

Evidence Based Practice in Long Term Care Settings

Janet K. Specht

The University of Iowa, John A. Hartford Center for Geriatric Nursing Excellence, Iowa City, USA

Purpose: The purpose of this manuscript is to discuss the need for use of evidence based practice (EBP) in LTC, the current use of evidence in long term care facilities and what we know about adoption of the use of EBP in LTC. **Methods:** Literature review and reporting of findings from the M-TRAIN study that was a quasi-experimental design to test the effectiveness of an intervention to increase the use of EBPs for urinary incontinence and pain in 48 LTC facilities. **Results:** Barriers to adopting EBPs include lack of available time, lack of access to current research literature, limited critical appraisal skills, excessive literature to review, non-receptive organizational culture, limited resources, and limited decision-making authority of staff to implement change. Strategies to promote adoption of EBP include the commitment of management; the culture of the home; leadership; staff knowledge, time, and reward; and facility size, complexity, the extent that members are involved outside the facility, NH chain membership, and high level of private pay residents. Findings from the M-TRAIN add, stability of nurse leader and congruency between the leaders perception of their leadership and the staff's perception of the leadership. **Conclusion:** There is clear evidence of the need and the benefits to residents of LTC and to the health care system yet adoption of EBP continues to be slow and sporadic. There is also evidence for the process of establishing best evidence and many resources to find the available EBPs. The urgent need now is finding ways to best get the EBPs implemented in LTC. There is growing evidence about best methods to do this but continued research is needed. Clearly, residents in LTC deserve the best care possible and EBPs represent an important vehicle by which to do this.

Key words: Long term care, Evidence based practice, Translation research, Adoption, Empowerment

INTRODUCTION

- ▶ Persons with dementia are not receiving pain medication unless they ask for it.
- ▶ A number of pressure ulcers are present and not healing well.
- ▶ Indwelling catheters are prevalent and the length of time the catheter is used is over 2 weeks.

These are all situations that are common in long term care that have strong evidence to guide practice yet they continue to be prevalent problems. Research has demonstrated that persons with dementia do have pain like all other people and though they cannot verbalize it, it should be treated (Herr, Bursch, Ersek, Miller, & Swafford, 2010). There are a number of practices that help prevent and heal pressure ulcers that are not used in long term care (Wipke-Tevis et al., 2004). We know that if a

person has an indwelling catheter for over 24 hours they will have a urinary tract infection so it is important to minimize catheter use. Yet, the number of persons with indwelling catheters in long term care continues to increase and urinary tract infections are a serious problem (Jacobson, Stickler, Mobley, & Shirliff, 2008). All of these continuing problems are evidence of failure to use the available evidence in clinical practice. When enough research evidence is available it supports evidence-based practice and that should become the standard of care. When enough research evidence is available, the practice should be guided by research evidence in conjunction with clinical expertise and patient values.

Poor quality long term care and resident outcomes are of enormous and increasing concern in the United States and around the world. Despite the prevalence of quality problems and the availability of evidence-based practice (EBP) and protocols that would improve resident out-

Address reprint requests to : Janet K. Specht

College of Nursing, University of Iowa, Iowa City, Iowa 52242, USA. 229 Juniper Dr. Boone, NC 28607
Tel: 319-331-7310 or 828-386-1123 Fax: 319-335-7129 E-mail: janet-specht@uiowa.edu

Received: March 19, 2013 Accepted: March 19, 2013

comes, the adoption of EBPs in LTC is sparse (Feldman & Kane, 2003). Adoption is especially rare in rural facilities that tend to be isolated in small communities with few registered nurses (RNs) and even fewer with expertise in gerontological nursing (Berman et al., 2005).

The purpose of this manuscript is to discuss the need for use of evidence based practice in LTC, the current use of evidence in long term care facilities and what we know about adoption of the use of EBP in LTC including the facilitators and barriers and areas needing further study. The author's study findings from a 5 year randomized control trial of introducing EBP in nursing homes for pain and urinary incontinence will be used to illustrate both the facilitators and barriers in adopting EBP in long term care and the need for further research in this area.

1. Evidence based practice

Nursing evidence based practice (EBP) is the use of current best evidence in the delivery of nursing care to individuals, groups, and communities. Translation research emphasizes the dissemination and implementation of EBPs in the practice of providers. Translating research evidence into practice may employ clinical guidelines, education, facilitators, and change agents. The translation of research to practice is often because of the inability of health care personnel to attend educational sessions and the absence of a change agent and leader (Abbott & Hotchkiss, 2001). Although EBPs save health care dollars and improve patient outcomes, use of research evidence in practice is sporadic, and studies show that nurses use EBPs inconsistently (Titler & Kerr, 2002). Up to two decades may pass before the findings of original research become a part of routine clinical practice (Agency for Healthcare Research and Quality, 2001). Disseminating and sustaining the implementation of research findings is a substantial obstacle to improving the quality of patient care. In a review of care received by Americans, less than half of the patients with chronic conditions received recommended care (Wagner et al., 2001).

EBP is a philosophical approach that is in opposition to traditional ways of doing things, "the way we have always done it" or rules of thumb. Evidence comes from a variety of sources including randomized clinical trials, other scientific methods such as descriptive, correlational and qualitative research, case reports, scientific principles and expert opinion. In many cases a sufficient research base won't be available, and health care decision-making is derived principally from non-research evidence sources such as expert opinion and scientific principles. As more research is done in a specific area, the research evidence must be

incorporated into the EBP. Using the best evidence, assures that each person living in long term care is receiving the highest quality of care.

From evidence regarding practice, individualized guidelines of best practices are developed to inform the improvement of the clinical practice for a specific problem. Guidelines have already looked at the research for a specific topic so that is not necessary for every nurse or every agency to do that. What is necessary before using the guidelines is examining how to use it, its currency and applicability to the population served. Guidelines on the National Guideline clearinghouse are published and endorsed only after a rigorous and exhaustive review of research evidence and are a good source for evidence-based guidelines that are a help in providing evidence based care.

Findings from research support that the implementation of EBP leads to a higher quality of care, improved patient outcomes, and decreased healthcare costs through reduction of morbidities, mortality, medical errors, and eliminating the geographic variation of healthcare. It also assists organizations in attaining high reliability (ie, safety). Because of the multiple benefits of EBP, hospitals and healthcare providers are being incentivized by third party payers (including the government) to implement EBP through such mechanisms as pay for performance or denial of benefits if standards are not met. Although evidence based healthcare results in improved patient outcomes and reduced costs, nurses do not consistently implement evidence based best practices (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012).

2. Significance of the use of EBP in long term care

There are a number of reasons that it is critical that we introduce and use EBP in long term care. The most pressing issue is the growing number of older persons in the world. It is anticipated that the number of people 80 and over will quadruple by 2050 (World Health Organization, 2012). This group of elders is more likely to have dementia, visual impairment, hearing loss, arthritis and no longer be able to care for themselves. Many of these persons will be cared for in long term care settings, putting increased burden on these settings to meet the needs. There are limited resources for long term care and the increased numbers will continue to stretch the resources. One of the advantages of the use of evidence based practices is that what is done is more likely to be effective, therefore making the best use of available resources. Secondly, there is more pressure to provide quality care. This pressure is coming from third part payers as well as the consumers of LTC services. The expecta-

tion is that the care delivered will be of high quality and that it will also promote the quality of life of the recipients. Evidence based practice is a way to assure quality care because what is delivered is tested to be most effective. Use of EBP also assures consistency between geographic areas, providers, and facilities because it presents the most effective way of arriving at the best outcomes given what is currently known. For a long while it has been assumed that the care of older persons does not take much skill and is routine. However, this is not true, we know that the number of chronic illnesses, functional losses and cognitive impairment increase the complexity of caring for older persons. We also know that as people age they have different needs, respond differently to medications and specialized knowledge is needed to meet these needs. We also know that what is known to be best practices based on evidence is often not used in practice, particularly in long term care. Each of these circumstances can be modified by the use of evidence based practice and protocols.

It is not possible for all nurses who work in LTC to be abreast of all of the research going on with elders, nor to know how to synthesize the information to put into practice. Evidenced based practice and protocols fill this gap. Identifying the desire to provide evidence based practice is the first step. The next step is to find the best practices and protocols. Translating that information into practice is a major challenge.

3. Factors that influence the use of EBP in NHs

Barriers to adopting EBPs are numerous and include lack of available time, lack of access to current research literature, limited critical appraisal skills, excessive literature to review, nonreceptive organizational culture, limited resources, and limited decision-making authority of staff to implement change. Limited resources are among the top challenges to introducing EBP in LTC (Brazil, Royle, Montemuro, Blythe, & Church, 2004). Brazil and colleagues tested an innovative intervention to provide information services to a LTC and community setting. The LTC setting had much more difficulty finding time to access the information and had fewer staff prepared to use search strategies or electronic resources for information. Other researchers have reported the inability of staff to implement and sustain EBP due to a shortage of time (Schnelle et al., 2002) although it is difficult to sort out the influence of staffing and other resources from attitudes, or from feelings that decisions are made about what is needed without significant involvement of staff who implement the practices (Specht, Horras, & Mobily, 2006). In an early study of adoption of research based practice for treatment of pressure ulcers in

a LTC facility, Frantz, Gardner, Specht and McIntire (2001) reported the adoption of the protocol and substantial reduction of costs in care of pressure ulcers. Factors identified that assisted the adoption of the EBP included a system that promoted accountability of practitioners, staff participation in the decision making, agency regard for research, and consultation with a nurse expert. These results are consistent with conclusions of Rantz and colleagues (2001) who noted the need for expert consultation in addition to quality feedback and education to improve processes of care. Others have shown that beliefs and attitudes, involvement in research activities, professional characteristics, education, information-seeking, socioeconomic status, time for implementation, and perception of research as relevant positively influence implementing EBPs (Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003). These findings suggest that interventions focused on empowering nursing staff with knowledge about the EBP and involvement of staff in decisions regarding implementation, combined with expert support and consultation, are keys to facilitating the use of EBPs in LTC.

Time and financial resources constrain the ability of the facilities to provide continuing education for staff beyond the 12 hours annually required by regulations. Much money and effort is directed at improved education of CNAs because they provide 90% of the care delivered in LTC, yet without leadership and support they cannot effect change. Other efforts are directed at education of RNs in LTC to provide them with the latest clinical information, but they are often unable to implement change because they lack the skills to influence barriers and lead the CNAs. Efforts to have effective teams of RNs and CNAs are needed.

4. Frameworks to guide adoption of EBP in LTC

Adoption-diffusion of innovations in nursing is the movement of knowledge into practice. The National Institutes of Health (NIH) further explicated and updated the concepts of translating or moving research into practice. The translation in process is identified as dissemination and implementation. Dissemination is the targeted distribution of information and intervention materials to a specific audience with the intent to spread knowledge and the associated evidence based interventions. Implementation is the use of strategies to introduce or change evidence-based health interventions within specific settings (National Institutes of Health, 2011). Rogers (2003) uses diffusion and dissemination interchangeably and defines diffusion "as a process by which an innovation is communicated through certain channels over time among the

members of a social system” (p. 5). Also defined as change that occurs in the structure and function of a system, diffusion is a special kind of communication with messages about new ideas. Adoption or implementation is similar to diffusion except that it deals with the psychological processes an individual experiences. The perceived characteristics of innovations determine the rate of adoption. These characteristics are: relative advantage (economic, prestige, convenience, and satisfaction), compatibility complexity (how difficult the innovation is to understand and use), trialability (ability to implement the innovation in parts or in limited ways), and observability (extent the results of innovations are visible to others) (Rogers). The greater the perceived advantage, the more rapid is the adoption. New ideas that are simple to understand and do not require obtaining a new set of skills and understandings are adopted more rapidly than more complex innovations. Trialability reduces uncertainty about making change. The easier it is for individuals to see the results of an innovation, the more rapid the adoption. The decision to adopt/implement an innovation is described as a five step process: 1) knowledge; 2) persuasion; 3) decision; 4) implementation, and 5) confirmation. The decision stage leads to the adoption of the innovation. Rogers also refers to the process of adoption as: 1) Initiation, corresponding to knowledge, persuasion, and decision; and 2) Implementation, including routinization, corresponding to implementation and confirmation. For adoption to occur people must feel like they can accomplish it.

Empowerment is defined as a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practice and informal techniques of providing efficacy information (Conger & Kanungo, 1988). Psychological empowerment includes the perceptions of motivation through enhanced self-efficacy or enhanced sense of meaning and control. At the individual level, empowerment is related to feelings of mastery, competence, and personal power (Miley, O’Melia, & DuBois, 1988; Spreitzer, 1996; VeneKlasen & Miller, 2002). At the interpersonal level, empowerment focuses on the ability to influence those with whom one interacts (social power) (Campbell, 2003; Gutierrez, 1994; Miley et al.). Relational empowerment refers to the distribution of power within relationships between leaders/manager and subordinates. Higher levels of meaningfulness result in less detachment and more commitment, involvement, and concentration of energy (Kanter, 1977). Higher levels of competence are related to greater effort and persistence in challenging situations (Gecas, 1989), better coping and higher goal expectations, higher creativity, flexibility, resiliency,

and performance (Deci, Connell, & Ryan, 1989). Higher levels of empowerment are related to less depression and stress, increased job satisfaction and performance, less tendency to withdraw from difficult situations, fewer sabotage behaviors, and more innovation and creativity (Greenberger & Strasser, 1986; Laschinger, Finegan, Shamian, & Wilk, 2004).

The premise of relational empowerment is that “employees should be permitted or even encouraged to influence their working environment” (Offerman, 2004). The empowered work environment provides the setting for workers to access opportunity, information, support, and resources necessary to get the jobs done. It is not enough to remove barriers. Organizations also need to use a deliberate process to empower members. Kanter (1977) contended that organizational structure, or the position, contributed more to the empowerment of employees than their personal traits. Five social structural variables are hypothesized to reflect an empowering organizational environment, including an organic structure, sociopolitical support, access to strategic information, access to resources, and an integrative culture (Armellino, Quinn Griffin, & Fitzpatrick, 2010; Spreitzer, 1996). Empowering systems cascade decision-making authority throughout the organizational hierarchy so that employees can experience a sense of autonomy and feel that they can make a difference in the larger system. Empowerment of staff in long term care to promote adoption of evidence based practice holds great promise to aid the process and has been demonstrated in some long term care research (Hollinger-Smith, Lindeman, Leary, & Ortigara, 2002; Hollinger-Smith & Ortigara, 2004) conducted by the Mather Lifeways Institute on Aging.

5. Adoption of evidence-based practice in LTC

For changes to occur that are required for the adoption of EBPs in LTC, administrators and staff must understand how EBPs will improve practice, why practice should be improved, and how divesting power for staff (RNs and CNAs) to use EBPs will make a difference in resident outcomes (Resnick, Quinn, & Baxter, 2004; Weissman, Griffie, Muchka, & Matson, 2001). Several studies have noted factors that influence the adoption of EBPs in LTC, including the commitment of management; the culture of the home; leadership; staff knowledge, time, and reward; and facility size, complexity, the extent that members are involved outside the facility, NH chain membership, and high level of private pay residents (Castle, 2001; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Hollinger-Smith et al., 2002; Reinhard & Stone, 2001).

Translating Research Into Practice (TRIP), an initiative of the Agency for Health Care Research and Quality (AHRQ), focuses on implementation methods to successfully translate research findings in diverse settings. Two TRIP initiatives, one in 1999 and one in 2000, aimed to broaden the settings for testing methods for translation research and identify organizational and clinical factors associated with successful implementation. In the first TRIP initiative, no single approach to translating research to practice was found to be effective; information and education alone were not effective, but multiple strategies were more effective (Bland et al., 2003; Gross et al., 2001). Much that has been learned about translating research into practice has been from studies in hospital inpatient care settings where professionals practice in close proximity. Research in these settings is not directly transferable to LTC or home care practice. Thus, it remains unknown what translation research strategies are effective in different types of settings. Because most nursing translation research has focused on professional nurses and most EBPs and guidelines are developed for implementation by professional nurses, specific EBP education, diffusion, and implementation strategies must be developed and tested in LTC where nonprofessional staff provide the majority of direct care.

Looking at two clinical problems, pain and urinary incontinence illustrates issues with using EBP in LTC. Clinical practice guidelines or EBPs for incontinence (UI) has been used with varying success in translating research into practice (Roe et al., 2004). Guidelines were widely distributed and adapted for use in LTC settings in 2000, yet there is minimal change in the prevalence of UI in NHs (Roe et al.). Three of the AHRQ funded TRIP II studies are in LTC, including a study of ways to improve pain management in NHs (Jones et al., 2004), a model for use of the UI Guideline in NHs (Watson, 2004), and strategies to optimize antibiotic use in LTC (Loeb et al., 2002). Watson, Brink, Zimmer and Mayer (2003) completed a TRIP project and had a second project to describe UI practice and barriers to improvement and to develop strategies for improvement of care. The second study, based on data from the first, tested an approach using advanced practice nurses to improve practice. Barriers to the implementation of EBP identified in Watson's initial study are limited resources and inadequate clinician time. Evidence that implementation of EBP clinical guidelines is effective in positively influencing processes and outcomes came from a review of 18 studies (Thomas et al., 2000). Yet, many elders in acute and LTC settings continue to experience unassessed and untreated pain and many settings continue to use treatments for the prevention and treatment of UI that are not supported by current research evidence (Jones et al.; Parmelee,

2004; Richards & Beck, 2002; Specht, 2005).

6. Tested strategies for implementation of EBPs

Implementation strategies must address both the individual and the organizational perspective (Titler, 2004). If individuals within organizations don't help to select which EBPs they wish to follow, quality of care will be inconsistent and potentially result in poor patient outcomes.

Audit and feedback is an important strategy to promote use of EBPs. Performance reports on individual clinicians or health care teams to examine adherence to evidence-based practice and reporting this back to providers aids adoption. This strategy has consistently shown a positive effect on changing practice behavior of providers. Auditing and feedback are ongoing processes of using and assessing performance indicators, aggregating data into reports and discussing the findings with practitioners during the practice change. During is the important word here, the information helps people know how they are doing and to change behavior if they are not on target. Although there is no clear evidence for best ways to provide audit and feedback, effects may be larger when clinicians are active participants in implementing change and discuss the data rather than being passive recipients of feedback reports. Hysong, Best and Pugh (2006) found that high-performing institutions provided timely, individualized, non punitive feedback to providers, whereas low performers were more variable in their timeliness and non-punitiveness and relied more on standardized facility level reports.

Academic Detailing is outreach education to providers that presents new evidence-based management options with tools to support changes in practice. This is usually done with content experts who have knowledge of the research base and meet one on one with practitioners or teams in their setting to provide information about the EBP topic. They are able to explain the research base for the EBPs to others and are able to respond to challenges and debates. This strategy may include providing feedback on provider or team performance with respect to selected EBP indicators (eg: frequency of pain assessment). Rantz and colleagues (2001) has shown that the consultation in combination with feedback is more effective for improving resident outcomes.

Clinical Pathways are predetermined approaches for care of individual care problems, often multidisciplinary in nature and consisting of delegated nursing acts and checklists. They may also be in the form of algorithms, steps to guide clinicians through the use of the evidence. These are especially helpful when time is limited.

Opinion Leaders include engaging a well-respected leader in the LTC setting to advocate for the kind of evidence-based change in question. Opinion leaders are from the local peer group, viewed as a respected source of influence, considered by associates as technically competent, and trusted to judge the fit between the innovation and the local situation. The key characteristic of an opinion leader is that he or she is trusted to evaluate new information in the context of group norms. Few successful projects have implemented innovations in organizations without the input of identifiable opinion leaders. Social interactions such as hallway chats, break room discussions and asking questions are important, but often not considered when working on adoption of EBP. Having local opinion leaders discuss the EBPs with members of their peer group is necessary to translate research into practice. In LTC this is often the Director of Nursing or an experienced CNA who is a long time and respected employee.

Change Champions are practitioners within the local group setting (unit, clinic, facility) who are expert clinicians, passionate about the innovation, committed to improving quality of care, and have a positive working relationship with other staff in the setting. Using a core-group approach (a team) in conjunction with a change champion makes a critical mass of practitioners promoting adoption of the EPB. For example, you could have the change champions from each unit meet as a group and that forms your critical mass for adoption or you could have the staff from the pilot unit be the core group for assisting implementation throughout the facility.

Multifaceted strategies are approaches that incorporate more than one approach to implementing change, i.e., continuing education sessions and the adoption of a standardized assessment tool and the use of change champions for each unit.

Piloting the intervention has a positive influence on the extent of adoption because it permits working with a smaller group to work through any difficulties there might be with implementation and when successful adds a whole group of people who will help with the adoption in other areas, they become the change champions.

Additional successful EBP adopting strategies from the literature include: commitment of management, culture of the facility, leadership, staff knowledge, time, complexity, rewards and recognition, facility size, extent that staff are involved outside the facility and corporate facilities (Greenhalgh et al., 2004; Lekan-Rutledge, 2000; Titler & Everett, 2001). Leadership is key. The nurse in the leadership position is essential to help staff see the need, have the support to make changes and receive reward

and recognition for their efforts. Less complex interventions are easier to implement. The Veteran's Administration has a saying in talking about evidenced base practice—make the best way the easy way. Larger facilities usually do better at implementing EBP. Attendance at conferences and other opportunities to talk and change views with others leads to better adoption. Corporate LTC facilities are better at implementation, perhaps because they have consulting nurses who can support and reinforce the changes in practice. Review of findings from the author's study entitled Multi-level Translation Research Application in Nursing Homes (M-TRAIN) is presented to add to the evidence about translating evidence into practice.

7. MTRAIN study

Improving Continence & Pain Control in LTC: The Multi-level Translation Application in Nursing Homes (MTRAIN) was a systematic trial of an innovative intervention to increase the use of Evidence-Based Protocols (EBPs) on pain and urinary incontinence (UI) in a large sample (25 intervention; 23 control) of Iowa NHs. The 5 year study was funded by NINR (NINR 1R01NR009678-01A2 REVISED) (Specht, Mobily, & Bossen, 2012). The MTRAIN intervention incorporated specific elements targeted for NHs, administrators, and staff shown to promote the use of EBPs, and included additional elements that are based on Roger's Adoption and Diffusion model, Translation Research and empowerment. A two group, pre and posttest, experimental strategy with repeated measures was employed for testing the effects of the M-TRAIN intervention.

Findings confirmed the importance of changing attitudes and leadership. A survey (Meyer & Goes, 1988) was used to assess staff perception of the use of evidence in practice for pain and UI at baseline, 6 months, one year and 18 months. Meyers and Goes asserted that adoption of change in organizations begins when organizational members perceive that change is present within the organization. Thus, staff's awareness or their perception of the use of research findings in their nursing practice may be an important indicator of the initiation of EBP adoption. There was an intervention effect from baseline to 12 months for perception of the use of research in practice for both pain ($p = <.001$) and UI ($p = <.001$). There was a positive trend in the use of research evidence in care of elders with pain in facilities with high adoption scores. Several significant findings were demonstrated in relation to the importance of leadership adoption of research evidence. The distinction between lead-

ership behavior (LB) and leadership style (LS) is that of who is doing the rating: leadership behavior (LB) is the staff's rating of their supervisor's leadership behavior while leadership style (LS) is the rating of the leader rating their own behavior. The findings reflect a discrepancy between staff and supervisory perception of leadership that may hinder overall organizational climate and adoption of new practices. In general, staff perceptions regarding their supervisor's leadership behavior (LB) was lower than the self-perceptions of the leader (LS). On the staff surveys of staff rating behavior of their leaders (LB) and LS (leadership style), findings indicated in those facilities that demonstrated a larger gap between LB and LS had significant differences in organizational climate ($p = .02$). When this gap occurred, there was also a significant difference for leadership behavior ($p = .04$) and in perceptions of EBP use for pain management ($p = .04$). LS had a positive main effect on all measures. The higher the leadership style, the higher the other measures. For the EBP measures, there is also time by LS interaction, which indicates that change over time was higher if leadership style score was higher, again highlighting the importance of leadership.

The stability of the nurse leaders Director of Nursing (DON) also played an important role in EBP adoption. Adoption scores were negatively correlated to DON turnover ($r = -.43, p = .03$) and the number of citations at T3 ($r = -.45, p = .03$). Turnover for DONs was correlated positively to turnover in staff ($r = .55, p = .01$) so it was harder to have staff stability to implement EBP. DON turnover was significantly negatively correlated with DON's perception of their leadership style ($p = .03$); indicating that the lower they rated their own leadership style, the more they tended to leave positions. Higher stay rates (retention) have better sustainability of the intervention effect.

Characteristics of high adopters were examined to help determine what is needed for successful adoption of EBP. There were no significant differences between high ($n = 12$) and low adopters ($n = 13$) relative to the following facility characteristics when using the adoption score as a dichotomous variable: size, location, QIs, citations, staff demographics, staff to resident ratio, staff turnover and staff retention rate. High adopter sites were significantly more likely to be Continuing Care Retirement Communities (CCRCs) and to maintain resident councils. DON turnover rate and the twelve-month citation rate were negatively correlated with intervention site adoption scores, suggesting that stable leadership is linked to a greater likelihood of adoption of EBPs. Qualitative findings from staff focus groups illustrated that building policy, creating supportive environments, strengthening leadership, developing individual skills,

and empowering staff are critical activities in the adoption process. NHs who have higher stay rates (retention) have better sustainability of the intervention effect, work empowerment, organizational climate, leadership style, and EBP perception for pain, suggesting better potential for improved resident outcomes.

CONCLUSION

In conclusion, there is a pressing need to implement the use of evidence based practice in long term care to assure elders and their families that they will receive care based on the best knowledge and practices available. This means there is a need to know what the evidence is, how to access it and how to apply it in practice. There is clear evidence that patients and the health care system benefit from the use of evidence based practice. There is growing evidence about best ways to translate that evidence into practice and a critical need to assure that we measure patient outcomes to assure that we are getting the desired results from evidence based practice.

REFERENCES

- Abbott, S., & Hotchkiss, J. (2001). It takes more than clinical effectiveness to change nursing practice: An unsuccessful project in the nurse promotion of urinary continence. *Clinical Effectiveness in Nursing*, 5(2), 81-87.
- Agency for Healthcare Research and Quality. (2001, March). *Translating research into practice (TRIP)-II*. Retrieved August 18, 2005, from <http://www.ahrq.gov/research/findings/factsheets/translating/tripfac/index.html>
- Armellino, D., Quinn Griffin, M. T., & Fitzpatrick, J. J. (2010). Structural empowerment and patient safety culture among registered nurses working in adult critical care units. *Journal of Nursing Management*, 18(7), 796-803. <http://dx.doi.org/10.1111/j.1365-2834.2010.01130.x>
- Berman, A., Mezey, M., Kobayashi, M., Fulmer, T., Stanley, J., Thornlow, D., et al. (2005). Gerontological nursing content in baccalaureate nursing programs: Comparison of findings from 1997 and 2003. *Journal of Professional Nursing*, 21(5), 268-275. <http://dx.doi.org/10.1016/j.prof-nurs.2005.07.005>
- Bland, D. R., Dugan, E., Cohen, S. J., Preisser, J., Davis, C. C., McGann, P. E., et al. (2003). The effects of implementation of the Agency for Health Care Policy and Research urinary incontinence guidelines in primary care practices. *Journal of the American Geriatrics Society*, 51(7), 979-984.
- Brazil, K., Royle, J. A., Montemuro, M., Blythe, J., & Church, A. (2004). Moving to evidence-based practice in long-term care: The role of a Best Practise Resource Centre in two long-term care settings. *Journal of Gerontological Nursing*, 30(3), 14-19.
- Campbell, S. L. (2003). Empowering nursing staff and residents in long-term care. *Geriatric Nursing (New York, NY)*, 24(3), 170-175.

- Castle, N. G. (2001). Innovation in nursing homes: Which facilities are the early adopters? *Gerontologist*, 41(2), 161-172.
- Conger, J. A., & Kanungo, R. N. (1988). The empowerment process: Integrating theory and practice. *The Academy of Management Review*, 13(3), 471-482.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, 74(4), 580-590.
- Estabrooks, C. A., Floyd, J. A., Scott-Findlay, S., O'Leary, K. A., & Gushta, M. (2003). Individual determinants of research utilization: A systematic review. *Journal of Advanced Nursing*, 43(5), 506-520.
- Feldman, P. H., & Kane, R. L. (2003). Strengthening research to improve the practice and management of long-term care. *Milbank Quarterly*, 81(2), 179-220, 171.
- Frantz, R. A., Gardner, S., Specht, J. K., & McIntire, G. (2001). Integration of pressure ulcer treatment protocol into practice: Clinical outcomes and care environment attributes. *Outcomes Management for Nursing Practice*, 5(3), 112-120.
- Gecas, V. (1989). The social psychology of self-efficacy. *Annual Review of Sociology*, 15, 291-316. <http://dx.doi.org/10.1146/annurev.so.15.080189.001451>
- Greenberger, D. B., & Strasser, S. (1986). Development and application of a model of personal control in organizations. *The Academy of Management Review*, 11(1), 164-177.
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *Milbank Quarterly*, 82(4), 581-629. <http://dx.doi.org/10.1111/j.0887-378X.2004.00325.x>
- Gross, P. A., Greenfield, S., Cretin, S., Ferguson, J., Grimshaw, J., Grol, R., et al. (2001). Optimal methods for guideline implementation: Conclusions from Leeds Castle meeting. *Medical Care*, 39(8 Suppl 2), I185-I192.
- Gutierrez, L. M. (1994). Beyond coping: An empowerment perspective on stressful life events. *Journal of Sociology and Social Welfare*, 21(3), 201-220.
- Herr, K., Bursch, H., Ersek, M., Miller, L. L., & Swafford, K. (2010). Use of pain-behavioral assessment tools in the nursing home: Expert consensus recommendations for practice. *Journal of Gerontological Nursing*, 36(3), 18-29. <http://dx.doi.org/10.3928/00989134-20100108-04>
- Hollinger-Smith, L., Lindeman, D., Leary, M., & Ortigara, A. (2002). Building the foundation for quality improvement: LEAP for a quality long-term care workforce. *Seniors Housing & Care Journal*, 10(1), 31-43.
- Hollinger-Smith, L., & Ortigara, A. (2004). Changing culture: Creating a long-term impact for a quality long-term care workforce. *Alzheimer's Care Quarterly*, 5(1), 60-70.
- Hysong, S. J., Best, R. G., & Pugh, J. A. (2006). Audit and feedback and clinical practice guideline adherence: Making feedback actionable. *Implementation Science*, 1, 9. <http://dx.doi.org/10.1186/1748-5908-1-9>
- Jacobsen, S. M., Stickler, D. J., Mobley, H. L., & Shirtliff, M. E. (2008). Complicated catheter-associated urinary tract infections due to *Escherichia coli* and *Proteus mirabilis*. *Clinical Microbiology Reviews*, 21(1), 26-59. <http://dx.doi.org/10.1128/cmr.00019-07>
- Jones, K. R., Fink, R., Vojir, C., Pepper, G., Hutt, E., Clark, L., et al. (2004). Translation research in long-term care: Improving pain management in nursing homes. *Worldviews on Evidence-Based Nursing*, 1(Suppl 1), S13-S20. <http://dx.doi.org/10.1111/j.1524-475X.2004.04045.x>
- Kanter, R. M. (1977). *Men and women of the corporation*. New York, NY: Basic Books.
- Laschinger, H. K. S., Finegan, J., Shamian, J., & Wilk, P. (2004). A longitudinal analysis of the impact of workplace empowerment on work satisfaction. *Journal of Organizational Behavior*, 25(4), 527-545. <http://dx.doi.org/10.1002/job.256>
- Lekan-Rutledge, D. (2000). Diffusion of innovation. A model for implementation of prompted voiding in long-term care settings. *Journal of Gerontological Nursing*, 26(4), 25-33.
- Loeb, M., Brazil, K., Lohfeld, L., McGeer, A., Simor, A., Stevenson, K., et al. (2002). Optimizing antibiotics in residents of nursing homes: Protocol of a randomized trial. *BMC Health Services Research*, 2(1), 17.
- Melnik, B. M., Fineout-Overholt, E., Gallagher-Ford, L., & Kaplan, L. (2012). The state of evidence-based practice in US nurses: Critical implications for nurse leaders and educators. *Journal of Nursing Administration*, 42(9), 410-417. <http://dx.doi.org/10.1097/NNA.0b013e3182664e0a>
- Meyer, A. D., & Goes, J. B. (1988). Organizational assimilation of innovations: A multilevel contextual analysis. *The Academy of Management Journal*, 31(4), 897-923.
- Miley, K. K., O'Melia, M., & DuBois, B. (1988). *Generalist social work practice: An empowering approach* (2nd ed.). Boston, MA: Allyn and Bacon.
- National Institutes of Health. (2011, March 21-22). *4th Annual NIH Conference on the science of dissemination and implementation: Policy and practice*. Bethesda, MD: Author.
- Offermann, L. R. (2004). Empowerment. In J. M. Burns, G. R. Goethals, & G. Sorenson (Eds.), *Encyclopedia of leadership*. (pp. 434-437) Berkshire Publishing Group/Sage.
- Parmelee, P. A. (2004). Quality improvement in nursing homes: The elephants in the room. *Journal of the American Geriatrics Society*, 52(12), 2138-2140.
- Rantz, M. J., Popejoy, L., Petroski, G. E., Madsen, R. W., Mehr, D. R., Zwygart-Stauffacher, M., et al. (2001). Randomized clinical trial of a quality improvement intervention in nursing homes. *Gerontologist*, 41(4), 525-538.
- Reinhard, S., & Stone, R. (2001). *Promoting quality in nursing homes: The wellspring model*. New York, NY: The Commonwealth Fund.
- Resnick, B., Quinn, C., & Baxter, S. (2004). Testing the feasibility of implementation of clinical practice guidelines in long-term care facilities. *Journal of the American Medical Directors Association*, 5(1), 1-8.
- Richards, K., & Beck, C. (2002). Translating nursing home research into practice: How and for whom? *Journal of the American Geriatrics Society*, 50(9), 1595-1596.
- Roe, B., Watson, N. M., Palmer, M. H., Mueller, C., Vinsnes, A. G., & Wells, M. (2004). Translating research on incontinence into practice. *Nursing Research*, 53(6 Suppl), S56-S60.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
- Schnelle, J. F., Alessi, C. A., Simmons, S. F., Al-Samarrai, N. R., Beck, J. C., & Ouslander, J. G. (2002). Translating clinical research into practice: A randomized controlled trial of exercise and incontinence care with nursing home residents. *Journal of the American Geriatrics Society*, 50(9), 1476-1483.
- Specht, J. K. (2005). 9 myths of incontinence in older adults: Both clinicians and the over-65 set need to know more. *American Journal of Nursing*, 105(6), 58-68.

- Specht, J. K., Horras, S., & Mobily, P. R. (2006). *Lessons learned from a pilot test of an intervention to increase the adoption of evidence-based practices in NHs*. Iowa City, IA: John A. Hartford Center of Geriatric Nursing Excellence.
- Specht, J. K., Mobily, P. R., & Bossen, A. (2012). *Improving continence & pain control in LTC: The multi-level translation application in nursing homes intervention (MTRAIN)* (No. 1R01NR009678-01A2 Revised). Bethesda, MD: NIH Research Portfolio Online Reporting Tools (RePORT).
- Spreitzer, G. M. (1996). Social structural characteristics of psychological empowerment. *Academy of Management Journal*, 39(2), 483-504.
- Thomas, L. H., Cullum, N. A., McColl, E., Rousseau, N., Soutter, J., & Steen, N. (2000). Guidelines in professions allied to medicine. *Cochrane Database of Systematic Reviews*, (2), CD000349. <http://dx.doi.org/10.1002/14651858.cd000349>
- Titler, M. G. (2004). Methods in translation science. *Worldviews on Evidence-Based Nursing*, 1(1), 38-48. <http://dx.doi.org/10.1111/j.1741-6787.2004.04008.x>
- Titler, M. G., & Everett, L. Q. (2001). Translating research into practice. Considerations for critical care investigators. *Critical Care Nursing Clinics of North America*, 13(4), 587-604.
- Titler, M. G., & Kerr, P. (2002). How to teach toward evidence based practice. *Excellence in Nursing Education and Research*, 3(1), 1-4.
- VeneKlasen, L., & Miller, V. (2002). Power and empowerment. In A. Milligan (Ed.), *The action guide for advocacy and citizen participation* (pp. 39-58). Nottingham, UK: Russell Press.
- Wagner, E. H., Austin, B. T., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: Translating evidence into action. *Health Affairs*, 20(6), 64-78.
- Watson, N. M. (2004). Advancing quality of urinary incontinence evaluation and treatment in nursing homes through translational research. *Worldviews on Evidence-Based Nursing*, 1(Suppl 1), S21-S25. <http://dx.doi.org/10.1111/j.1524-475X.2004.04043.x>
- Watson, N. M., Brink, C. A., Zimmer, J. G., & Mayer, R. D. (2003). Use of the Agency for Health Care Policy and Research Urinary Incontinence Guideline in nursing homes. *Journal of the American Geriatrics Society*, 51(12), 1779-1786.
- Weissman, D. E., Griffie, J., Muchka, S., & Matson, S. (2001). Improving pain management in long-term care facilities. *Journal of Palliative Medicine*, 4(4), 567-573. <http://dx.doi.org/10.1089/109662101753381755>
- Wipke-Tevis, D. D., Williams, D. A., Rantz, M. J., Popejoy, L. L., Madsen, R. W., Petroski, G. F., et al. (2004). Nursing home quality and pressure ulcer prevention and management practices. *Journal of the American Geriatrics Society*, 52(4), 583-588. <http://dx.doi.org/10.1111/j.1532-5415.2004.52166.x>
- World Health Organization. (2012). *Knowledge translation framework for ageing and health: A framework for policy development*. Retrieved Nov 3, 2012, from http://www.who.int/ageing/publications/knowledge_translation/en/index.html