

## REVIEW ΑΝΑΣΚΟΠΗΣΗ

# Attitudes, knowledge and perceptions of psychiatric nurses about evidence-based practice

Despite growing interest in evidence-based practice (EBP) its implementation in clinical practice has been proved to be a cumbersome process. This is a literature review of the attitudes and knowledge of psychiatric nurses about EBP development. A systematic, comprehensive, bibliographic search was made using terms chosen from the USNLM Institutes of Health list of Medical Subject Headings (MeSH) and free text key terms. Articles were selected based on specific inclusion criteria in terms of titles or abstracts. The search identified 92 potentially relevant papers, of which 6 were included after appraisal by two independent reviewers. The results, which were extracted and synthesized into a narrative text, indicated that although psychiatric nurses are now more aware of and open to the idea of EBP and understand the importance of its implementation in daily practice, their relevant skills remain moderate to low. In general, nurses consider patients and personal experience as their main source of knowledge. Only slightly more than one third considers themselves capable of reviewing, critically appraising and implementing research evidence to change practices. This review confirmed that nurse-patient interaction constitutes an important source of practice knowledge in the psychiatric health care setting. There is a need for further research investigating EBP implementation among psychiatric nurses, which should focus on the predictors of EBP and effective strategies for teaching EBP and enhancing its implementation in psychiatric nursing practice.

ARCHIVES OF HELLENIC MEDICINE 2017, 34(5):636–642  
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2017, 34(5):636–642

A.E. Patelarou,<sup>1</sup>  
K. Katsouli,<sup>2</sup>  
A. Stamou,<sup>2</sup>  
V. Vivilaki,<sup>3</sup>  
E. Koukia,<sup>4</sup>  
D. Sifaki-Pistolla,<sup>5</sup>  
E. Patelarou<sup>6</sup>

<sup>1</sup>Department of Anesthesiology,  
University Hospital of Heraklion,  
Heraklion, Crete, Greece

<sup>2</sup>Society of Junior Doctors, Athens,  
Greece

<sup>3</sup>Department of Midwifery,  
Technological Educational Institute of  
Athens, Athens, Greece

<sup>4</sup>Department of Nursing, National and  
Kapodistrian University of Athens,  
Athens, Greece

<sup>5</sup>Clinic of Social and Family Medicine,  
School of Medicine, University of Crete,  
Greece

<sup>6</sup>Florence Nightingale Faculty of Nursing  
and Midwifery, London, United Kingdom

Στάσεις, γνώσεις και απόψεις  
των νοσηλευτών ψυχικής υγείας  
ως προς την εφαρμογή  
της τεκμηριωμένης πρακτικής

Περίληψη στο τέλος του άρθρου

### Key words

Evidence-based practice  
Implementation  
Mental health  
Nurses  
Psychiatric nursing

Submitted 20.11.2016  
Accepted 2.12.2016

## 1. INTRODUCTION

There is strong evidence that the outcome of patients and the performance of personnel and health care organizations are improved through evidence-based clinical practice. In particular, the integration of the best nursing practices into daily health care enhances the health related

outcomes of patients and improves quality of care<sup>1,2</sup> and cost-effectiveness.<sup>3</sup> In nursing, however, there is a strong relationship between tradition and clinical practice,<sup>4</sup> as a result of which nursing interventions are often based on traditional practices, nurses' own experience or the preferences of the health care providers rather than current evidence.<sup>5–7</sup> Researchers have demonstrated a significant

delay between the availability of research conclusions and their implementation into clinical nursing practice, ranging from 8 to 30 years.<sup>8</sup>

During the past two decades, a major goal of public health in developed countries is the implementation of evidence based practice (EBP),<sup>9</sup> defined as a “process that blends current best evidence, community values and preferences, and agency, societal, and political considerations in order to establish programs and policies that are effective and contextualized”.<sup>10</sup> A large number of EBP educational and mentorship programs have been introduced with the aim of raising awareness and engaging nursing staff in the concept of EBP.<sup>11–14</sup> Research has focused on the attitudinal and organizational barriers that influence EBP adoption by nurses. These include insufficient skill to find and evaluate research findings, lack of time and inadequate organizational and leadership support.<sup>15</sup>

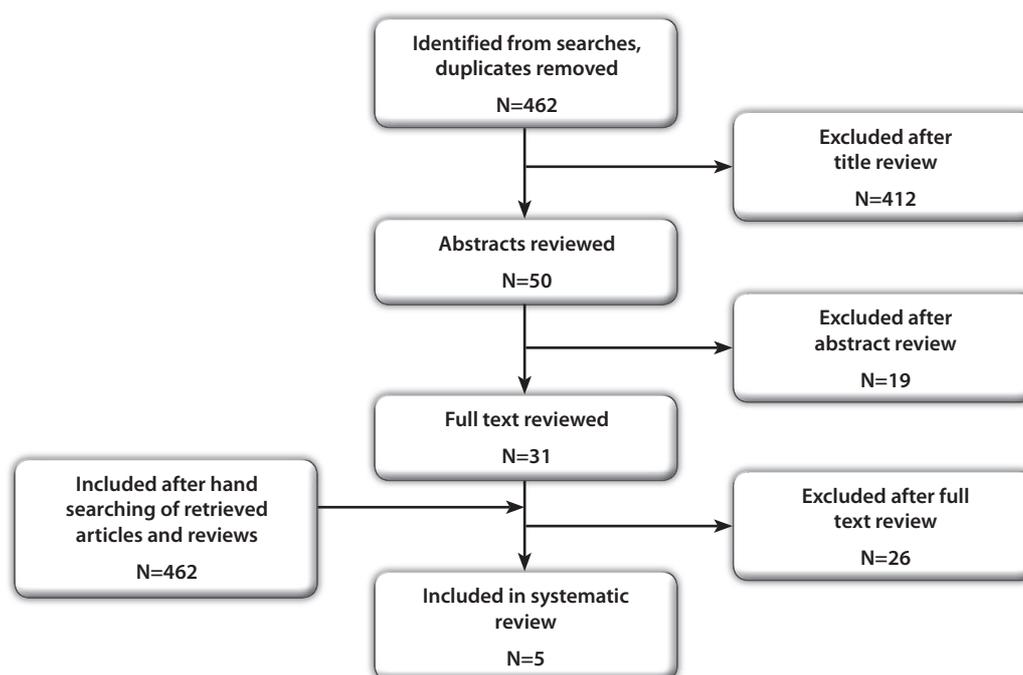
Nurses play a key caring role in the mental health sector, due to their great amount of direct patient contact.<sup>16,17</sup> Although the situation concerning studies on EBP has improved for general nurses, there is a lack of relevant research on psychiatric nurses. One study on trained mental health nurses who completed a questionnaire to assess their attitudes and needs concerning the use of research findings in practice showed that the majority of participating nurses had “a very positive attitude towards research”, but few of them implemented research findings to improve clinical practice.<sup>18</sup> In view of the changing pattern of health care needs, adoption of EBP in the coordinated provision of health care is essential for psychiatric nurses. This requires the direct comprehensive translation and integration of evidence into clinical practice. The paucity of studies on the attitudes and behavior of psychiatric nurses concerning research is a neglected issue that needs to be addressed in order to minimize barriers and encourage the utilization of evidence in nursing practice. The aim of this systematic review of the literature was to bring together the current body of knowledge on the attitudes, perceptions and knowledge of psychiatric nurses towards implementation of EBP.

The following review question was posed: “What are the attitudes, the knowledge and the perceptions of psychiatric nurses towards EBP implementation?”. A review protocol was developed following standards outlined in the MOOSE (Meta-analysis of Observational Studies in Epidemiology) guidelines for meta-analyses and systematic reviews of observational studies.<sup>19</sup> A systematic, comprehensive bibliographic search was conducted using two databases, the Medline (national library of medicine) and the EMBASE, for the period January 2000–March 2016. Search terms used

were identified from the USNLM Institutes of Health list of Medical Subject Headings (MeSH), and with free text key terms. The search algorithm was: (“Psychiatric nursing OR nurses OR nursing staff OR nursing staff, hospital”) AND (“knowledge OR attitude OR perception”) AND (“evidence based nursing OR nursing, evidence-based OR nursing, evidence based”). Bibliographies of each retrieved study and review were also checked by hand for additional studies that met the broad eligibility criteria.

The retrieved studies were evaluated for inclusion by two independent reviewers for their relevance to the aim and objectives of this review. Study selection was accomplished through three levels of study screening. At level 1 screening, studies were excluded by reviewing the title of the article. At level 2 screening, the abstracts of all studies accepted at level 1 were reviewed for relevance. For level 3 screening, the full text was obtained for selected papers and for citations on which a decision could not be made from the abstract. Where there were uncertainties, discussion was held with the research team to reach consensus. Relevant studies were checked according to a list of eligibility criteria. Specifically, quantitative research studies which investigated the attitude or the perceptions or the knowledge of psychiatric nurses towards EBP implementation were included. Studies not published in English, review studies, meta-analyses, pilot studies, case studies, case reports and qualitative research studies were excluded. Studies which investigated attitudes towards research utilization or barriers to research utilization in general were also excluded. Information on the study design, methods and outcomes were recorded using a previously piloted data extraction form.

The combined MEDLINE and EMBASE search produced 462 records. The initial screening of manuscript titles and abstracts excluded 421 records and a further 23 articles were excluded after examination of the full text. Figure 1 shows the numbers of studies identified and selected/excluded at each phase of the search. Ultimately, 5 studies, all conducted between 2000 and 2012, were found that fulfilled the research criteria. Their characteristics are summarized in table 1. All 5 articles reported cross-sectional studies that used questionnaires –existing or developed for the purpose of the study– for data collection purposes. The specific aims of the studies varied, but included the beliefs, knowledge and skills of the participating nurses concerning EBP, EBP implementation, sources of knowledge regarding EBP, barriers to and facilitators of EBP implementation, and dissemination/awareness of literature on EBP. Because of the limited number of the eligible studies a narrative



**Figure 1.** Algorithm of literature search for articles on evidence based practice in psychiatric nursing meeting the study criteria.

synthesis of their findings was not feasible, and instead a short presentation of each study was made.

The first study, carried out study in 1999, aimed to investigate the dissemination and awareness of evidence-based literature and recently published EBP reports among nurses.<sup>20</sup> The questionnaires were sent by post to 2,294 psychiatric nurses, once in September 1999 (first distribution) and again in November 2000 (second distribution). The first distribution yielded an 82% response rate and the second 72%, with 67% responding to both distributions. The awareness of the concept of evidence-based nursing of the respondents was 52% in the first and 83% in the second distribution, an increase of 31%. In the first distribution, 29% reported being aware of EBP literature, and in the second distribution 59%, an increase of 30%.

A few years later, a study was conducted out in Sweden among 987 registered nurses, 101 of whom worked in psychiatric care.<sup>21</sup> The responses of the psychiatric nurses to the study questionnaire were as follow: 22% formulated questions to search for research based knowledge, 23% sought out relevant knowledge using data bases, 55% sought out other information sources, 35% critically appraised and compiled best knowledge, 47% participated in implementing research knowledge in practice, and 43% participated in evaluating practice based on research knowledge. A study in Finland among 180 psychiatric

nurses aimed to describe the skills of nurses in literature search of databases and use of the internet.<sup>22</sup> The level of skill of the nurses was described in six categories: (0) no skills, (1) novice, (2) advanced, (3) skillful, (4) proficient, and (5) expert. According to their responses, 33% had no skills, 32% were novices and 11% expert when assessing internet skills; 84% had no skills, 10% were novices, 6% advanced, 1% proficient and 0% expert when assessing database skills.

A 2009 study investigated the sources of knowledge and evidence for practice employed by nurses registered in the active psychiatric division of the register of nurses in Ireland.<sup>23</sup> The survey was conducted by postal administration of the Development of Evidence-Based Practice Questionnaire (EBPQ) to a sample of 750 psychiatric nurses.<sup>24</sup> Regarding their sources of knowledge, the most frequently reported was "learning from each patient as an individual as their primary source" (88.3%), with personal experience as the second most frequent source (85.5%), while 34.5% reported frequent use of nursing journals. The same study elicited barriers, facilitators and skills for developing EBP.<sup>25</sup> Approximately 41.4% of the respondents rated themselves as complete beginners in reviewing research evidence, 42.1% rated themselves as complete beginners in using research evidence to change practice, while 30.3% rated themselves as competent or expert in reviewing research evidence and using research evidence to change practice.<sup>25</sup>

**Table 1.** Review of studies on evidence based practice in psychiatric nursing.

Authors' year	Study characteristics	Aim of the study	Data collection method	Main findings
Bahtsevani et al, <sup>20</sup> 2005	Sweden, 1999 Cross-sectional study 2,294 psychiatric nurses	To investigate dissemination and awareness of evidence-based literature and recently published EBP reports among psychiatric nurses	<i>Study questionnaire:</i> Self-completed. 23 "closed-ended response" questions. "Yes", "No", "Don't recall" answers	<i>Response rate:</i> 82% 1st distribution, 72% 2nd distribution, 67% 1st and 2nd distribution <i>Awareness of concept of EBP:</i> 52% 1st distribution, 83% 2nd distribution (31% increase) <i>Awareness of literature of EBP:</i> 29% 1st distribution, 59% 2nd distribution (30% increase) <i>Access to literature:</i> 12% 1st distribution, 39% 2nd distribution; 40% reported no access at 2nd distribution
Boström et al, <sup>21</sup> 2009	Sweden, 2007 Cross-sectional study 987 registered nurses 101 psychiatric nurses	To examine the application of EBP by registered nurses two years post-graduation and whether its application differed with regard to the clinical setting	<i>LANE questionnaire:</i>  (1) Formulate questions to search for research based knowledge (2) Seek out relevant knowledge using data bases (3) Seek out relevant knowledge using other information sources (4) Critically appraise and compile best knowledge (5) Participate in implementing research knowledge in practice (6) Participate in evaluating practice based on research knowledge	<i>Total response rate:</i> 76% <i>Psychiatric nurses' responses:</i> 22% formulate questions to search for research based knowledge 23% seek out relevant knowledge using data bases 55% seek out other information sources 35% critically appraise and compile best knowledge 47% participate in implementing research knowledge in practice 43% participate in evaluating practice based on research knowledge
Koivunen et al, <sup>22</sup> 2010	Finland, 2004 Cross-sectional study 183 psychiatric nurses	To describe nurses' skills in literature searches of databases and the internet and differences according to gender, age and job position	<i>Study questionnaire</i> with two point response scales (yes/no) Nurses were categorized into five groups: (0) no skills, (1) novice, (2) advanced, (3) skillful, (4) proficient, (5) expert	<i>Total response rate:</i> 98% <i>Internet skills:</i> 33% no skills, 32% novice, 9% advanced, 8% skillful, 7% proficient, 11% expert <i>Database skills:</i> 84% no skills, 10% novice, 6% advanced, 0% skillful, 1% proficient, 0% expert
Yadav et al, <sup>23</sup> 2012	Ireland, 2009 Cross-sectional survey 145 psychiatric nurses	To investigate the sources of knowledge or evidence for EBP as reported by Irish psychiatric nurses	<i>Evidence-Based Practice Questionnaire (EBPQ):</i> 49 items in five main sections, measured on a 5-point scale (1) sources of knowledge (2) barriers related to access to knowledge (3) barriers to changing practice (4) facilitators for EBP (5) self-rating of skills in finding, reviewing and using evidence to change their practice	<i>Response rate:</i> 21.6% <i>Sources of knowledge:</i> 88.3% (mean overall score 4.44) rated learning from each patient as an individual the most frequent source 85.5% rated personal experience as the second most frequent source 34.5% reported frequent use of nursing journals <i>Greatest barrier reported:</i> "I do not have sufficient time to find research reports" "Research reports are not easy to find" "I don't know how to find appropriate research reports"
Yadav et al, <sup>25</sup> 2012	Ireland, 2009 Cross-sectional study 145 psychiatric nurses	To examine barriers, facilitators and skills for developing EBP, as reported by Irish psychiatric nurses	<i>EBPQ:</i>	<i>Response rate:</i> 21.3% 41.4% rated themselves as complete beginners in reviewing research evidence 42.1% rated themselves as complete beginners in using research evidence to change practice 30.3% rated themselves as competent or expert in reviewing research evidence and using research evidence to change practice

## 2. MAIN POINTS OF THE REVIEW

EBP should be the cornerstone of professional nursing practice. Patients and their families are involved in their own care more than ever before. Psychiatric nurses must be able to demonstrate their skills, and developing professionally should be one of their main targets. Professional development must be implemented into practice for change to be identified. This review aimed to provide an insight into the attitudes, knowledge and implementation of EBP in practice among psychiatric nurses, but definitive conclusions could not be made due to the scarce evidence. On the basis of the five studies identified, the awareness level of psychiatric nurses of EBP as a concept, and of EBP literature was high. More than one third of the nurses considered themselves to be capable of reviewing, critically appraising and implementing research evidence to change nursing practice. In general, however, the nurses reported moderate to low ability in performing a literature search, while they considered patients and personal experience as their main source of knowledge.

The dependence of psychiatric nurses on experiential sources of information for updating their practice may be due to lack, unavailability or low accessibility of best evidence, lack of knowledge or skills in identifying, reviewing and implementing the evidence, and lack of time and resources for translating the evidence into action.<sup>26,27</sup> Methodological challenges and barriers to performing randomized control trials to validate nurse-led interventions may also affect the scarcity of psychiatric nursing studies.<sup>28,29</sup> This review showed that the content of nurse-patient interactions is regarded as a core source of practice knowledge. During daily practice, psychiatric nurses gather a vast amount of information from each patient regarding the purpose of care planning, including assessment and patient observation. Such individual patient-derived information, including data on their views and preferences could be used in combination with the exercise of current best practices, through a patient-centered approach. Nursing practice based on a combination of sources is consistent with contemporary definitions of EBP, and is considered to be effective. Sources of information such as personal experience and trials are embedded in nursing practice, and they constitute a prominent basis for practice evidence.<sup>30,31</sup> The most challenging aspect of EBP is for nurses to realize that these sources of information are not the sole evidence for psychiatric nursing practice.

The review findings highlighted the fact that although psychiatric nurses may be aware of current research and evidence, there is still a significant gap between theory

and practice. There is a need to expand the professional development of psychiatric nurses and to enhance their role in nurse-client encounters, thus delivering EBP in their daily routine. In addition, the development of nurses' skills in identifying and critically appraising the evidence of effectiveness should be a high priority for practice coordinators and facilitators.

Policy makers, universities and health care organisations are charged with the responsibility of ensuring that the health care workforce is equipped with the prerequisite knowledge and capabilities for integrating new evidence into clinical practice. Engaging students in the application of evidence in professional practice is a critical role of all universities. The effective engagement of undergraduate nursing students in knowledge translation and utilisation activities will have immediate and long-term benefits for nursing as a profession and for the provision of high quality personalized care. Preparation of future psychiatric nurses to be engaged in EBP is essential to the provision of cost-effective, safe and highest quality care, leading to an increase in best outcomes for patients. University graduates should be expected to be users of research documentation, and to be able to understand research procedures, identify clinical problems in need of research, collaborate in research teams and apply evidence-based research in clinical practice.<sup>32,33</sup> Psychiatric nurses are more likely to source research and other published evidence if they develop the skills and disposition for identifying and using research evidence in their formative preparatory training. The use of journal clubs with complementary clinical seminars during training has been shown to be effective in enabling students to comprehend the value of objective information rather than anecdote, and to take responsibility for their own continuing learning.<sup>34</sup> The use of journal clubs and clinical meetings as part of everyday clinical practice could enhance and maintain the skills of registered nurses in developing EBP.

Future studies should identify effective strategies for teaching health students and future health professionals about EBP and should examine the extent to which attitudes towards adopting EBP predict provider behavior, including seeking further education and training in EBP, subsequent use of EBP and sustained use of EBP in practice. It will also be important to examine factors that might moderate the relationship between attitudes and behavior.<sup>35</sup> Health care providers, for example, may gain knowledge and skill in training but a lack of confidence or self-efficacy may have an impact on their actual use of EBP with clients or patients. Future research should address these concerns in an effort to tailor practice change to the attitudes and

preferences of psychiatric health service providers. Study of attitudes towards the implementation of EBP should contribute to the knowledge base on how to move EBP into the real-world human service setting more effectively and efficiently, with a resultant improvement in the quality of care and patient outcomes.

### 3. CONCLUSIONS

This review indicates that although psychiatric nurses

are now more aware of and open to the concept of EBP and the importance of its implementation in daily practice, their relevant skills, including performing literature searches and critically appraising the evidence, remain moderate to low. In addition, this review confirmed that nurse-patient interactions constitute an important source of practice knowledge in health care settings. Future research should focus on the predictors of use of EBP and effective strategies for teaching EBP and enhancing its implementation in psychiatric nursing practice.

## ΠΕΡΙΛΗΨΗ

### Στάσεις, γνώσεις και απόψεις των νοσηλευτών ψυχικής υγείας ως προς την εφαρμογή της τεκμηριωμένης πρακτικής

A.E. ΠΑΤΕΛΑΡΟΥ,<sup>1</sup> Κ. ΚΑΤΣΟΥΛΗ,<sup>2</sup> Α. ΣΤΑΜΟΥ,<sup>2</sup> Β. ΒΙΒΙΛΑΚΗ,<sup>3</sup> Ε. ΚΟΥΚΙΑ,<sup>4</sup>  
Δ. ΣΗΦΑΚΗ-ΠΙΣΤΟΛΛΑ,<sup>5</sup> Ε. ΠΑΤΕΛΑΡΟΥ<sup>6</sup>

<sup>1</sup>Αναισθησιολογικό Τμήμα, Πανεπιστημιακό Γενικό Νοσοκομείο Ηρακλείου, Ηράκλειο, Κρήτη, <sup>2</sup>Σύλλογος Νέων Ιατρών, Αθήνα, <sup>3</sup>Τμήμα Μαιευτικής, Τεχνολογικό Εκπαιδευτικό Ίδρυμα Αθήνας, Αθήνα, <sup>4</sup>Τμήμα Νοσηλευτικής, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών, Αθήνα, <sup>5</sup>Τομέας Κοινωνικής και Οικογενειακής Ιατρικής, Τμήμα Ιατρικής, Πανεπιστήμιο Κρήτης, Ηράκλειο, Κρήτη, <sup>6</sup>Florence Nightingale Faculty of Nursing and Midwifery, London, Ηνωμένο Βασίλειο

*Αρχεία Ελληνικής Ιατρικής 2017, 34(5):636–642*

Παρά το ολοένα αυξανόμενο ενδιαφέρον για την τεκμηριωμένη κλινική πρακτική (ΤΚΠ) η εφαρμογή της στην κλινική πράξη έχει αποδειχθεί ότι αποτελεί δύσκολη διαδικασία. Η παρούσα ανασκόπηση είχε ως στόχο τη συστηματική μελέτη της υπάρχουσας βιβλιογραφίας σχετικά με τις στάσεις και τη γνώση των νοσηλευτών που εργάζονται σε ψυχιατρικές δομές υγείας όσον αφορά στην ανάπτυξη της ΤΚΠ. Διενεργήθηκε μια συστηματική και διεξοδική αναζήτηση της βιβλιογραφίας. Επιλέχθηκαν λέξεις ευρετηρίου MeSH από τη λίστα του USNLM Institutes of Health καθώς και λέξεις-κλειδιά ελεύθερου κειμένου. Τα τελικά άρθρα επιλέχθηκαν αρχικά με βάση τους τίτλους και την περίληψη των άρθρων και ακολούθως εφαρμόζοντας τα κριτήρια εισαγωγής των μελετών στην ανασκόπηση. Από την αναζήτηση προέκυψαν 92 δυνητικά σχετικά άρθρα, από τα οποία 6, τελικά, συμπεριλήφθηκαν στην αναζήτηση έπειτα από κριτική αποτίμηση που έγινε από δύο ανεξάρτητους κριτές. Τα αποτελέσματα των μελετών ενοποιήθηκαν και παρουσιάστηκαν σε μορφή κειμένου. Τα αποτελέσματα έδειξαν ότι παρ'ότι οι ψυχιατρικοί νοσηλευτές είναι πλέον περισσότερο ενήμεροι και δεκτικοί όσον αφορά στην ιδέα της ΤΚΠ και στη σπουδαιότητα της εφαρμογής της στην καθημερινή κλινική πρακτική, οι δεξιότητές τους σχετικά με την ΤΚΠ –περιλαμβανομένης της πραγματοποίησης αναζήτησης και κριτικής αποτίμησης της βιβλιογραφίας– παραμένουν μετρίου έως χαμηλού επιπέδου. Σε γενικές γραμμές, οι νοσηλευτές θεωρούν την κλινική και την προσωπική τους εμπειρία ως την κύρια πηγή γνώσης και περισσότερο από το 1/3 αυτών θεωρούσαν τους εαυτούς τους ικανούς να διεξάγουν ανασκόπηση, κριτική αποτίμηση και εφαρμογή των ερευνητικών δεδομένων για την αλλαγή της κλινικής πρακτικής. Επιπρόσθετα, η παρούσα ανασκόπηση επιβεβαίωσε ότι οι αλληλεπιδράσεις νοσηλευτή-ασθενούς αποτελούν μια σημαντική πηγή γνώσης για την κλινική πράξη στις ψυχιατρικές νοσηλευτικές δομές. Τα αποτελέσματα της παρούσας μελέτης αποκαλύπτουν την αναγκαιότητα για μελλοντική έρευνα στη διερεύνηση της υιοθέτησης της ΤΚΠ από ψυχιατρικούς νοσηλευτές. Η μελλοντική έρευνα πρέπει να εστιάσει στους προβλεπτικούς παράγοντες της ΤΚΠ και στις αποτελεσματικές στρατηγικές διδασκαλίας και ενίσχυσης της εφαρμογής της στην ψυχιατρική κλινική νοσηλευτική πρακτική.

**Λέξεις ευρετηρίου:** Εφαρμογή, Νοσηλευτές, Τεκμηριωμένη πρακτική, Ψυχιατρική νοσηλευτική, Ψυχική υγεία

## References

- MELNYK BM, FINEOUT-OVERHOLT E, GALLAGHER-FORD L, STILLWELL SB. Evidence-based practice, step by step: Sustaining evidence-based practice through organizational policies and an innovative model. *Am J Nurs* 2011, 111:57–60
- MELNYK BM. Building a case for evidence-based practice: Inhalers vs nebulizers. *Pediatr Nurs* 1999, 25:102–103
- WINCH S, CREEDY D, CHABOYER AW. Governing nursing conduct: The rise of evidence-based practice. *Nurs Inq* 2002, 9:156–161
- WILSON H. Evidence-based practice in psychiatric-mental health nursing. In: Kneisl CR, Wilson HS, Trigoboff E (eds) *Contemporary psychiatric-mental health nursing*. Prentice Hall, Englewood Cliffs, NJ, 2004
- PRAVIKOFF DS, TANNER AB, PIERCE ST. Readiness of US nurses for evidence-based practice. *Am J Nurs* 2005, 105:40–51
- McKNIGHT M. The information seeking of on-duty critical care nurses: Evidence from participant observation and in-context interviews. *J Med Libr Assoc* 2006, 94:145–151
- ROLFE G, SEGROTT J, JORDAN S. Tensions and contradictions in nurses' perspectives of evidence-based practice. *J Nurs Manag* 2008, 16:440–451
- HUTCHINSON AM, JOHNSTON L. Beyond the BARRIERS Scale: Commonly reported barriers to research use. *J Nurs Adm* 2006, 36:189–199
- NUTLEY S, DAVIES H, WALTER I. Promoting evidence-based practice: Models and mechanisms from cross-sector review. *Res Social Work Prac* 2009, 19:552–559
- REGEHR C, STERN S, SHLONSKY A. Operationalizing evidence-based practice: The development of an institute for evidence-based social work. *Res Social Work Prac* 2007, 17:408–416
- CULLEN L, TITLER MG, REMPEL G. An advanced educational program promoting evidence-based practice. *West J Nurs Res* 2011, 33:345–364
- WALLEN GR, MITCHELL SA, MELNYK B, FINEOUT-OVERHOLT E, MILLER-DAVIS C, YATES J ET AL. Implementing evidence-based practice: Effectiveness of a structured multifaceted mentorship programme. *J Adv Nurs* 2010, 66:2761–2771
- STROUT TD, LANCASTER K, SCHULTZ AA. Development and implementation of an inductive model for evidence-based practice: A grassroots approach for building evidence-based practice capacity in staff nurses. *Nurs Clin North Am* 2009, 44:93–102
- SELIG PM, LEWANOWICZ W. Translation to practice: Developing an evidence-based practice nurse internship program. *AACN Adv Crit Care* 2008, 19:325–332
- PATELAROU AE, DAFERMOS V, BROKALAKI H, MELAS CD, KOUKIA E. The evidence-based practice readiness survey: A structural equation modeling approach for a Greek sample. *Int J Evid Based Healthc* 2015, 13:77–86
- HURST K, HOWARD D. Measure for measure. *Nurs Times* 1988, 84:30–32
- LIUKKONEN A. The nurse's decision-making process and the implementation of psychogeriatric nursing in a mental hospital. *J Adv Nurs* 1992, 17:356–361
- VEERAMAH V. A study to identify the attitudes and needs of qualified staff concerning the use of research findings in clinical practice within mental health care settings. *J Adv Nurs* 1995, 22:855–861
- STROUP DF, BERLIN JA, MORTON SC, OLKIN I, WILLIAMSON GD, RENNIE D ET AL. Meta-analysis of observational studies in epidemiology: A proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. *JAMA* 2000, 283:2008–2012
- BAHTSEVANI C, KHALAF A, WILLMAN A. Evaluating psychiatric nurses' awareness of evidence-based nursing publications. *Worldviews Evid Based Nurs* 2005, 2:196–206
- BOSTRÖM AM, KAJERMO KN, NORDSTRÖM G, WALLIN L. Registered nurses' use of research findings in the care of older people. *J Clin Nurs* 2009, 18:1430–1441
- KOIVUNEN M, VÄLIMÄKI M, HÄTÖNEN H. Nurses' information retrieval skills in psychiatric hospitals – are the requirements for evidence-based practice fulfilled? *Nurse Educ Pract* 2010, 10:27–31
- YADAV BL, FEALY GM. Irish psychiatric nurses' self-reported sources of knowledge for practice. *J Psychiatr Ment Health Nurs* 2012, 19:40–46
- GERRISH K, ASHWORTH P, LACEY A, BAILEY J, COOKE J, KENDALL S ET AL. Factors influencing the development of evidence-based practice: A research tool. *J Adv Nurs* 2007, 57:328–338
- YADAV BL, FEALY GM. Irish psychiatric nurses' self-reported barriers, facilitators and skills for developing evidence-based practice. *J Psychiatr Ment Health Nurs* 2012, 19:116–122
- HEALTH SERVICE EXECUTIVE. Evidence-based practice: An evaluation of nurses' use of research based evidence in their decision making. HSE, Dublin, 2007
- FEALY G. Research utilisation. In: Treacy MP, Hyde A (eds) *Nursing research: Design and practice*. University College Dublin Press, Dublin, 2007
- FEALY G, McCARRON M, O'NEILL D, McCALLION P, CLARKE M, SMALL V ET AL. Effectiveness of gerontologically informed nursing assessment and referral interventions for older persons attending the emergency department: Systematic review. *J Adv Nurs* 2009, 65:934–935
- PARAHO O, BARR O, McCAUGHAN E. Research utilization and attitudes towards research among learning disability nurses in Northern Ireland. *J Adv Nurs* 2000, 31:607–613
- BERRAGAN L. Nursing practice draws upon several different ways of knowing. *J Clin Nurs* 1998, 7:209–217
- ZAUSZNIIEWSKI JA, SURESKY J. Evidence for psychiatric nursing practice: An analysis of three years of published research. *Online J Issues Nurs* 2004, 9:13
- AMERICAN ASSOCIATION OF COLLEGES OF NURSING. AACN position statement on nursing research. AACN, Washington, DC, 2008
- AMERICAN ASSOCIATION OF COLLEGES OF NURSING. Nursing: Scope and standards of practice. AACN, Washington, DC, 2010
- OWEN S, WHEWAY J, ANDERSON M. The use of a journal club and clinical seminars on a 4-year undergraduate, pre-registration mental-health nursing degree. *Nurse Educ Today* 2001, 21:297–303
- AARONS GA. Measuring provider attitudes toward evidence-based practice: Consideration of organizational context and individual differences. *Child Adolesc Psychiatr Clin North Am* 2005, 14:255–271

### Corresponding author:

A.E. Patelarou, Department of Anesthesiology, University Hospital of Heraklion, 51 Eleftheriou Venizelou street, Agia Marina-Tsalikaki, GR-714 14 Heraklion, Crete, Greece  
e-mail: athina.patelarou@gmail.com