




Identify Truth from Falsity

Evidence-based Nursing
and Clinical Practice



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A female patient with urinary tract infection asked the nurse, “I am being released from the hospital, how I will prevent future infection? It’s a painful experience, and I wish not to come back again.”

The nurse reminded her, “take your medications, drink more water, eat more fruits, and you can drink cranberry juice to prevent urinary tract infection.”

The patient then asked, “What is cranberry juice? Does it really help?”

How should the nurse respond? Did the nurse use her own personal experiences or information exchanged with colleagues to respond? Or did the nurse research the newest information from the medical databases to understand the effects of cranberry juice in preventing urinary tract infection? What would you do if you were the nurse? This is one of the stories in the following study of “evidence-based nursing.”

Answers to Clinical Questions: True or False

The traditional nursing practices are mainly based on teachings from teachers and textbooks, as well as clinical experiences passed on by the senior classmates. They also rely heavily on the opinions of experts or senior professionals. However, textbook information usually falls behind recent research by at least two years, and experience accumulated by different clinical workers is usually inconsistent. Therefore, evidence-based nursing hopes to combine the newest, high-quality research outcomes with patient/family preferences as well as expert opinion to develop a basis for patient care that can be used by the nursing practitioners.

The most important premise is to be able to transform clinical observations and doubts into questions that can be answered and used for advanced data collection. For example, it is said that drinking cranberry juice can prevent urinary tract infection, but is it based on evidence? Can drinking green tea really help prevent cancer? Then, are people who smoke and drink green tea less likely to get lung cancer

than smokers who don't drink green tea? Can oatmeal really help lower cholesterol? What is the cause to make it better? Does Ginkgo Biloba, a unique species of tree with no close living relatives, enhance cognition or prevent Alzheimer's disease? It is dangerous to provide patients and families with information that is based on the judgment or experience of the nurse practitioners without the support of careful analysis of research results.

Systematic Research Results Help to Evolve Clinical Care

Can the clinical result conducted by a single country answer all questions? The answer is "No." Therefore, we need a systematic approach to find out all the related research available in our current database. What are the research results? Are they concurring or contradicting with each other? Clinical nurse practitioners

need to understand this process and apply clinical patient care guide developed by systematic literature reviews so as to offer better professional care to the patients.

The development of evidence-based skills in professional nursing schools has gained popularity since 2003. This idea was first introduced in McMaster University in 1992, advocating that research results should be applied in the training for health professionals (Evidence-Based Medicine Working group, 1992). A decade later, the Institute of Medicine of National Academies proposed five core training suggestions on health professional education, one of which was to promote evidence-based training to all health professionals, including nurses (Greiner and Knebel, 2003). Afterwards, the global promotion of evidence-based nursing has not only made an impact on clinical nursing practice, research and education, but also has become the foundation for elevating nurse practitioners' professional skills.

Basic Data Analysis

By Nursing Grade	Number	%
N	321	31.2
N1	223	21.7
N2	320	31.1
N3	97	9.4
N4	68	6.6
Total	1,029	100.0

By Education	Number	%
High School/ Vocational School	5	0.5
College	508	49.4
University	482	46.8
Master/PhD	34	3.3
Total	1,029	100.0

Clinical Nursing Recognizes the Importance of Evidence-Based Practice

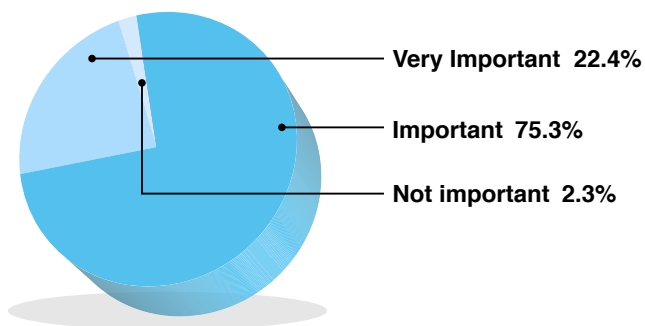
This cover story aims at the front line nurses throughout the six regional Tzu Chi hospitals in Taiwan. It is intended to explore their opinions, capabilities and desire to participate, and available resources for evidence-based nursing. A total of 1,029 nursing staff completed the questionnaire despite their busy schedule. The average age is 31. The majority educational background was from special training school(508, 49%), followed by college graduates(482, 47%). Most of them are in grade N(321, 31.2%), and N2(320, 31.1%). The following is a summary of their opinions on evidence-based nursing:

76% of the nursing staff agreed that evidence-based nursing is “important” to the patient care quality, while 22% said it is “very important.” This means 98% acknowledged the importance of evidence-based nursing. Likewise, about 98% believed that evidence-based nursing is “important” or “very important” to the professional nursing development.

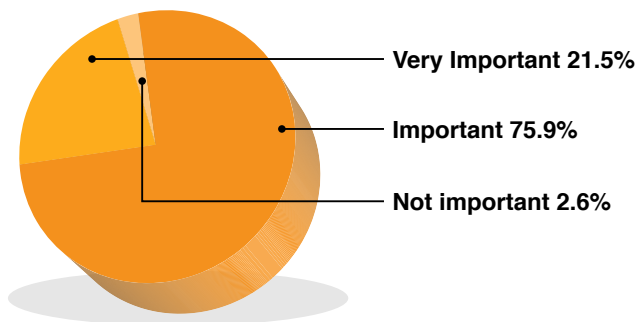
Difficult to Understand but High Desire to Participate

More than half (58%) of the nursing staff said either “were unclear” or “very unclear” about evidence-based nursing. Yet, more than 42% also indicated they

Q1 How important is evidence-based nursing in improving patient care quality? (N=1,029)



Q2 How important is evidence-based nursing to the professional nursing development? (N=1,029)



“were clear” or “very clear.” This shows that evidence-based nursing is gaining widespread acceptance. Even so, 80% of the nursing staff felt evidence-based nursing is “very difficult” or “difficult” and only 19% felt “not difficult.” Therefore, understanding the difficulties and obstacles

that the nurse practitioners are facing as well as helping them overcome the difficulties would become the important task in promoting evidence-based nursing.

There are two components in the category of "Willingness to participate": Participate in related courses and willingness to apply evidence-based nursing. Among the 1,029 respondents,

90% were "willing" or "very willing" to participate in evidence-based nursing courses. 88% were "willing" or "very willing" to apply evidence-based nursing. If the difficulties faced by most of the nursing staff can be resolved, it will be possible to implement evidence-based nursing.

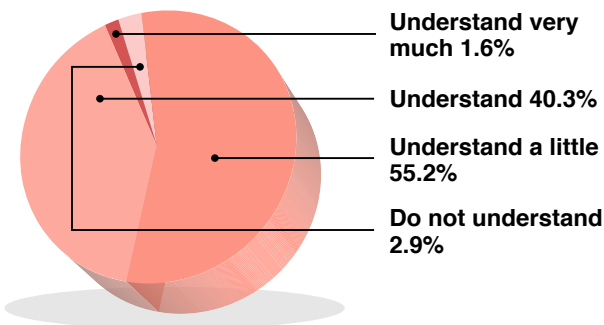
Promoting the Use of More Reference Sources

How often did nurse practitioners consult reference sources at home and abroad regarding clinical issues? 47% "occasionally" did so, and only 8% "often" consulted reference sources for clinical issues. Almost half (45%) "seldom" or "rarely" consulted reference sources for clinical issues. This area needs to be promoted to further develop evidence-based nursing in this country.

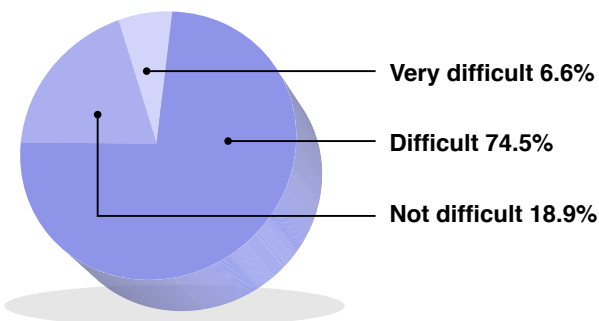
Equally 46% of the respondents felt that useful resources available are either "not much" or "abundant." Since resources can help advance the work of evidence-based nursing, we should find out what resources are "lacking" or "abundant."

Although evidence-based courses are not comprehensively offered in the current curriculum, we discovered from the survey that those with higher education tend to have higher total score and more willingness to participate, implement evidence-based nursing to their practice, and consult reference resources. (Higher score reflects positive attitude towards

Q3 How much do you understand about evidence-based nursing? (N=1,029)



Q4 How difficult you expect in applying evidence based nursing in your clinical nursing work? (N=1,029)





Evidence base is now a trend for medical profession evolves with time. School teachers and senior nurses should cultivate students the ability to think critically and to do up-to-date techniques.

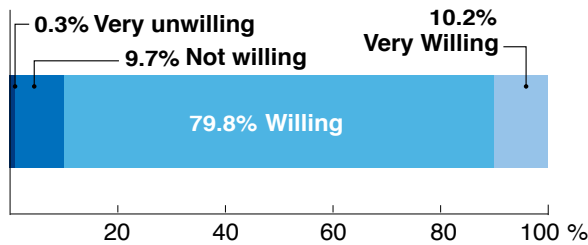
evidence-based nursing) On the importance of evidence-based nursing, those groups with high school and vocational education received the highest scores (high school/vocational school graduates scored 7.2, and those with master/PhD degrees scored 7), while those who graduated from colleges and universities received the lowest scores (6.3 and 6.5 respectively). On the capacity to understand and apply evidence-based nursing, those with master/PhD degrees instead showed the lowest ability. This may be because evidence-based nursing was not clearly promoted in the past, causing the absence of appropriate training opportunities at

the time. The different opinions from the nursing staff with different educational backgrounds yielded statistically significant results ($p < .001$).

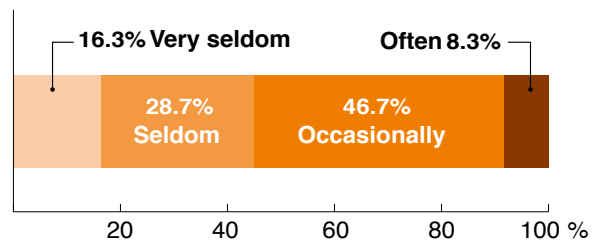
Using Resources and Execution Capabilities

Total scores of N3 and N4 nursing staff were significantly higher than those of N1, N1 and N2. N4 nurses obviously scored the highest. This result can also be observed in the topic of the importance of evidence-based nursing. Interestingly, N1 and N2 nurses obviously understood evidence-based nursing much better than N4. They

Q5 How willing are you to participate in evidence-based nursing courses or seminars? (N=1,029)



Q6 How frequent do you review domestic and international literature about a clinical issue in your nursing work? (N=1,029)



also felt it is less difficult to apply evidence-based nursing. On willingness to apply and participate in evidence-based nursing courses, N, N1, N2 nurses obviously all had higher scores than N4. But N4 nurses apparently scored much higher than N, N1, and N2 when it came to the topic of accessing reference resources. New staff acknowledged evidence-based nursing well with high desire to carry out, while N4 nurses have better skills and resources. We have yet to find out whether this is related to clinical experiences or whether different resources are accessible by different levels of staff. The above different views towards evidence-based nursing by different levels of nursing staff also yielded statistically significant results ($p < .003$).

Overall, all levels of nursing staff agreed on the importance of evidence-based

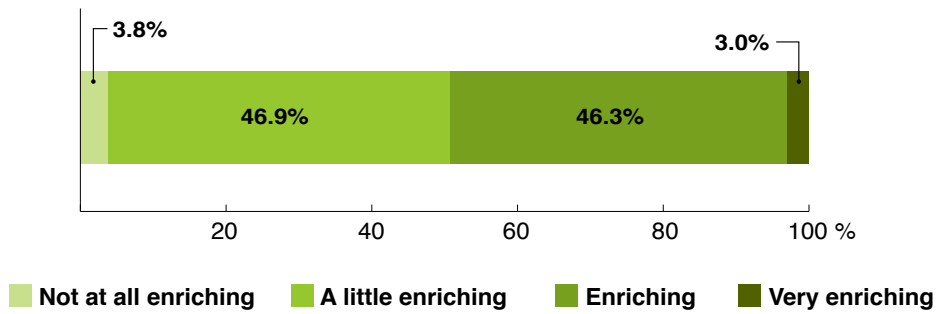
nursing with high desire to participate. We hope that hospitals will continue to support the nursing staff to implement evidence-based nursing, and to allow first-line nurses keep on enhancing the quality of patient care. We hope the readers can gain deeper understanding and join as members of evidence-based nursing to improve service quality and satisfaction.

Reference

Evidence-Based Medicine Working Group, 1992. Evidence-based medicine: A new approach to teaching the practice of medicine. *Journal of the American Medical Association*, 268, 2420-2421

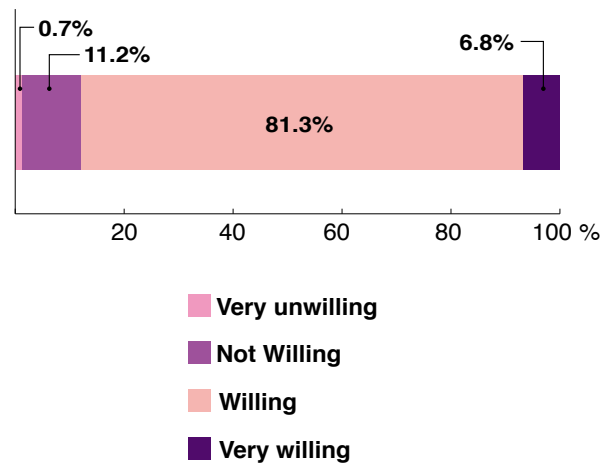
Greiner, A.C., Knebel, E., (Eds.), 2003. Health professions education: A bridge to quality. *The National Academies Press*, Washington, DC.

Q7 How do you rate the richness of resource material, inside and outside the hospital, which can help you understand evidence based nursing? (N=1,029)



The initiative to promote evidence-based nursing is to provide good quality care centered in patients.

Q8 How willing are you to apply evidence based nursing in clinical nursing in the future? (N=1,029)



Development and Resources of Evidence based Nursing in Eastern Taiwan

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Tzu Chi College of Technology joined Tzu Chi Hospital in sharing of international experiences through workshops in Evidence-based nursing. Picture shows lecture conducting by Professor Anne Chang of Queensland Technology University, Australia. Also in the photo are Profs. Hui-Chuan Sung(left), Ling-Ling Lee(2 to right), left, and Nursing Department Director of Hualien Tzu Chi Hospital, Shu-Chuan Chang, right.



Evidence-based health care has attracted international attention and has been widely discussed amongst the medicine and health care communities recently. Medical institutions in Taiwan have actively practiced evidence-based care during the last decade. It started with evidence-based medicine, and widened to evidence-based nursing, evidence-based pharmaceutical practices, and evidence-based physical

therapy, etc. Recently, more and more branches of health care organizations are participating in various forms of evidence-based practices. "Evidence-based everything" is now a modern phrase often heard within the medical world in Taiwan.

Initial Phase Towards Evidence-Based Practices – Familiarity of the Five Steps

Even though evidence-based has been widely discussed in the medical communities, practice of this method in Taiwan is still in its infancy. Learning and training of health care personnel are lacking, and concepts and knowledge of clinical level workers need to be developed. Just a few years ago, when nursing students were asked for the definition of evidence-based nursing, one would find different answers based on misconceptions. Such as: "Conducting research", or "PICO (Patient, Intervention, Comparison and Outcome) related topics", or "Internet data search", or, "something to do with 1A, 1B", etc.

Thanks to the promotions from medical societies and institutions, as well as seminars sponsored by the healthcare and nursing organizations, the concept of evidence-based care in Taiwan is evolving. Nowadays, many nursing professionals can correctly define evidence-based nursing as: "nursing care with the best available evidence, as well as clinical experience and patient's value and quality of life."

Many in the profession can even pinpoint the five essential steps of evidence-based nursing: (1) raise answerable clinical questions, or constructing PICO questions; (2) systematically search of best research evidence; (3) analyze research evidence in the literature; (4) make scientific decisions based on best evidence; and (5) conduct evidence-based care and perform evaluation. Occasionally, one would hear in the clinical units or classrooms that one questioning another by saying: "Have you done PICO?" This clearly indicates that evidence-based nursing is taking root among the medical professionals in Taiwan.

Internationally Certified Evidence-Based Center in Eastern Taiwan

To further promote evidence-based nursing locally, it is necessary that the knowledge and technical skills of the professionals be enhanced. To accomplish this goal, Tzu Chi Institute of Technology has cooperated with the international known Joanna Briggs Institute (JBI) of Australia in order to share knowledge and exchange research ideas. JBI has the facilities and resources to provide Tzu Chi faculty and students the necessary training and certification in the field of evidence-based care. In the year of 2007, 11 teachers from our nursing and physical therapy departments received training in JBI headquarters in the University of



In the spirit of evidence-based care, students are trained to think and criticize in classes. Photo depicts a teacher tutoring a student nurse.

Adelaide, South Australia Center. They were trained in the area of systematic literature review and were internationally certified as literature evaluator. In 2008, Tzu Chi University became a partner with the JBI ESG evidence collection team. In 2009, the “Taiwanese Center of Evidence-Based Health Care Center”, an Affiliate Center of JBI, was formally established.

The mission of this center is to provide evidence-based healthcare education and to promote practice of evidence-based care in the fields of nursing and physical therapy. In addition, the center is also devoted to the discovery and analysis of evidence-based literature. To this end, Tzu Chi Professor Ling-Ling Lee started to offer courses in systematic literature review and development of practical evidence-based care. In these classes, students will learn the fundamentals of evidence-based health care and clinical application of the

science. Students will also master skill in foreign language literature search, familiar with the five steps in practicing evidence-based nursing. The nursing department is also introducing the problem-based method of teaching and merging the concepts of evidence-based care into mainstream nursing courses. The core members of our center are all experts in their specialized fields and dedicated in the new field of evidence-based care research. A more detailed description of our center is provided on our website(<http://na.tcc.edu.tw/ezcatfiles/na/img/635/index.html>).

Development of Care Guidelines and Promotion of Clinical Evidence

The Taiwanese Center for Evidence-Based Health Care has participated in The Department of Health’s “Evidence-Based Nursing Work Model and Promotion through Continuing Education Program” since 2009. Now, teaming with Professor Pei-Fan Mu of the Yang Ming University and Yu-Chih Chen, Director of Nursing Department of the Veterans General Hospital, the center serves as the representative in the development of nursing care guidelines and the core training programs in evidence-based nursing for Eastern Taiwan. Currently, many of the hospital administrators and managers in Eastern Taiwan are participating in the core training program. The core team

consists of representatives from Tzu Chi Hospital, Mennonite Christian Hospital, Hualien Armed Forces General Hospital and Hualien Hospital of Health Dept. Once the members of the core team have finished their training, they will become the seeds of the new technology in their respective organization. Our Center has already developed five evidence-based nursing guidelines and continues working on other areas. The draft guidelines currently in existence are: (1) Nursing Guidelines for Prevention and Treatment of Incontinence Dermatitis; (2) Guidelines for Education and Guidance of Senior Exercises; (3) Clinical Guidelines for Evaluation and Screening of Geriatric Depression; (4) Community Guidelines for Evaluation and Screening of Suicidal Geriatric Depression. These guidelines will become valuable resources

for nursing professionals' clinical decisions in Taiwan.

It is important for clinical nursing professionals to broaden their knowledge and master their skills from practical application of research results in order to follow the trend of evidence-based care. By analyzing and understanding international literature on evidence-based nursing, nursing professionals will learn to raise the right questions and make the most suitable decisions for patients. The future of the evidence-based care in Taiwan is very optimistic, and the medical communities are teaming together to promote this new technology. It is our anticipation that in the very near future, conversations like "Have you done PICO?" or "Have you explore evidence?" become common phrases between the nursing personnel.



Concentrating in the lecture by international experts help nursing professionals to develop clinical experience.