Pre-20$^{th}$ Century)**

- Health care was mainly based on tradition, what experts said or personal stories
- Ancient methods relied a lot on authority, culture or just trying things out
- There was not much use of science in making medical decisions

**2. Emergence of Scientific Medicine (19$^{th}$ Century)**

- Discoveries in anatomy, body functions, microbes and diseases stated shaping how doctors thought

- Watching patients and doing experiments became more important
- Florence Nightingale used numbers to show that clean environment helped patints get better during the Crimean war in the 1850.

**3. Early 20th Century – Research Integration**

- Doctors and nurses started using research more in their work
- Randomized controlled trials (RCTs) were developed with the first famous one by Sir Austin Bradford Hill in 1948 about using streptomycin for tuberculosis.
- More attention was given to using facts and studies to choose treatments

**4. 1970s–1980s – Conceptualization of EBP Archie Cochrane (1972)**

- He pointed out that health care was no being properly tested and argued that RCTs were the best way to find out what works
- Clinical epidemiology became a field that connected research with making medical decisions
- Nursing research started focusing on what is needed for patients and the outcomes are considered important

**5. 1990s – Birth of Modern EBP**

- The term Evidenced based medicine (EBM) became popular by Gordon Guyatt and other at McMaster University in Canada
- In 1993, the Cochrane Collaborations was created to review and combine health care research.
- EBM grew into Evidence Based Practice (EBP), which includes nursng, other health professionals and public health.

**6. 2000s – Expansion and Standardization**

- Clinical practice guidelines were made using careful reviews of studies
- Patients values and choices were included along with the best evidence and skills of doctors.
- Nursing and other health fields fuuly adopted EBP as part of their training, recognition and professional standards.
- Databases like CINAHL, PubMed, and the Cochrane Library were developed to make research easier to find.

**7. 2010s – Digital and Global Growth**

- Technology made it easier to access research through electronic health records, tools that help to make decisions and apps on phones.
- EBP became key for improving care, keeping patients safe and shaping healthcare policies.
- Global efforts encouraged the use of EBP in different health care settings especially in placs that are less developed.

**8. Present and Future Trends (2020s Onwards)**

- Precision medicine and artificial intelligence (AI) are helping to provide care to individuals
- More use of big data and real-world experience is being made.
- Patients and communities are getting involved more in making health care choices using shared decision making.

- Teams of different healthcare professionals are working together to provide better, more complete care.

**Steps of the Evidence-Based Practice (EBP) Process in Health Care:**

**1.. Ask the Clinical Question**

- Create a clear, specific and answerable question about patient care

**2. Search for the Best Evidence**

- Perform a thorough search of medical databases, journals, guidelines and research studies
- Use trusted sources such as as PubMed, CINAHL, Cochrane Library, and others.

**3. Critically Appraise the Evidence**

- Review the quality, validity and reliability of the research findings
- Look at the study design, sample size, biases and how well the results applied to the situation.

**4. Integrate Evidence with Clinical Expertise and Patient Preferences**

- Combine the best research evidence with the professional experience and knowledge
- Consider about patients values, cultural background and personal preferences.

**5. Implement The Evidence Into Practice**

- Apply the evidence-based approach in real world clinical settings
- Provide training or education to staff, patients and caregivers when needed

**6. Evaluate the Outcomes**

- Check how well the intervention worked
- Determine if it led to better patient results, safety and overall quality of care

**7. Disseminate the Results**

- Share the findings with peer groups during conferences or through publications
- This helps to spread knowledge and improve the standard of care across the profession

**Types of Evidence-Based Practice (EBP):**

**1. Quantitative Evidence**

It comes from data that can be measured like numbers and statistics. Examples are randomized controlled trials, cohort studies and case control studies.

**2. Qualitative Evidence**

It is based on people's experiences, feelings and stories. Examples are interviews, focus groups and ethnographic studies.

**3. Mixed-Methods Evidence**

It uses both quantitative and qualitative methods to get a information.

**4. Expert Opinion and Consensus**

It is used when there is not enough research evidence. It comes from specialist in the field.

**5. Clinical Evidence from Practice**

The data is collected directly from patient care such as case studies and clinical observations

**6. Systematic Reviews and Meta-Analyses**

These are summaries of many studies, providing strong and reliable conclusions.

**Sources of Evidence in Evidence-Based Practice**

Evidence for making informed healthcare decisions comes from various places, including:

**1. Research Studies**

- Primary research (individual studies)
- Secondary research (systematic reviews, meat analysis)

**2. Clinical Expertise**

- Knowledge, skills and experience of health care professionals

**3. Patient Preferences and Values**

- Personal, cultural and spiritual choices that affect treatment decisions

**4. Organizational Data**

- Information from quality improvement projecsts, audits, patient outcomes and hospital records.

**5. Clinical Practice Guidelines (CPGs)**

- Evidenced based recommendations made by expert groups.

**6. Textbooks and Reference Materials**

- Summarized information used to teach and guide clinical decisions.

**7. database and repositories**

- The examples include PubMed, Cochrane Library, CINAHL, and MEDLINE.

**Hierarchy of Evidence:**

The hierarchy of evidence also called as level of evidence is an important aspect in evidence – based practice. It helps to find the best evidence by starting from the top. First look for a recent well done systematic review and then move down to lower levels of evidence to support the statement or answer the question.

**Systematic Review**

A systematic review is a type of research that summarizes medical reports on a specific clinical question. It uses clear methods to search, assess and combine all the available studies on the topic. This is especially useful when there are many studies, some with conflicting results because it brings all the findings together. By presenting a clear and detailed summary of all the studies on a specific topic, systematic reviews allow us to consider all relevant findings from research. It helps to determine whether scientific results are reliable and apply to different populations, settings and types of treatment or if the findings vary significantly among certain groups.

**Meta-Analysis**

After a systematic review, data from individual studies can be combined in a quantitative way and reanalyzed using statistical methods. This method is called a meta-analysis. The purpose for using a metaanalysis is that combining the samples from different studies increases the overall sample size, improving the statistical power and accuracy of the treatment effect.

**Randomized Controlled Study**

This is an experimental design used to test the effectiveness of a new medication or treatment. Participants are randomly assigned to either a treatment group (receiving the new therapy) or a control group (receiving a placebo or standard treatment ) and the outcomes are then compared.

**Cohort Study**

A cohort study is an analytical type of research where a group with a shared characteristic such as smoking or a specific disease is followed over time. This group is compared with another group that does not have the characteristic such as nonsmokers or people without the disease.

**Case-Control Study**

This is a non experimental study that uses an epidemiological approach. It involves comparing people who have a particular condition (cases) with those who do not (control). The two groups are matched for factors like age, sex and other personal information to find out which factors may be causing the higher disease rate in the case group.

**Case Report**

In medicine, a case report is a detailed account of a single patients symptoms, diagnosis, treatment and follow up. These reports usually describe an unusual or new occurrence and may include the patient's demographic details.

**Editorial**

An editorial is an article in a news paper or publications that presents the viewa or opinions of the publisher, editor or editorial team.

**Evidence-Based Practice: Types of Research:**

**Quantitative Research**

Quantitative research is used to collect data that can be expressed as numbers.in medical field, the common types are

- **Case Report or Case Series**: A report about one or more patients. There is no control group and this type of study has low statistical validity.
- **Case Control Study**: It compares patients who have a specific outcome (cases) with those who do not (controls). It is useful for studying the causes of a condition but is possible for bias in determining cause and effect.
- **Cohort Study:** It follows two groups of patients over time those who received an intervention and those who did not. It helps in studying both causes and effect. However, since the groups are not randomly assigned, there may be difference between them that affect the results.
- **Randomized Controlled Trial (RCT):** A clinical trial where participants are randomly assigned to either a treatment or a control group. This is considered the gold standard for testing the effectiveness of interventions. RCTs uses randomization and building to reduce the bias and provide strong evidence about cause and effect.

**Qualitative Research**

Qualitative research aims to explore and understand people beliefs, experiences, attitudes and interactions. It produces descriptive, non numerical information. Qualitative research methods include

- Documents: Analysis of written records such as minutes of meeting
- Passive observation: Watching and recording behavior systematically
- Participant observation: The researcher takes part in the setting while also observing.
- In-depth interview: A detailed conversation to explore specific topics.

- Focus group: A group discussion that uses interactions among participants to gather data.

**Mixed Methods**

A research study does not have to be purely quantitative or qualitative. Many studies use both the types of research. According to the Creswell and plano clerk, Mixed-Method Research collects and analyses both quantitative and qualitative data and mixes the analysis of one or more of three ways:

(1) the datasets can be merged into a cohesive whole

(2) the results of one can build on the other or

(3).one dataset might be embedded in

For example, combining surveys and experiments (both quantitative methods) may be more challenging than combining surveys with focus groups (quantitative and a qualitative method)

**Evidence-Based Healthcare (EBH), Appraisal Tools and Frameworks**

In evidence –based health care, tools and frame work like the CASP checklists, OCEBM levels of evidence and the GRADE frame work help to assess the quality and relevance of research to support clinical decisions. These tools examine a study's validity (both internal and external), the importance of its results and whether the findings can be applied in real world situations. The process involves understanding the hierarchy of evidence, considering possible biases such as lack of randomization or blinding and checking how to complete the study.

**Key Concepts in Appraisal**

1. Critical Appraisal: A methodical way of evaluating research to see whether it is trust worthy, valuable and relevant.
2. Validity: It is extent to which a study, tool or instrument measures accurately what it intends to measure which results in trustworthy conclusions.
3. Reliability: it is the consistency and stability of a measurement of research method.
4. Relevance: How important the study's topic is and how applicable its results are to a specific medical situation.
5. Bias: Systematic errors in a study's design that can lead to wrong conclusions

**Common Appraisal Tools and Frameworks**

- Hierarchy of evidence: A system that ranks the strength of evidence with systematic reviews and meta-analyses usually considered the most reliable.
- Critical Appraisal Skills Programme (CASP) Checklists: Free tools with a list of questions to help evaluate different types of studies such as randomized controlled trials (RCTs), cohort studies and systematic reviews.
- OCEBM Levels of Evidence: A system that classifies evidence based on study design to help people understand the strength of the findings
- GRADE (Grading of Recommendations, Assessment, Development and Evaluations): A clear and open system for presenting and summarizing evidence, broadly used to assess the quality of evidence.
- PICO format: A frame work to create clear and focused clinical questions, focusing on population, intervention, comparison and outcome.

**Appraisal Process Steps**

1. Identify The Problem- Formulate a clear question using the PICO format.
2. Search For Literature- Conduct an in –depth search to find relevant studies.
3. Critically Appraise the Evidence –Use appraisal tools to assess the studys validity, reliability and relevance.
4. Apply The Evidence-Use the evaluated evidence in real –world clinical practice

**Challenges of Evidence-Based Practice**

1. Lack of time –There is often not enough time to search for and apply the best available evidence due to heavy workload and patient cases.
2. Limited or poor research- there is not enough good quality research available for all conditions and situations
3. Resource overload – It is hard to find the right resources among a large number of options
4. Access to resources – gaining access to necessary resources can be difficult.
5. Lack of administrative support –ther is often not enough support from the organization to promote evidence based practice
6. Low critical appraisal skills- many professionals lack the skills need to critically appraise research.

**Advantages of Evidence-Based Practice**

- It provides the most reliable and objective way to ensure and maintain high quality and safety in medical care
- It is useful to bring new research findings from the lab into real world practice
- It has the potential to greatly reduce healthcare costs
- It can lead to better results for patients
- It makes health care provide more confident and satisfied with their roles
- It meets the needs of a patients

**Application of EBP in Clinical Decision Making**

Evidence –based practice (EBP) is a way of making decisions that combines the best available research, the physicians skill and experience and the patients individual values and preferences to provide the best possible care. The process starts by understanding the patient's situation and forming a clear question about their condition, values and needs. Then relevant research is gathered and evaluated for quality and usefulness. This evidence is then used along with clinicians' expertise and the patients personal preferences to reach shared informed decision. This thought ful process leads to better patient results, improved safety, lower costs and greater confidence and satisfaction among health care providers.

**The Three Pillars of EBP**

When using EBP to make clinical decisions, health care professionals must balance and combine three key areas.

**1. Best Research Evidence**

This includes strong, scientifically supported information from clinical trials, systemic reviews and Meta analysis

**2. Clinical expertise**

The physicians knowledge, skills and experience in treating patients are important especially when research does not fully apply to a specific case

**3. Patient Values and Preferences**

This involves the patients personal needs, beliefs, expectations and cultural background, ensuring care decisions are tailored and respectful.

**Barriers Of Evidence-Based Practice (EBP)**

The barriers that make it hard for healthcare professionals to use EBP effectively are

**1. Individual barriers**:

- Not enough knowledge or skills to use research
- Not being familiar with EBP principles
- Negative feelings or resistance to change

**2. Organisational level barriers**

- Inadequate time to search for and review evidence
- Inadequate resources like access to journals or training
- Heavy workload and inadequate staff
- Lack of support from managers

**3. Research-Related Barriers**

- Inadequate good quality relevant evidence
- Research findings that are too complicated, conflicting or hard to use

**4. Cultural and Systemic Barriers**

- Relying on old habits or routine care
- Hierarchical systems that discourage challenging existing methods.
- Poor teamwork and communication between different professionals.

**Ethical Considerations in EBP**

Ethical issues are very important when using evidence-based practice in nursing and healthcare. Some important points to consider are:

**1. Respect For Autonomy**

- Patients have the right to make decisions about their care after being given all the information.
- Nurses should explain evidence-based options clearly and respect the patients choices and cultural beliefs

**2. Beneficence**

- Care should be based on the best available evidence to help as much as possible
- Nurses should choose treatments that improve patient outcomes

**3. Non-Maleficence**

- Avoid treatments that could be harmful, even if the evidence shows they are effective in some situations
- It's important to carefully weigh the risks and benefits before using research findings.

**4. Justice**

- Every patient should have equal access to evidence-based care.
- Resources and treatments should be given fairly, without bias or discrimination.

**5. Informed Consent**

- Patients must understand the risks, benefits, and other options of evidence-based treatments
- Getting consent ensures that care aligns with the patient's values and right.

**6. Confidentiality and Privacy**

- Evidence- based interventions and research mus follow ethical rules to protect patient infomation

**Conclusion:**

The evidence based practice is important and ongoing approach for decision making and to ensure care that is effective and patient centered.EBP leads to improvement of patient care, improved quality of care and efficient professional practice.it is a fundamental frame work for advanced health care and other fields.

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