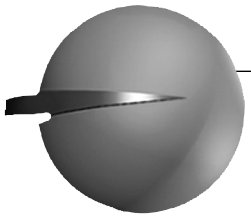

Original Article

Leadership for Evidence-Based Practice: Strategic and Functional Behaviors for Institutionalizing EBP

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ABSTRACT

Background: Making evidence-based practice (EBP) a reality throughout an organization is a challenging goal in healthcare services. Leadership has been recognized as a critical element in that process. However, little is known about the exact role and function of various levels of leadership in the successful institutionalization of EBP within an organization.

Aims: To uncover what leaders at different levels and in different roles actually do, and what actions they take to develop, enhance, and sustain EBP as the norm.

Methods: Qualitative data from a case study regarding institutionalization of EBP in two contrasting cases (*Role Model* and *Beginner* hospitals) were systematically analyzed. Data were obtained from multiple interviews of leaders, both formal and informal, and from staff nurse focus groups. A deductive coding schema, based on concepts of functional leadership, was developed for this in-depth analysis.

Results: Participants' descriptions reflected a hierarchical array of strategic, functional, and cross-cutting behaviors. Within these macrolevel "themes," 10 behavioral midlevel themes were identified; for example, Intervening and Role modeling. Each theme is distinctive, yet various themes and their subthemes were interrelated and synergistic. These behaviors and their interrelationships were conceptualized in the framework "Leadership Behaviors Supportive of EBP Institutionalization" (L-EBP). Leaders at multiple levels in the Role Model case, both formal and informal, engaged in most of these behaviors.

Linking Evidence to Action: Supportive leadership behaviors required for organizational institutionalization of EBP reflect a complex set of interactive, multifaceted EBP-focused actions carried out by leaders from the chief nursing officer to staff nurses. A related framework such as L-EBP may provide concrete guidance needed to underpin the often-noted but abstract finding that leaders should "support" EBP.

BACKGROUND

It has been increasingly recognized that context is a critical element in the successful implementation of evidence into practice (Damschroder et al., 2009). The majority of implementation models and frameworks addressing context contain the concept of leadership, and its incorporation into these frameworks is based on empirical or theoretical support for its influence (Damschroder et al., 2009).

Although research reviews and primary studies do exist, empirical support within nursing regarding leadership for evidence-based practice (EBP) is limited, most particularly when the focus is institutionalization. Institutionalization of EBP is defined as integration of the use of evidence into the very fabric or structure of a clinical organization. As a result, EBP becomes the organizational norm; that is, a routine or pervasive way of doing things (Stetler, Ritchie, Rycroft-Malone, Schultz, & Charns, 2009; see Appendix 1, available with online version of this article).

There are few studies reporting how leadership influences the implementation of EBP in nursing (Sandstrom, Borglin, Nilsson, & Willman, 2011). In the latter´s review of these studies it was found that leadership was poorly defined, and only two studies explicitly focused on leadership-related EBP behaviors, making it difficult to specify those that are critical.

Primary studies that do provide some information on explicit, conceptually organized leadership behaviors (e.g., Gifford, Davies, Edwards, & Graham, 2006; Gifford et al., 2013; Versteeg, Laurant, Franx, Jacobs, & Wensing, 2012) usually focus on project-related EBP activity (e.g., use of a guideline) and

not the institutionalization of EBP (i.e., making EBP part of the everyday work and thus a normative behavior throughout the organization).

In an EBP institutionalization study conducted by the authors (Stetler et al., 2009), leader behaviors were identified as important. However, these were not reported in depth or with consideration to how they might be organized conceptually. In that study, cases were purposively chosen to highlight contrasting contexts; that is, an EBP successful Role Model and a Beginner organization on the institutionalization journey. The most significant, receptive contextual element identified in the Role Model was "key people leading change."

Outside of nursing, the importance of leadership in context-related healthcare projects has been recognized (Lukas et al., 2007; Versteeg et al., 2012). However, behavioral details again are lacking.

In summary, within health care, there has been insufficient research regarding explicit leader behaviors needed to enhance EBP and its institutionalization. There have been numerous calls for more research and to fill this gap, we report further analyses from the above-mentioned case study exploring detailed leadership behaviors essential for institutionalization of EBP.

Study Purpose and Framework

This exploration sought to: (a) identify explicit, pragmatic behaviors used by EBP supportive leaders, as key people leading change at multiple levels within an organization, to facilitate and maintain EBP within both individual projects and the organization overall; and (b) describe who the EBP supportive leaders were: that is, formal or informal leaders and in which levels or roles.

To facilitate more in-depth identification and organization of EBP-related leadership behaviors, as well as tie this study to prior evidence and theory, we searched frameworks in general management and EBP literatures. Descriptions of functional leadership theory, for example, Morgeson, DeRue, and Karam (2010), highlight how a leader does or should behave, and often focus on task-accomplishment, team-, relations-, or operations-oriented behaviors. We chose to build on this type of framework, particularly the summary work of Klein, Ziegert, Knight, and Xiao (2006) that identified five "broad" leader functions: (a) structuring and directing; (b) intervening actively; (c) monitoring; (d) motivating and inspiring; and (e) teaching, coaching, and training.

METHODS

Our overall approach was a mixed methods explanatory case study of EBP institutionalization in two contrasting cases: a Role Model and a Beginner. A *Role Model* was defined as an acute care hospital "widely recognized to have a nursing service using a deliberate approach to build the capacity to successfully implement, sustain, and 'normalize' EBP activity" and to have demonstrated that "capacity to a greater degree than other nursing services in the US" (Stetler et al., 2009). A *Beginner* was defined as a comparable acute care hospital early in the formalized journey to institutionalization. See Table 1 for detail regarding the study's overall methodology.

Two overlapping but distinct sets of findings resulted from this study. The first set (Stetler et al., 2009) drew upon all data sources and focused on key contextual elements and strategic processes that support and facilitate institutionalizing EBP. This paper focuses only on leadership, which was the most significant contextual element ("key people leading change") identified in the first set of findings. It drew upon data in our NVivo 8 (QSR International Pty. Ltd., Doncaster, Australia) qualitative database from interviews and focus groups; and involved a mainly deductive content analysis of detailed leader behaviors based upon our functional leadership coding scheme.

Initial codes, henceforth termed "themes," were developed as an adaptation of Klein et al.'s (2006) "broad functions." Modifications were made based on existing literature, for example, Morgeson et al. (2010). These modified functional themes were as follows: (a) Organizing EBP-related activities, (b) Modifying additional unit or organizational infrastructures to align with EBP vision and objectives, (c) Intervening actively in EBP work, (d) Monitoring the EBP environment, (e) Motivating others for EBP, (f) Teaching and coaching regarding EBP, and (g) Communicating and sense making regarding EBP and its progress. Each of these themes was populated with subthemes describing categories of more specific, directly observable behaviors focused on EBP and its institutionalization. An "Other " category was used to capture emerging issues.

Coding and Thematic Analysis

During the beginning stage of coding, the above scheme was used to recode initial data sets (Stetler et al., 2009). To enhance reliability of coding by the primary coder (CBS), another team member (JAR) independently coded a subset of data; the two coders then discussed differences and reached agreement. This increased consistency or accuracy of coding and helped refine coding definitions.

As thematic analysis progressed, the full team reviewed an evolving summary for each broad "function" or theme. This included definitions, associated raw coded data, detailed synopses of key types of leader behaviors, and general observations regarding each theme. As a result of this intense, team-level review, our initial thinking evolved and the coding scheme was further modified and expanded. In addition to new and merged themes, we found a set of higher order or macro themes.

The Boston University Medical Campus Institutional Review Board, and where required other institutional review boards, provided approval for this study.

RESULTS

EBP supportive leader behaviors were identified throughout the Role Model and within the few key people leading EBP change in the Beginner. We found a complex hierarchical

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Table 1. Key Methods in the Overall Case Study (see Stetler et al., 2009)

- Sample = "Case" = department of nursing within a hospital
  - Two cases were purposely selected to provide "contrasting results for predictable reasons": a *Role Model*, chosen based on a systematic, criteria-based process involving a nominations panel from the American Organization of Nurse Executives [AONE]; a *Beginner*, chosen and matched from self-rated (with rationale) AONE member volunteers
  - Within case samples:
    - Staff nurses from three embedded units
    - Leaders: Formal (managers) and Informal (individuals potentially key to EBP, such as various specialists and designated staff nurses)
- Frameworks:
  - Receptive (i.e., supportive) contexts for change (Pettigrew et al., 1992)
  - Functional leadership (Klein et al., 2006)
- Data collection (2007) and analysis/triangulation:
  - Leader interviews: 30 Role Model; 29 Beginner
  - Staff nurse focus groups: 9 Role Model; 5 Beginner
  - Document reviews, group observations and surveys

array of supportive behaviors that went beyond the highly useful but more pragmatic Functional concept (i.e., the single term "Functional" did not sufficiently convey the importance of either strategic or other far-reaching leader actions).

We developed a refined conceptualization of EBP leadership having three levels, beginning with a set of more abstract, higher order or "macro" themes: Functional, Strategic, and Cross-Cutting behaviors. These abstract themes all included midlevel themes, which reflected general operational categories of behaviors as well as subsets of detailed, recurrent leader actions (subthemes) centering on a common purpose (see Appendix 2: Outline of Themes-Levels available with online version of this article).

As described later, each macro and related midlevel theme, with subthemes where relevant, was distinctive. Yet, overall, all of the themes were interrelated and synergistic. Supportive leaders at all levels in the Role Model site, including those in both formal and informal roles, engaged in most types of described behaviors.

Strategic Leadership Behaviors

Leaders engaged in Strategic behaviors related to one theme, Planning-Organizing-Aligning, which demonstrated underlying vision-focused and systems-oriented thinking. As standard definitions of planning, organizing, and aligning are lacking, and there is overlap of their related behaviors, these concepts were not treated as mutually exclusive.

Strategic behaviors primarily reflected actions by the Role Model's Chief Nursing Officer (CNO) and a key support service director. These key leaders conceived an EBP vision; explicitly and repeatedly articulated its importance; and planned for its operationalization and sustainment. As one informal leader (Table 1) reported, "she's [CNO] ... got a vision like nobody else in the role has, that I've ever ever met in nursing."

Development of this "strategic" plan consisted of a goal-focused, unswerving set of congruent actions that evolved over time, rather than as a written plan developed at a single point in time. We regard it as strategic because it was multifaceted, considered actions to be taken over time, and addressed organizational factors affecting both project-level success and changes in the organizational context for ongoing EBP rather than for any single project or limited EBP.

These leaders established and maintained normative and cultural expectations; a set of infrastructures; and cultural artifacts, such as documents regarding EBP role requirements, journal clubs, and EBP language. EBP language refers to use of terminology in daily conversations reflecting a focus on use of evidence in practice; for example, *best evidence*, *levels of evidence*, and *research-based policies*. Concomitantly, "*EBP*" was an integral part of routine conversations: "you hear it ... everywhere you go, that we talk about EBP" [informal staff nurse leader].

Strategic behaviors also included responsiveness to emerging or EBP-inhibiting issues; that is, targeted infrastructures were added or realigned on an ongoing basis to help achieve and sustain the EBP vision. Over time these Strategic leaders thus deliberately established an environment with EBP components that routinely guided, required, and enabled EBP-related behavior by managers and staff; for example, through evidence-based policies, integration of EBP behavior into position

expectations, and formal EBP supportive roles such as "staff nurse champions."

Functional Leadership Behaviors

Formal and informal leaders across all levels of the Role Model organization enacted key, practical behaviors critical to routine operationalization of the Strategic plan. Over time, these behaviors made the vision of "EBP as the norm" come alive. They also exemplified leadership actions required both to manage and sustain subordinates' focus on EBP and to maintain a related EBP-supportive environment. Participants described six types of these Functional leadership behaviors.

Inspiring and inducing. These behaviors were geared to activating, motivating, encouraging, and engaging others in EBP. This could be in the form of a carrot or stick and involved both administrative actions and relational behaviors. They helped operationalize core expectations that could otherwise have remained as verbiage or document-based announcements. Administratively, for example, managerial leaders overtly recognized and reinforced expected EBP behaviors (or lack thereof) in performance evaluations and used discretionary funds to enable participation in external EBP-related activities. Relational behaviors involved more informal, interpersonal actions and were used to inspire motivation in a staff member or perhaps "give them a spark" (Nurse Manager) to participate.

Leaders across multiple levels in the Role Model clearly exhibited inspiring and inducing behaviors. They spoke in terms of "strongly urging" and "involving" staff; and then described diverse ways of championing specific EBP-related activities and empowering staff to pursue EBP, as well as ways for departmental members to be engaged in and rewarded or recognized for EBP. For example, one informal staff nurse leader said, "we have some staff that were consistently, always doing it . . . so we [self & Nurse Manager] tried to praise them in front of everyone," whereas a Director noted, a "[staff nurse] actually approached me when I was manager of the ICU and said 'There are so many things I want to do, . . . there's so much research . . . out there on how we can be doing things better, can I do projects?' . . . So I went to [CNO] and said 'This staff nurse has approached me with this fabulous idea, could we kind of do a budget neutral position?' . . . And CNO said 'Try it.'"

Intervening actively and involving one's self in EBP. These Functional leadership behaviors relate to personal, hands-on involvement in real-time EBP activities. They also relate to the concept of being visible and are an indication of being directly and operationally supportive of EBP. Core intervening/involving behaviors included: (a) leading organized EBP-related activities; (b) participating as an active member in others' EBP-related activities; and (c) responsively providing concrete and tangible support to others, in terms of observed or requested EBP needs.

All levels of leaders "walked the talk" by leading and participating in EBP activities; and all, except the informal staff nurse leaders who had neither authority nor resources at hand, provided assistance in response to barriers and requests from others so engaged. The high level of intervening behaviors in the Role Model site was generally indicated by the multiple leaders who initiated, enacted, and engaged others in evidence-based journal clubs and formal EBP projects.

Educating or developing and Role modeling. These Functional behaviors helped others learn about EBP and the "how to's" of achieving it. Educating or developing behaviors focused on specific content and methods of delivery, whereas Role modeling behaviors were more personal or relational and consistently conveyed the desired culture, values, and expectations.

Educating or developing leadership behaviors were explicitly focused on increasing individuals' EBP awareness, knowledge, and skills. One example of formal educating or developing behavior was noted by a key support director: "CNO and I started [and taught] introduction to EBP as a course . . . [for] all nursing leadership." More informal educating or developing behaviors occurred in purposeful interactions or targeted project-related exchanges. These actions focused on helping someone conduct a project and involved so-called "guiding," "mentoring," and "coaching." Leaders most often cited as "mentors or coaches" were the CNO, Nurse Managers, and Advanced Practice Nurses (APNs).

Role modeling included a complex repertoire of EBP-related behaviors, in part clarified through reference to the broader health profession and management literature. Such behaviors demonstrated the expected norm and enabled others to learn and value those norms through watching, repeatedly hearing, and discussing EBP with the leader. Two types of Role modeling were identified, each exemplifying "leading by example": (a) systematic, intentional use of EBP-related behaviors that modeled EBP programs or processes in formal interactions (e.g., committees or coaching sessions) and were used, as Sims and Manz (1982) also describe, to influence others' understanding of new behaviors, increase the frequency of their use of such behaviors, or cue them about expected behavior; and (b) less systematic and informal use of EBP-related behaviors within day-to-day situations that showed the leader's routine "way of doing things." The latter type of behavior implicitly modeled the expected norm and demonstrated related EBP processes.

There were multiple examples of leaders at all levels being role models by using and doing EBP during routine interactions. These leaders, having embraced the EBP norm, simply behaved this way. They routinely talked about evidence, searched for evidence, participated in efforts to get evidence used, conducted successful EBP projects, and used evidence to solve problems or persuade others to adopt a change.

Monitoring/providing feedback or seeking insights and Implementing specific EBP projects. In the Role Model case, these Functional behaviors were primarily aimed at monitoring and implementing EBP projects. In terms of EBP monitoring, related critical leadership behaviors in the Role Model site focused on keeping an eye or ear on the overall departmental (vs. an individual) EBP effort and included the following:

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routine and EBP project-focused measuring, with considerable attention to auditing; a general seeking out of information on targeted EBP progress and issues; and the routine provision of aggregate observations and data regarding general indicators and progress on EBP to groups of staff.

The Implementing theme emerged inductively as participants described leadership behaviors intended to facilitate adoption of project-related evidence. This involved selecting and using implementation processes and tools to encourage or require uptake of a targeted practice change (Appendix 3: Tools and processes available with the online version of this article).

Notably the Role Model's informal staff nurse leaders were key players in both of these behaviors; for example, some staff nurse leaders led unit-based monitoring and reporting activities; others led unit evidence-based quality projects; and numerous staff nurses served as a formal, unit-based champion or facilitator. The Beginner site had no such pervasive, officially recognized EBP functions or roles for staff nurses.

Cross-Cutting Leadership Behaviors

In the Role Model organization, participants described three distinct sets of EBP-related behaviors in a way that made it clear that, collectively, this group of actions represented another distinctive, higher order or macro theme. Each of these sets of behaviors were embedded within and flowed through both strategic and functional behaviors and thus were "Cross-cutting." Such actions were observed when an individual leader's behavior simultaneously had widespread effects or multiple explicit or implicit aims.

Strategic thinking. Although "thinking" is not a directly observable behavior, data revealed the critical nature of a precursor to decision-making and to directly observable action in certain leaders, particularly the CNO and some directors and nurse managers. These leaders demonstrated an ongoing, deliberate, thoughtful approach to actualizing their conceived EBP vision. Such behavior is best described as "a sense of strategic intent and purpose embedded in the minds of managers ... that guides their choices [and therefore, we would add, their actions] on a daily basis" (Liedtka, 1998). Such intent seemed to enable these leaders "to marshal and leverage their energy, to focus attention, to resist distraction, and to concentrate for as long as it takes to achieve a goal" (Liedtka, 1998). One example of a strategically thoughtful approach in a leader was voiced by a key director:

> We have an annual (skills) verification of EBP that every single person with an RN ... does, because I sat there one night thinking, how can my educators and I develop these annual skills and not include EBP if indeed we're viewing that as important ....

Communicating. This was a pervasive, critical behavior observed throughout multiple leadership themes in two forms: strategic or functional. Strategically communicating, verbally or in documents, reflected intent to influence the EBP norm and transformation. Leaders thereby used targeted EBP language, introduced and consistently discussed the EBP vision, and made recurrent references to new expectations regarding EBP. Functionally communicating, either verbally or in documents, reflected task- or operational-oriented actions for more immediate ends. This was more targeted on increasing others' awareness, knowledge, or attitude and thus behavior; for example, discussions or presentations regarding a new evidence-based goal.

Building and sustaining an EBP supportive culture. An EBP supportive culture was a goal of the institutionalization change process. Related EBP values, norms, artifacts, and expectations reflective of such a culture therefore needed to be identified or created and inculcated into behaviors. In the Role Model, leaders deliberatively influenced, through many differently themed leadership behaviors, the way things were to be done in the organization consistent with EBP. Participants thus described leader actions that helped to create an EBP culture, including role modeling, educating, planning-organizing-aligning, and communicating. For example, the CNO was reported as deliberately trying "to create a culture where it's part of your job, it's not something else that somebody does"; and leaders were said to deliberately and routinely talk about and demonstrate desired EBP behaviors.

Patterns Across Themes and the "Leadership Behaviors Supportive of EBP Institutionalization" Framework

Although each of the macro- and midlevel themes outlined had a distinctive focus and behavioral intent, there was a dynamic interaction among and across them. A set of behaviors within a leader's individual action was often multifaceted, with several aims or effects including establishing preconditions for subsequent, differently themed actions. A leader may, for instance, simultaneously educate, role model, and inspire engagement within one interaction with staff. Such interactive behaviors seem to reinforce one another, even though one behavior or theme may be a leader's primary intent in a given context. In a similar example, a leader can intervene by initiating an EBP activity and, simultaneously, educate or develop others. As one Nurse Manager said "I'm mentoring two of my staff to go to a level 3, ... so ... they're just going to help me with ... [her project]." This is consistent with the observation that "actual behaviors often involve more than one type of objective" (Yukl, Gordon, & Taber, 2002, p. 29).

In summary, unique types of leadership themes and related behaviors emerged from the data that synergistically interacted with other unique types of leadership themes and their related behaviors to form a pattern of overall EBP support. Figure 1 is a visual summary of an explanatory framework—"Leadership Behaviors Supportive of EBP Institutionalization" (L-EBP"—that represents this dynamic nature of EBP-related behaviors involved in achieving and sustaining EBP as the norm. It illustrates interactive, intertwining relationships; the

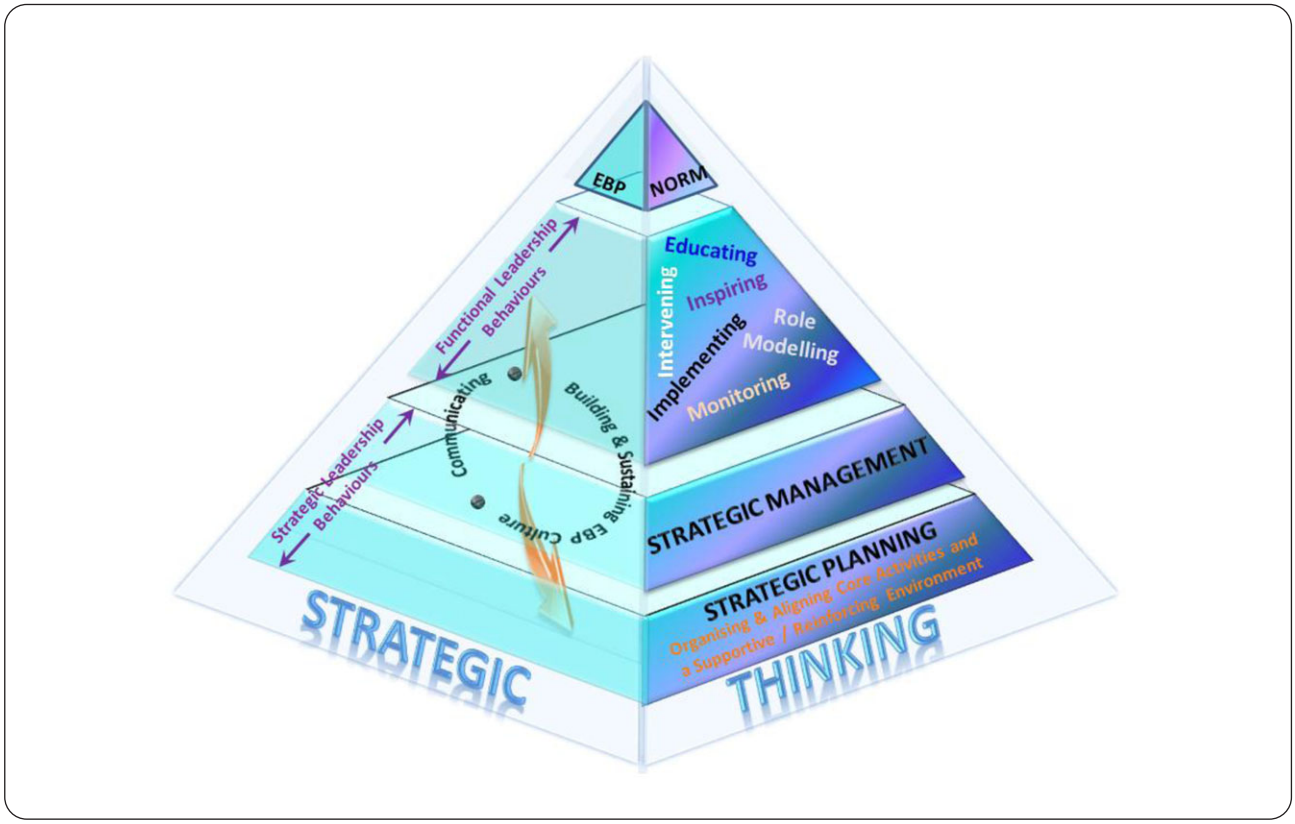

Figure 1. L-EBP, leadership behaviors supportive of EBP institutionalization.

multiplicity of leader behaviors required; and the critical, continuous, and overarching role of Strategic thinking. The framework highlights our observation that during Strategic-focused planning-organizing-aligning for EBP activation, leaders need to think strategically about how to and how they are managing execution of their EBP vision or plan. Such management is operationalized in the form of individual Functional leadership behaviors and aspects of communicating and building culture behaviors. Without such attention to operationalization of strategic plans, actualization of a vision is not likely to occur or be sustained. To highlight the importance of this implicit link between strategic planning and action, strategic management is independently highlighted in the framework.

DISCUSSION

The findings of this study, while applicable to guideline-level activity, specifically focus on organizational transformation related to institutionalization of EBP. They led to a taxonomy (Appendix 2 available with online version of this article) and replicable, operational definitions of related strategic, functional, and cross-cutting leadership behaviors "supportive" of EBP. Our findings also illuminate the involvement of all levels of organizational leaders in the institutionalization of EBP; both formal and informal, from administrators to staff nurses.

Few studies have focused on detailed, explicit leadership behaviors at multiple levels related to EBP implementation; even fewer have focused on EBP institutionalization. Gifford et al. (2006, 2013) and Ploeg, Davies, Edwards, Gifford, and Miller (2007) did focus on leadership behaviors; and in each case the authors also used broad categories to conceptually organize and outline related findings. Although these studies focused primarily on formal EBP leadership relative to guideline implementation, they provide organized sets of behaviors to compare with our EBP supportive leadership behavior themes. In reviewing details of their collective work, commonalities with L-EBP were found (Appendix 4 available with online version of this article). For example, various L-EBP wordings connote parallel concepts, albeit at different conceptual levels: for example, a "Reinforcing" or "Supporting a vision" category is integrated in our Planning-Organizing-Aligning; plus a "Recognizing" component lies within our Inspiring-Inducing.

Although more testing is needed, L-EBP also resonates with others' work. For example, Lukas et al. (2007) noted similar supportive behaviors of senior leaders, such as removing barriers encountered by project teams; identified alignment as a key driver, as within our Planning-Organizing-Aligning; and observed that leadership at all levels was necessary for effective transformation. Versteeg et al. (2012), in exploring contextual factors related to implementation, noted the potential value of more "inspirational" team leadership, which relates to our Inspiring-Inducing.

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Transformational behaviors, such as those cited by Versteeg et al. (2012) and transformational leadership literature in general, are implicitly "supportive" of change and apparent in our findings. For example, transformational leaders are said to be "highly active and influence subordinates in a positive way"; have a vision; communicate and act upon that vision and related values; focus on individuals concerning, in this case, EBP; and intellectually stimulate through behaviors that help staff "feel internally motivated and empowered" (Rowold & Schlotz, 2009, p. 38).

In addition to transformational behaviors, Role Model site leaders exhibited transactional behaviors such as contingent rewards. Banaszak-Holl, Nembhard, Taylor, and Bradley (2011) suggest both types of behaviors are part of effective leadership. Our current and original findings (Stetler et al., 2009), however, suggest that transactional behaviors, although clearly essential, might be less important than transformational actions for developing contexts that institutionalize EBP. In the Role Model, for example, "transformational" leaders were able to articulate a compelling vision and galvanize collective action, communicate messages in meaningful ways, and operate in an innovative, inclusive, intellectually stimulating manner. Such actions change cultures and have the potential to lead to the development of contexts conducive for organizational change.

In summary, the findings of this study outline and reinforce the dynamic nature of EBP-supportive leader behaviors. They illustrate the need for leaders to strategically and routinely use a range of integrated and transparent behaviors to achieve and sustain EBP as the norm. Supportive leadership behavior for EBP institutionalization is thus not an abstract concept or isolated leader action or objective. Rather, leading successful implementation and maintenance of EBP as a way of life in an organization is complex and multifaceted. It reflects a constellation of interacting, observable, persistent behaviors that are strategic and functional, and often transformational. Such intertwining, multifaceted behaviors need to be enacted over time by leaders, both formal and informal, at multiple levels of an organization.

LIMITATIONS

The aims and objectives of our overall study were not specifically focused on questions of leadership, but more generally on what key contextual elements support the institutionalization of EBP. Therefore, a potential limitation is that our currently described findings could be missing some detail that might have been captured if our original research question was explicitly about leadership behaviors. This limitation is partly mediated by initial use of a conceptual framework that included leadership (Pettigrew, Ferlie, & Mckee, 1992) and by use of interview questions worded to capture the "how, what, and why" of strategic change. The latter often resulted in responses about leadership, which is what led us to the current findings.

Threats to credibility were limited by all team members' involvement in the analysis process. During this process we constantly referenced extant literature and theory to verify or challenge emerging findings. Finally, findings from our leadership analysis should be considered in context of limitations of the full study, including data collection in two sites only (i.e., limits to generalizability) and a lack of access to original historical data and therefore inability to verify verbal accounts beyond available documentation.

LINKING EVIDENCE TO ACTION

- Review leadership actions or day-to-day behaviors and their implications for perceived support or hindrance of EBP.
- Assess who is and who could be a key supportive formal or informal leader for EBP.
- Integrate concepts of strategic thinking relative to EBP into graduate nursing programs.
- Conduct research on and refine detailed EBP supportive leader behaviors.

SUMMARY AND CONCLUSIONS

Our findings identify observable EBP supportive behaviors enacted by multiple levels of leaders; build upon and extend the limited research base regarding such EBP-related behaviors by providing more breadth and demonstrating multilevel and dynamic interactions; and provide a pragmatic, albeit preliminary leader behavior framework. This framework should be relevant for both leaders "at the coalface" and health services researchers interested in developing leadership interventions designed to enhance successful implementation. Specifically, it suggests further exploration of the premise that EBP supportive leadership is about ongoing, strategic, vision-focused, deliberative thinking and day-to-day behaviors that role model, reinforce and live EBP.

Implications for Management, Education, and Research

With further study, L-EBP may provide guidance needed to underpin the often-noted but abstract finding that leaders should "support" EBP. It could clarify specific actions/approaches to be tested and trialed in healthcare organizations desirous of EBP institutionalization, and it could inform graduate programs in nursing as to the potential importance of required skills and ways of thinking. **WVN**

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article at the publisher's web site:

Appendix 1: Key study definitions (see Stetler, Ritchie, Rycroft-Malone, Schultz, & Charns, 2009)
Appendix 2: Outline of core thematic groupings of leadership behaviors for EBP
Appendix 3: Tools & processes in the mid-level *Functional leadership* theme of *Implementing* specific EBP projects
Appendix 4: Comparable research on leadership behaviors with conceptual categorizations