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Implementing evidence-based practice in Taiwanese nursing homes attitudes and perceived barriers and facilitators

Abstract

To date, there is a paucity of research investigating nurses' perceptions of evidence-based practice (EBP) in nursing homes, especially in non-Western countries. This descriptive, quantitative study investigated attitudes toward and perceived barriers and facilitators to research utilization among 89 Taiwanese RNs. The majority of nurses expressed positive attitudes toward research and EBP. The most frequently cited barriers were related to insufficient authority to change practice, difficulty understanding statistical analyses, and a perceived isolation from knowledgeable colleagues with whom to discuss the research. EBP facilitators included improved access to computers and Internet facilities in the workplace, more effective research training, and collaboration with academic nurses. These findings are similar to those from research conducted in Western countries and indicate that further education and training in research for nurses working in nursing homes would be beneficial.

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**Implementing Evidence-Based Practice in Taiwanese Nursing Homes:
Attitudes and Perceived Barriers and Facilitators. Journal of
Gerontological Nursing, 36(1), 41-48. (SCI)**

Abstract

To date, there is a paucity of research investigating nurses' perceptions of EBP in residential aged care facilities (RACFs), especially in non-Western countries. This research investigated the attitudes, barriers and facilitators to research utilization among 89 Taiwanese registered nurses using a descriptive, quantitative study. The majority of nurses expressed positive attitudes towards research and EBP. The most frequently cited barriers related to insufficient authority to change practice, difficulty in understanding statistical analyses and a perceived isolation from knowledgeable colleagues with whom to discuss the research. EBP facilitators included improved access to computers and internet facilities in the workplace; more effective research training and collaboration with academics. Our findings are similar to those from research conducted in Western countries and indicate that further education and training in research for nurses working in RACFs would be beneficial.

Background

Over the last two decades researchers and health care professionals, including nurses, have become increasingly aware of the importance of utilising EBP in health care settings. Prior to this time, nurses commonly complained of the irrelevancy of research to nursing practice and generally regarded research in a negative light (Bassett, 1993; Burrows & McLeish, 1995; Funk et al, 1993). While a gradual change towards more positive attitudes to research has been reported in recent literature (Glacken & Chaney, 2004; McCaughan et al., 2002; Olade, 2003) research is still not always rigorously utilized in nursing practice and this research-practice gap is considered a worldwide phenomenon (Mehrdad, Salsali & Kazemnejad, 2007; Nagy, Lumby, McKinley & Macfarlane, 2001; Olade, 2003). In the area of gerontological nursing this is an important issue since as recently noted by McConnell (2009) “evidence-based practice holds tremendous potential to optimize care outcomes for older adults, yet many nurses are ill prepared to identify, interpret, and apply the best evidence to their practice” (p. 27).

Unfortunately, research regarding nurses’ attitudes and perceived barriers to the adoption of EBP has been conducted predominantly in hospital settings in Western countries, such as Australia (Bonner & Sando, 2008), England (Veeramah, 1995), Sweden (Kajermo, Nordström, Krusebrant & Bjorvell, 1998) and the USA (Brett,

1987). Even in Western countries there is a paucity of research examining this topic in residential aged care facilities (RACFs) (Boström, Kajermo, Nordström & Wallin, 2009; Boström, Wallin & Nordström, 2006). One study that did examine this issue was conducted by Boström, Wallin and Nordström (2006). They investigated staff perceptions of factors related to EBP utilization in eleven facilities caring for older people in Sweden. They found positive attitudes towards research, but a relatively low extent of research use in daily practice. This was particularly true for the enrolled nurses and nurse aides in the sample.

Studies examining why nurses have not widely adopted EBP have identified three main sets of barriers. These include the individual's attributes, such as lack of research knowledge; the organisational context, including lack of accessibility to research findings, lack of time, lack of support from others and lack of authority; and the nature of research including the gap between research and practice and the complexity of the presentation of research articles (Fink et al., 2005; Glacken & Chaney, 2004; Mehrdad, Salsali & Kazemnejad, 2008).

A large number of studies have also shown that nurses lack knowledge and confidence to undertake research or apply research findings in practice (Gerrish & Clayton, 2004; Kuuppelomaki & Tuomi, 2005; Oranta, Routasalo & Hupli, 2002; Walsh, 1997). A study of 765 nurses working in a UK hospital revealed

that only 40.5% of them understood the term EBP and 68.9 % had only a basic knowledge of the research process (McSherry, 1997). An Australian investigation (Retsas, 2000) of 400 hospital-based RNs found they cited a lack of understanding of research as a major limitation to their grasp of research knowledge. Thus, there was a significant deficit in nurses' knowledge of research and the research process and this reflected an inadequacy in research training.

Organisational factors have also been implicated as an important obstacle for EBP implementation. Researchers have consistently found that most of the significant barriers to EBP implementation were related to features of the organisation. These included a lack of accessibility for nurses to research articles (Boström, Kajermo, Nordström & Wallin, 2009; Kajermo et al., 1998), a lack of time (McSherry, 1997; Nagy et al., 2001), the lack of support from others in the workplace (Boström, Kajermo, Nordström & Wallin, 2009; Griffiths et al., 2001) and the lack of authority from medical staff and managers (Funk, Tornquist & Champagne, 1995; Kajermo et al., 1998). Given these findings it is not surprising that some researchers have asserted that EBP should be considered as an organisational issue rather than as an individual response (Dunne, 1990).

As previously noted, most studies conducted to date have been undertaken with nurses in hospital settings within Western countries. In order to ensure quality of nursing care for older people, research investigating the experience and attitudes towards EBP of registered nurses who work in RACFs is necessary. Further, an investigation of the difficulties aged care nurses perceive in incorporating research into their daily care and the strategies they see as useful to facilitate the adoption of EBP into nursing homes will provide important information about how best to close the research-practice gap. Given the lack of information about EBP in RACFs in non-Western countries we selected Taiwan as the site of this study. This study extends the scope of previous work in two ways: by investigating a non-hospital setting and focusing on a non-Western society. It is the first such study to do so. The specific research objectives were: to determine the range of attitudes towards EBP among nurses practising in nursing home settings and the factors associated with those differing views and: to describe nurses' perceptions of barriers to EBP in these nursing home settings; and the facilitators that may assist the development and use of EBP by nurses in nursing home settings.

Method

A descriptive, quantitative study was conducted with a convenience sample of eighty-nine registered nurses from six nursing homes. Participants completed a

survey, that provided self-report data on nurses' involvement in research related activities and EBP; and the attitudes, barriers and facilitators perceived by them regarding implementation of EBP.

Sample

Hsinchu is one of 16 districts in Taiwan. Hsinchu has a total of 12 nursing homes registered with the Taiwan Department of Health. From these 12, six were randomly selected for inclusion in the study. The method used was a lottery draw which involved placing twelve numbered slips in a container and selecting one at a time until six numbers were drawn. Each slip corresponded to one of the 12 nursing home sites. The total study sample comprised the 96 registered nurses (RNs) who were employed across the six facilities. Eighty-nine of these RNs completed the questionnaire.

Data collection

Since no previous single study had addressed all the aspects we wanted to examine, we developed a questionnaire that incorporated relevant items from other surveys. For example, the section on "Barriers to using research in practice" comprised 29 items identical to those in the scale employed by Funk, Champagne, Wiese and Tornquist (1991). This scale was used because it has high face and content validity, with Cronbach's alpha coefficients reported

between 0.65 and 0.80 (Funk et al., 1991) and as high as 0.91 (Kajermo et al., 1998; Retsas, 2000). The other survey sections contained items that were adapted from several sources, with permission from each of the authors (Clifford & Murray, 2001; McSherry, 1997; Veeramah, 2004; Hutchinson & Johnston 2004; Walsh, 1997). Minor modifications to the wording of some items were made in order to improve relevance to the target audience and setting. All items (except socio-demographic characteristics) were in the form of statements, which the respondent is asked to rate on a Likert scale from 1 to 5 (1 = strongly disagree; 2 = disagree; 3 = can't decide; 4 = agree; 5 = strongly agree). Under the supervision of the first author, these statements were translated into Mandarin by a professional translator. Since not all respondents were expected to be familiar with the term “evidence-based practice”, it was referred to in the survey as “the implementation of research evidence to nursing care”. The internal consistency of the sum variable was measured using Cronbach's alpha coefficient; its value was 0.78.

Data analysis

The data were subjected to analysis using the Statistical Package for Social Sciences (SPSS). The coded data was entered on to SPSS statistical software (Version 10.0; SPSS Inc., Chicago, IL USA). Descriptive statistics included

frequencies, percentages, means and standard deviations. Frequency and descriptive statistics were used to identify illegal entries and remaining ambiguously worded items that tend to yield missing data as well as to analyze data on: socio-demographic details of the sample, attitudes towards EBP, barriers and facilitators to using research in practice. Inferential statistics were used to assess whether there were significant differences between dependent variables and socio-demographic characteristics. The differences in the background variables with nurses' attitudes toward and associations of workplace with barriers and facilitators to the utilization of research results were studied using chi-square analysis, non-parametric procedures (Kruskal-Wallis test and Mann-Whitney U test), T-tests, One-way Analysis of Variance (ANOVA), Tukey honest significant difference (HSD) test and Pearson correlations for comparing the mean values.

Ethical issues

Ethical approval for this study was obtained from the boards of each participating nursing home and from the University Human Research Ethics Committee. All participants were given both written and verbal information about the purpose and nature of the study before being invited to sign the consent form. They were also informed that there was no obligation for them to

participate, that they could withdraw at any time without penalty and that information they provided would be treated strictly confidentially. The questionnaires were returned to the first author in individual sealed envelopes. Identification numbers were used on all completed questionnaires which were stored in a locked filing cabinet in the University office of the first author and will be retained for seven years.

Results

Socio-demographic characteristics of respondents

Table 1 presents the socio-demographic characteristics of the 89 registered nurses. The mean age of these participants was 31.8 years (range 22-53 years). On average they had been in professional nursing for nine years (range less than 1 year to a maximum of 30 years). Most participants 70% ($n = 62$) held a graduate diploma in nursing, 18% ($n = 16$) held a Bachelor's degree and 11.2% ($n = 10$) had graduated from nursing school. Only one participant held a Master's degree. All of the participants currently worked as registered nurses although 12 had previously been employed as nursing managers.

Table 1

Socio-demographic characteristics of respondents (n = 89)

Variable	<i>n</i>	%	<i>Mean</i>	<i>SD</i>
Age (years)			31.83	8.32
Nursing experience (years)			9.00	6.94
Education level				
Nursing school	10	11.2		
Graduate diploma	62	69.7		
Bachelor's degree	16	18		
Master's degree	1	1.1		
Past employment position				
Registered nurse	71	79.8		
Nursing manager	12	13.5		
Other	6	6.7		

RNs' attitudes towards evidence-based practice

Table 2 shows the means and standard deviations in rank order for the 11 statements assessing RNs' attitudes towards EBP in nursing homes. The results reveal that the RNs in this study reported generally positive attitudes towards research and EBP with an overall mean across the 11 items of 3.74. The three statements that elicited the highest average ratings were: "Research is essential for the development of the nursing profession" ($M = 4.19$, $SD = 0.56$), "Gerontology nurses should do a compulsory course on research methodology" ($M = 4.01$, $SD = 0.75$) and "Nursing research has a large part to play in improving aged care" ($M = 4.01$, $SD = 0.55$).

No significant differences were revealed between the RNs' attitudes towards EBP and past employment position, education level, age and years of nursing experience.

Table 2

RNs' attitudes towards evidence-based practice in nursing homes

Rank Order	Attitude	Mean Score <i>M</i>	Standard Deviations <i>SD</i>
	Overall 11 Attitude Statements	3.74	0.70
1	Research is essential for the development of the nursing profession.	4.19	0.56
2	Gerontology nurses should do a compulsory course on research methodology.	4.01	0.75
3	Nursing research has a large part to play in improving aged care.	4.01	0.55
4	Research is the way forward to change nursing practice.	3.99	0.59
5	One essential role of gerontology nurses is to carry out research.	3.98	0.67
6	Research helps me in my decision-making.	3.92	0.57
7	Research is relevant to day-to-day work in nursing home settings.	3.82	0.67
8	Nursing homes should become an evidence-based practice setting.	3.75	0.87
9	I would change my practice based on research findings.	3.47	0.72
10	Nursing research is of interest to me.	3.42	0.78
11	Research-based practice is useful in a hospital setting, but not in a long-term care setting.	2.60	0.96

The barriers perceived by RNs to using research in practice

The description of the RNs' perceptions of barriers to EBP in these nursing home settings was one of the research objectives of this study. Table 3 presents the means and standard deviations of the RNs' perceived barriers to the use of research evidence for the five items endorsed as the most significant barriers and the five items endorsed as the least significant barriers. The most strongly endorsed perceived barrier was, "The nurse does not feel she/he has enough authority to change patient care procedures" ($M = 3.71$, $SD = 0.82$) followed by, "Statistical analyses are not understandable" ($M = 3.63$, $SD = 0.74$). The next three most strongly endorsed barrier statements were: "The nurse is isolated from knowledgeable colleagues with whom to discuss the research" ($M = 3.58$, $SD = 0.88$), "The nurse doesn't feel capable of evaluating the quality of research" ($M = 3.56$, $SD = 0.81$), and "There is insufficient time on the job to implement new ideas" ($M = 3.54$, $SD = 0.80$). The participants disagreed with the negative statements including: "The nurse does not see the value of research for practice" ($M = 2.38$, $SD = 0.79$), "The nurse feels the benefits of changing practice will be minimal" ($M = 2.51$, $SD = 0.85$), and "The nurse is unwilling to change/try new ideas" ($M = 2.54$, $SD = 0.80$). These results indicate that the RNs believe research

is valuable and change is beneficial and that the nurses were willing to try new ideas.

While the Barriers to Research Utilization section of the questionnaire comprised 29 items, the participants were invited to list additional statements (questions 30-33) that were not included in those 29 items. Only three of the 89 participants responded to this latter component of the study and a total of six additional barriers were identified. These additional barrier statements included: the lack of funding, lack of family support, the resident's lack of cooperation and motivation, the lack of access to research relevant software, the nature of the environment and teamwork.

Table 3

The means and standard deviations of the five items endorsed as the most significant and least significant barriers to using research in practice

Barrier Statements	Mean <i>M</i>	Standard Deviation <i>SD</i>
The nurse does not feel she/he has enough authority to change patient care procedures.	3.71	0.83
Statistical analyses are not understandable.	3.63	0.74
The nurse is isolated from knowledgeable colleagues with whom to discuss the research.	3.58	0.88
The nurse does not feel capable of evaluating the quality of the research.	3.56	0.81
There is insufficient time on the job to implement new ideas.	3.54	0.80
The nurse is unaware of the research.	2.80	1.03
The nurse sees little benefit for self.	2.73	0.93
The nurse is unwilling to change/try new ideas.	2.54	0.80

The nurse feels the benefits of changing practice will be minimal.	2.51	0.85
The nurse does not see the value of research for practice.	2.38	0.79

The facilitators perceived by RNs to using research in practice

One of the research objectives was to identify what the RNs perceived as potential facilitators that may assist the development and use of EBP by RNs in nursing home settings. Table 4 presents the means and standard deviations of the five items endorsed as the most significant and least significant facilitators to using research in practice.

The two highest perceived facilitators were, “Enhanced ward-based computer and internet facilities” ($M = 4.14$, $SD = 0.53$) and “Advanced education to increase research knowledge” ($M = 4.09$, $SD = 0.60$). The least strongly endorsed facilitator was “Increasing the time available for reviewing and implementing research findings” ($M = 3.90$, $SD = 0.57$). The means for all of these statements were within a very small range from 4.14 to 3.90 which indicated that all of the statements were perceived by participants to be important facilitators.

Table 4

The means and standard deviations of the five items endorsed as the most significant and least significant facilitators to using research in practice

Facilitator Statement	Mean <i>M</i>	Standard Deviation <i>SD</i>
Enhanced ward-based computer and internet facilities.	4.14	0.53
Advanced education to increase your research knowledge base.	4.09	0.60
Improving the understandability of research reports.	4.08	0.59
Additional authority to instigate changes.	4.08	0.59
If clinical and academic nurses worked together to carry out research it would be more relevant to patient care.	4.06	0.63
Improving availability and accessibility of research reports.	3.97	0.61
Quarterly workshops on interpretation of statistical/methodology and implementing changes in nursing practice at clinical level.	3.94	0.66
Opportunities to attend conferences.	3.94	0.65
Opportunities to attend courses on research.	3.91	0.62
Increasing the time available for reviewing and implementing research findings.	3.90	0.57

Discussion

Overall the RNs demonstrated a positive attitude to research and EBP. This is in keeping with previous research findings (McSherry, 1997; McCaughan, et al., 2002; Olade, 2003; Veeramah, 2004) and suggests that the RNs recognize the importance of EBP and its potential value for their clinical practice. We also found that the RNs' attitudes towards research did not differ in regard to their past employment history, education level, age or years of nursing experience. The only inconsistency with previous findings from European studies was that in the latter, a higher level of education was associated with more positive attitudes towards EBP

(Kajermo et al., 2000; Olade, 2003; Veeramah, 2004). Similarly, a study conducted in Australia also found that senior nurses were more likely to have a positive attitude towards research, and completion of university subjects on nursing research was significant in determining positive attitudes and knowledge of research (Bonner & Sando, 2008). One possible explanation may be that in the present study only one participant held a Master's degree, whereas a higher proportion of the European and Australian nursing participants had attained Masters or higher levels of education. The small numbers in the current study have resulted in an inability to detect statistical differences if they existed.

The RNs perceived a lack of authority to instigate change in the clinical setting as the most substantial barrier to research utilization. This concurs with other findings and may relate to the low status and autonomy of nurses across all the countries investigated (Fink et al., 2005; Schoonover, 2009). As has been argued by Olade (2003), nurses' general lack of power and authority might emanate from a tradition where nurses did not question nursing practice, but instead focused on tasks set for them by colleagues in management positions or by medical staff.

Statistical analysis is rated as the second most important barrier in the current study. This item was ranked first in the UK (Walsh, 1997), fourth in Australia (Retas, 2000) and tenth in Sweden (Kajermo et al., 1998). These rankings may be

indicative of differences in nursing training in the various countries. Statistical analysis is given only minimal attention in the curriculum of nursing courses in Universities in Taiwan. Most students either cannot understand statistics or show a fear of them (Kajermo et al., 2000). This may be because education in such skills is not a specific requirement for entering the nursing profession in Taiwan.

The item “the nurse is isolated from knowledgeable colleagues with whom to discuss the research” was the third most important barrier to research utilization among the Taiwanese RNs. This finding can be interpreted in various ways. It may reflect a lack of RNs within organizations who have been trained in research methods, or it may reflect the RNs need for knowledge and guidance when attempting to interpret research findings. To effect change and advance the status of nursing professionals, the employment of highly qualified nurses with experience in research appears crucial. This will provide support to advance nurses’ skills and engender confidence with clinical capability in the workplace (Meah, Luker & Cullum, 1996). The benefits of having access to nursing clinicians who can impart their clinical wisdom in combining evidence and practice specific to gerontological care is therefore extremely important (Bannel, 2009).

In line with previous findings (Griffiths et al., 2001; McSherry, 1997; Mehrdad, Salsali & Kazemnejad, 2008), perceived lack of time was the fifth most

commonly cited barrier to research utilization. Pettengill et al. (1994) suggest there is a need to investigate the concept of time in relation to personal factors such as motivation and aspiration. The need for such an investigation is further supported by Thompson and colleagues (2008), who suggest that lack of time as a barrier to research utilization is more multifaceted than depicted in the literature and needs to include the notion of the mental time and energy that is required by nurses in their complex work environments. Overall, the similarities between the findings in the current study and previous studies suggest that differences between nursing in nursing homes and other settings should not be overestimated.

Our findings suggest the need to implement interventions that promote the uptake of research evidence into practice. The RNs in the current study envisaged a strong learning organisation in which they would have: greater opportunity and support for learning about EBP; access to further education and training to increase their research knowledge; and collaboration with universities to reduce the gap between research and practice. Previous studies have also demonstrated the effectiveness of a variety of interventions, such as increasing managerial support for front line staff, programmes of advanced education to provide nurses with research skills, and increasing time made available to read and implement research (Kajermo et al., 1998; Parahoo, 2000; Thompson et al., 2007). A systematic review of these

interventions by the NHS Centre for reviews and dissemination (1999) concluded that single interventions are insufficient and that successful strategies to promote the update of evidence-based practice are likely to be multifaceted, targeting various barriers.

Implications for practice, research and education

The findings from this study have implications for practice, research and education. Our research suggests that nurses need to be supported so they can move from using anecdotal evidence, past experience and precedents to guide their clinical practice to evidence based decision making. Managers can play an important role in promoting and supporting these changes through providing more time to implement research findings and providing permission and support for nurses to change their nursing care practices.

Nurse educators need to consider the best ways of teaching epidemiology and statistics, of developing skills in critical appraisal, and engendering familiarity with the basic principles and concepts of research. This will contribute to clinical nurses attaining greater knowledge and understanding of research and its implementation. Additionally, it will assist nurses to become confident in their ability to utilize appropriate research findings in practice and contribute to their professional responsibility of providing high quality care for nursing home

residents. Finally, there is also a pressing need for in-service education to increase nurses knowledge and awareness of research and its utilization.

Conclusions and Limitations

Overall our findings concur with those of previous studies that have investigated barriers and facilitators to research utilization in Western countries. Despite cultural differences, a consistency exists among most studies in respect to the positive attitude of nurses towards research and EBP and the most common barriers to EBP. It is clear that a considerable amount of work needs to be done in all countries, including Taiwan, so as to overcome these barriers. One of the limitations of this study is the small sample size. Therefore, it would be prudent to repeat the study with a larger sample of nurses working in RACFs, both in Western and non-Western countries. It is suggested that the questionnaire developed for this study be employed in future research to facilitate comparative analyses. We also recommend that qualitative method, such as individual interviews, focus groups and direct observation be employed for a more comprehensive picture.

References

- Bannel, W. (2009). Sharing the evidence, adding our clinical wisdom. *Journal of Gerontological Nursing*, 35, 3-4
- Bassett, C. C. (1993). Role of the nurse teacher as researcher. *British Journal of Nursing*, 2(18), 14-27, 911-912, 917-918.
- Bonner, A., Sando, J. (2008). Examining the knowledge, attitude and use of research by nurses. *Journal of Nursing Management*, 16, 334-343.
- Boström, A., Kajermo, K. L., Nordström, G., & Wallin, L. (2009). Registered nurses' use of research findings in the care of older people. *Journal of Clinical Nursing*, 18, 1430-1441.
- Boström, A., Wallin, L., & Nordström, G. (2006). Research use in the care of older people: A survey among healthcare staff. *International Journal of Older People Nursing*, 1(3), 131-140.
- Brett, J. (1987). Use of nursing practice research findings. *Nursing Research*, 36(6), 344-349.
- Burrows, D. E., & McLeish, K. (1995). A model of research-based practice. *Journal of Clinical Nursing*, 4(4), 243-247.
- Clifford, C., & Murray, S. (2001). Pre- and post-test evaluation of a project to facilitate research development in practice in a hospital setting. *Journal of Advanced Nursing*, 36(5), 685-695.
- Dunne, C. (1990). Setting standards: Improving intensive care. *Nursing Times*, 86(12), 32-34.
- Fink, R., Thompson, C., & Bonnes, D. (2005). Overcoming barriers and promoting the use of research in practice. *Journal of Nursing Administration*, 35(3), 121-129.
- Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991). Barriers to using research findings in practice: The clinician's perspective. *Applied Nursing Research*, 4(2), 90-95.

- Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1993). Barriers: The Barriers to Research Utilization Scale. *Clinical Methods*, 39-45.
- Funk, S. G., Tornquist, E. M., & Champagne, M. T. (1995). Barriers and facilitators of research utilization: An integrative review. *Nursing Clinics of North America*, 30(3), 395-407.
- Gerrish, K., & Clayton, J. (2004). Promoting evidence-based practice: An organizational approach. *Journal of Nursing Management*, 12(2), 114-123.
- Glacken, M., & Chaney, D. (2004). Perceived barriers and facilitators to implementing research findings in the Irish practice setting. *Journal of Clinical Nursing*, 13(6), 731-740.
- Griffiths, J. M., Bryar, R. M., Closs, S. J., Cooke, J., Hostick, T., Kelly, S., & Marshall, K. (2001). Barriers to research implementation by community nurses. *British Journal of Community Nursing*, 23, 373-379.
- Hutchinson, A. M., & Johnston, L. (2004). Bridging the divide: A survey of nurses' opinions regarding barriers to, and facilitators of, research utilization in the practice setting. *Journal of Clinical Nursing*, 13(3), 304-315.
- Kajermo, K. N., Nordström, G., Krusebrant, A., & Bjorvell, H. (1998). Barriers to and facilitators of research utilization, as perceived by a group of registered nurses in Sweden. *Journal of Advanced Nursing*, 27(4), 798-807.
- Kajermo, K. N., Nordström, G., Krusebrant, A., & Bjorvell, H. (2000). Perceptions of research utilization: comparisons between health care professionals, nursing students and a reference group of nurses clinicians. *Journal of Advanced Nursing*, 31, 99-109.
- Kuuppelomaki, M., & Tuomi, J. (2005). Finnish nurses' attitudes towards nursing research and related factors. *International Journal of Nursing Studies*, 42(2), 187-196.
- McCaughan, D., Thompson, C., Cullum, N., Sheldon, T., Trevor, A., & Thompson, D. (2002). Acute care nurses' perceptions of barriers to using research information in clinical decision-making. *Journal of Advance Nursing*, 39(1), 46-60.
- McConnell, E. S., Lekan, D., Bunn, M., Egerton, E., Corazzini, K. N., Hendrix, C. D., & Bailey, D. E. (2009). Teaching evidence-based nursing practice in

- geriatric care settings. The Geriatric nursing innovations through education institute. *Journal of Gerontological Nursing*, 35, 26-33.
- McSherry, R. (1997). What do registered nurses and midwives feel and know about research? *Journal of Advanced Nursing*, 25(5), 985-998.
- Meah, S., Luker, K. A., & Cullum, N. A. (1996). An exploration of midwives' attitudes to research and perceived barriers to research utilization. *Midwifery*, 12, 73-78.
- Mehrdad, N., Salsali, M., & Kazemnejad, A. (2007). Nurses' attitudes toward research utilization in clinical practice [Farsi]. *The Journal of Tehran Faculty of Nursing & Midwifery*, 13(2), 81.
- Mehrdad, N., Salsali, M., & Kazemnejad, A. (2008). The spectrum of barriers to and facilitators of research utilization in Iranian nursing. *Journal of Clinical Nursing*, 17(16), 2194-2202.
- Mulhall, A. (1995). Nursing research, what difference does it make? *Journal of Advanced Nursing*, 21, 576-583.
- Nagy, S., Lumby, J., McKinley, S., & Macfarlane, C. (2001). Nurses' beliefs about the conditions that hinder or support evidence-based nursing. *International Journal of Practice*, 7, 314-321.
- NHS Centre for Reviews and Dissemination (1999). *Effective Health Care Bulletin: getting evidence into practice*. NHS Centre for Reviews and Dissemination, The University of York: York.
- Olade, R. A. (2003). Attitudes and factors affecting research utilization. *Nursing Forum*, 38(4), 5-15.
- Oranta, O., Routasalo, P., Hupli, M. (2002). Barriers to and facilitators of research utilization among Finnish registered nurses. *Journal of Clinical Nursing*, 11, 205-213.
- Parahoo, K. (2000). Barriers to and facilitators of research utilization among nurses in Northern Ireland. *Journal of Advanced Nursing*, 31(1), 89-98.
- Pettengill, M. M., Gillies, D. A., Clark, M. C. (1994). Factors encouraging and discouraging the use of nursing research findings. *Journal of Nursing Scholarship*, 26, 143-147.

- Retsas, A. (2000). Barriers to using research evidence in nursing practice. *Journal of Advanced Nursing*, 31(3), 599-606.
- Schoonover, H. (2009). Barriers to research utilization among registered nurses practicing in a community hospital. *Journal for Nurses in Staff Development*, 25(4), 199-212.
- Thompson, D., Estabrooks, C. A., Scott Findlay, S., Moore, K., & Wallin, L. (2007). Interventions aimed at increasing research use in nursing: a systematic review. *Implementation Science* 2, 15.
- Thompson, D. S., O'Leary, K., Jensen, E., Scott-Findlay, S., O'Brien-Pallas, L., & Estabrooks, C. A. (2008). The relationship between busyness and research utilization: Is it about time. *Journal of Clinical Nursing*, 17(4), 539-548.
- Veeramah, V. (1995). 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. *Journal of Advanced Nursing*, 22, 855-861.
- Veeramah, V. (2004). Utilization of research findings by graduate nurses and midwives. *Journal of Advanced Nursing*, 47(2), 183-191.
- Walsh, M. (1997). Perceptions of barriers to implementing research. *Nursing Standard*, 11, 34-37.