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Authors

Aarons, Gregory A
Ehrhart, Mark G
Farahnak, Lauren R
et al.

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Aligning Leadership Across Systems and Organizations to Develop Strategic Climate to for Evidence-Based Practice Implementation

Gregory A. Aarons, Ph.D.[1,2,4], **Lauren R. Farahnak, M.S.**[1,2], **Mark G. Ehrhart, Ph.D.**[3], and **Marisa Sklar, M.S.**[4]

[1]University of California, San Diego, Department of Psychiatry

[2]Child and Adolescent Services Research Center

[3]San Diego State University, Department of Psychology

[4]San Diego State University/University of California San Diego, Joint Doctoral Program in Clinical Psychology

Abstract

There has been a growing impetus to bridge the gap between basic science discovery, development of evidence-based practices (EBPs) and their availability and delivery in order to improve public health impact of such practices. In seeking to capitalize on factors that support implementation and sustainment of EBPs, it is important to consider that healthcare is delivered within the outer context of public health systems, and the inner context of healthcare organizations and workgroups. Leaders have a key role in determining the nature of system and organizational context. This article will addresses the role of leadership across levels in developing strategic climate for EBP implementation within the outer (i.e., system) and inner (i.e., organization, work group) contexts of healthcare. Within the framework of Edgar Schein's "climate embedding mechanisms," we describe strategies that leaders at the system, organization, and work group levels can consider and apply to develop a strategic climates that support the implementation and sustainment of EBP in healthcare and allied healthcare settings.

Keywords

Dissemination; implementation; evidence-based practice; leadership; organizational climate; strategic climate; system

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Correspondence to: Gregory A. Aarons, Ph.D., University of California, San Diego, Tel: 858.966.7703 ext. 3550, Fax: 858.966.7704, gaarons@ucsd.edu.

Introduction

Across multiple health and allied health care settings, there has been a growing interest in bridging the gap between the scientific discovery and the development of evidence-based health innovations and practices (EBPs) and the effective and efficient delivery of care to those who would most benefit (42; 69). Although healthcare interventions with demonstrated efficacy continue to be developed, reports have repeatedly indicated that there is a gap in the utilization of such interventions in public health and healthcare settings (13; 39; 50; 53; 72; 78; 91; 116; 117a). Thus despite significant taxpayer dollars having been allocated for the discovery and development of EBPs, the public health impact of these investments has been limited. In response to this shortcoming, greater research attention over the past several years has been directed toward improving the dissemination and implementation of EBPs (53; 69).

Some of this research has focused on the development of implementation frameworks and/or models that identify structures and processes that can impede or enhance EBP implementation efforts. Many implementation models utilize a multilevel framework to enumerate different components, structures, and processes of the implementation process (29; 34; 43; 113). Implementation frameworks may note that characteristics of the intervention itself (e.g., direct costs, time demands, specificity, expertise required by the user) and the quality of evidence supporting the EBP are critical (38). Others have noted that the fit of an innovation with the context for implementation (e.g., hospital, community health clinic, school, public sector health system) is a critical consideration (40; 43; 57; 65). However, characteristics of implementation settings (e.g., systems, organizations) are critical for effective adoption and use of EBPs. It is often the leaders of systems of organizations who are responsible for developing a context that supports a strategic initiative such as EBP implementation. In this article we argue that leaders can use strategies to develop system and organizational climates conduce to EBP implementation and sustainment. We will focus on organizational characteristics that can impact EBP implementation at multiple levels of health care systems.

There are a number of common organizational processes likely to be associated with successful implementation (29; 43). There may be a tendency to focus on processes directly involved in healthcare, including the care recipients (e.g., patients, clients) and care providers (e.g., doctors, nurses, clinicians). However, it is important to consider that healthcare and allied health services (e.g., mental health, substance abuse treatment) are delivered to the public within the larger contexts of work groups, healthcare organizations, and public health systems of various sizes and scopes. Organizational factors involving stakeholders at multiple levels can impact successful organizational change, such as implementation (12; 34; 64), and it is becoming increasingly clear that organizational factors are likely to have more impact on successful implementation of EBP compared to individual factors (54).

Drawing from the Exploration, Preparation, Implementation, and Sustainment (EPIS) implementation framework, we emphasize the importance of considering leaders in the outer (system) and inner (organizational) contexts (5). Specifically, we identify how leaders may

facilitate the development of strategic climates for EBP implementation seeking to enumerate important components of the implementation process (29; 40; 43). We highlight literature on organizational climate and implementation climate, then outline approaches to leadership that can support the development of such climates.

ORGANIZATIONAL CLIMATE

Organizational climate has been a topic of interest since the middle of the 20th century, when researchers examined the work environment resulting from leaders' treatment of their employees (10; 68; 73). Since then, research on organizational climate has been conceptualized in a number of different ways, varying by level of analysis (individual vs. organizational unit), content (description vs. evaluation), focus (general vs. specific), and type of composition model (climate level vs. climate strength) (30). Organizational climate has been associated with numerous organizational outcomes that play an important role in implementation, including employee attitudes, motivation, and performance (66). Climate has been defined in terms of employees' descriptions of the "events, practices, and procedures and the kinds of behaviors that get rewarded, supported, and expected in a setting" (102). Although the emphasis has been on the policies, practices, procedures, and reward systems in service systems, organizations, or work groups scholars agree that climate captures the meaning that employees derive from policies and procedures regarding what management values (30; 56).

One of the primary distinctions made in the organizational climate literature has been between molar climates and focused climates (30; 103). Molar climate refers to the extent to which employees experience a positive (or negative) work environment (103). It typically describes multiple dimensions contributing to general employee well-being, such as role stress, autonomy, leadership support, and warmth (55). In contrast, focused climates represent employees' perceptions of the extent to which organizational events, practices, and procedures align with and support a specific criterion of interest, such as a particular strategic imperative (e.g., climate for customer service, climate for safety) or an organizational process (e.g., ethics climate, fairness climate) (30; 103). We build on previous work identifying implementation climate as a measurable and important focused or strategic climate (63).

There is ample evidence that the presence of a strategic climate is associated with better organizational performance pertaining to the strategic criterion of interest (30; 66). For example, higher levels of safety climate are associated with increased employee safety behavior and decreased accidents (124; 125). A strategic climate for creativity is associated with higher employee engagement in creativity processes (36) and a strategic climate for innovation is associated with organization innovation (58). Additionally, higher levels of a service climate are associated with higher customer satisfaction (105; 106). Of particular relevance to this article is strategic climate for implementation (64; 65), which we describe next in the context of EBP implementation in public health systems, organizations, and work groups.

Implementation Climate

Implementation climate was originally defined as "employees' shared perceptions of the importance of innovation implementation within the organization… [that] results from employees' shared experiences and observations of, and their information about and discussions about, their organization's implementation policies and practices" (63)(p. 813). When an implementation climate is present in a system, organization, or work group, the environment is supportive of transferring a new innovation into practice (63). In this article, our focus is on implementation climate as it refers specifically to the implementation of EBP in healthcare settings. Based on past definitions of organizational climate and implementation climate (63; 104), we define EBP implementation climate as the practices, procedures, and behaviors that are rewarded, supported, and expected in order to facilitate effective EBP implementation (4).

EBP implementation can be developed when leaders at the system, organization, and work group levels communicate the importance of the EBP implementation through the policies, procedures, and reward systems they establish. In a strong EBP implementation climate, healthcare providers clearly understand that leaders (e.g., policy makers, agency executives, program managers, supervisors) endorse and support EBP implementation and use. A strategic EBP implementation climate can be developed by leaders at the system, organization, and work group levels and we contend that greater congruence across levels will facilitate development of such climates, and hence, more effective EBP implementation. Thus, we next consider the role of leadership in creating a strategic climate for EBP implementation.

LEADERSHIP

Leadership is an important component of organizational processes that support organizational change such as EBP implementation (14; 16). Leadership facilitates processes that are important in fostering implementation, including a supportive work group climate (107), positive employee work attitudes (62), positive attitudes toward EBP (2), and commitment to organizational change (49). One of the most well-known and most heavily researched approaches to leadership is transformational leadership, which captures leadership behaviors across the dimensions of individual consideration, intellectual stimulation, inspirational motivation, and idealized influence (15). Research has demonstrated that transformational leadership is associated with increased job satisfaction (88; 121), organizational commitment (22), and performance for leaders (46; 120), teams (17; 51), employees (126), as well as decreased negative outcomes, such as turnover intentions (22) and burnout (27; 28). Of specific relevance to this article, transformational leadership has been shown to be particularly important for ameliorating the negative impact of organizational stress on work group climate during large scale behavioral health reform (7) and to support positive attitudes to EBP in statewide system change efforts (8). Transformational leadership is also associated with the success implementation efforts (75; 76).

Although much of the literature on leadership has focused on the organizational and work group levels, healthcare organizations can be strongly influenced by the decisions and

policies made or instantiated by leaders at the system level as well. Decisions and policies at the system level can impact funding, disbursement of resources at state and local levels, and policy making to support EBP implementation (112). For example, leaders in the Veteran's Health Administration (VHA) developed The Uniform Mental Health Services Handbook (119) that includes several mandates that help create the capacity for medical centers and large community outpatient clinics to deliver EBP. The handbook specifies that each VA medical center have an EBP implementation coordinator responsible for educating providers and upper level management about EBP, encouraging providers to attend EBP trainings, and working with mental health leaders at the organization and work group levels, and with providers to identify methods increase delivery of EBPs in clinical care. Thus, this is an example of how leaders in the outer context (system) can develop policies that impact the inner context (e.g., hospitals, clinics, workgroups, providers).

Leaders at the organization level (e.g., CEOs, presidents, administrators) often are responsible for decisions regarding implementation of new practices and organizational strategies (21; 84). This level of leadership is often involved in securing funding, which may be related to the decision to implement new practices as funders are increasingly requiring the use of EBPs (32; 78–81). However, as we noted above, congruence across levels is an important consideration. The challenge for executive leaders is to involve lower levels of leadership and staff in order to facilitate congruence of mission and process. If not addressed, work group leaders (i.e., those who supervise direct service staff) may not have needed buy-in or an understanding of the rationale behind the decision to implement EBP required to communicate the rationale to direct service providers.

Although strategic decisions about implementing EBPs are typically made by upper level leaders, the effectiveness of implementation efforts is driven by the providers who deliver the actual services (25; 74; 122). Consequently, the implementation process can be better facilitated if led by "first-level" or work group leaders who supervise direct service providers (89). For implementation to be successful, work group leaders must be proactive and perseverant in communicating their knowledge of and support for EBP while managing resistance to change and communicating the importance of the change being implemented (3; 24; 84; 97). Research suggests that lower and middle level leaders who do not support a change initiated by their superiors may use their leadership skills to impede the implementation process (26; 45; 95). Thus, it is important to consider strategies to support the development of effective leaders and congruence of leadership and communications across levels so that work group leaders can provide optimal support to their employees.

Although a majority of leadership research has focused on the individual leaders, studies have demonstrated the importance of alignment across multiple levels of leadership (52; 84; 123). At the system level Chreim and colleagues (25) examined the factors that influenced implementation processes during the transformation of healthcare service delivery to a new model within one Canadian province. They found that implementation was propelled through agreement, participation, and commitment by congruence of support at all levels of leadership. At the work group level, the degree to which providers agree about the strategy or change being implemented predicts implementation success (111). Similarly, the aggregate of multiple levels of leadership predicts organizational outcomes as a function of

strategic implementation efforts (84). We propose that such congruence is effective because it facilitates an implementation climate among stakeholders.

Although some progress has been made identifying the types of leadership and processes through which leaders affect the success of implementation, there is a need for continued research to identify the specific actions by leaders across all levels that will maximize the likelihood of implementation success (86). To help fill this gap in the literature, we next outline strategies (i.e., embedding mechanisms) that could be utilized across system, organization, and work group levels of leadership to create an organizational climate in support of EBP implementation. As with models that specify theoretical mechanisms likely to enhance implementation, we seek to highlight strategies that can inform implementation strategy design and also provide an agenda for leadership and climate research related to EBP implementation and sustainment.

CLIMATE EMBEDDING MECHANISMS

In seeking to outline leadership strategies to create a climate for EBP implementation, one particularly relevant framework comes from Schein's (101) work on organizational culture, a concept closely related to organizational climate. Schein described organizational culture as operating having three overarching characteristics: artifacts (the visible or easily obtained information on how an organization looks and operates), espoused values (the beliefs and philosophies of management and employees claim to be critical to the organization's success), and basic underlying assumptions (the deepest level of culture that often operates outside of conscious awareness that explains why the organization functions the way it does) (101). Zohar and Hofmann (127) connected Schein's conceptualization of culture with the literature on climate by proposing that a strategic organizational climate is a function of the enacted values and priorities of management, and it is the contrast between the espoused and enacted values and priorities of management that provides insight into the assumptions at the deepest level of organizational culture.

One particularly relevant aspect of Schein's work for implementation science is his the use of primary and secondary "embedding mechanisms" as an approach for leaders at multiple levels to communicate their values and priorities (101). Although originally referred to as culture embedding mechanisms (100), Schein more recently acknowledged that these are more likely associated with organizational climate and how the values of leaders are enacted and subsequently perceived by others. Thus, we characterize these as climate embedding mechanisms. The six primary embedding mechanisms described by Schein (101) are the following:

1. What leaders pay attention to, measure, and control on a regular basis

2. How leaders react to critical incidents and organizational crises

3. How leaders allocate resources

4. Deliberate role modeling, teaching, and coaching

5. How leaders allocate rewards and status

6. How leaders recruit, select, promote, and excommunicate

Schein also outlined secondary articulation and reinforcement mechanisms that serve to support and perpetuate the climate of the organization provided they are consistent with the primary mechanisms above. The six secondary mechanisms are the following:

1. Organizational design and structure

2. Organizational systems and procedures

3. Rites and rituals of the organization

4. Design of physical space, facades, and buildings

5. Stories about important events and people

6. Formal statements of organizational philosophy, creeds, and charters

We next provide examples of how leaders across outer context (health services systems) and inner context (organizations and teams or work groups) may use primary and secondary embedding mechanisms to create, support, and reinforce EBP implementation climates.

Primary Embedding Mechanisms

What leaders pay attention to, measure, and control on a regular basis—This climate embedding mechanism spans multiple levels of leadership in that all types of leaders can pay attention to and demonstrate knowledge, interest, and support for EBP. In the outer context, system level leaders can advocate for and set policy, apply appropriate planning frameworks, include and engage relevant stakeholders, and make ongoing evaluation a key component to support the implementation and use of EBP (20; 118). Such support can also be communicated in public forums, policy statements, grant opportunities, and in press releases. Such actions can signal clear support for EBP, particularly if policies are enacted to back up espoused positions or platforms (115).

In the inner context, what organizational leaders pay attention to can be demonstrated through their communications with employees. For example, the company newsletter can be used as an avenue for healthcare executives to share their enthusiasm for the benefits of a particular EBP, perhaps by summarizing the results of a pilot/demonstration project. Executive team meetings can also be used by organizational leaders to demonstrate the priority of EBPs, including discussions of the challenges of implementing EBP and seeking ideas for ways to overcome those challenges. Specifically with regard to the issue of measurement, organizational leaders can include fidelity measures that practice experts and/or patients complete to ensure that providers are using EBP as trained, thus sending the message that proper implementation and use of EBPs are a priority in the organization. Of course, collecting data using such measures makes even more impact when it is shared through feedback processes throughout the organization. Research suggests that such feedback processes are a critical component to successful EBP implementation across a variety of settings (19; 57; 60; 61; 77; 108). By not only collecting such information but also sharing it with employees, organizational leaders make it clear that they are serious in their attempts to improve the EBP implementation and utilization process. All of these actions by executive leaders not only demonstrate the importance of EBP to providers, but also serves

as a model for lower level leaders for how to communicate the importance of EBP in the organization.

In the trenches of health care provision, the issues that work group leaders pay attention to play a critical role in the priorities taken by providers in their work. As work group leaders interact with their staff (whether it be in group or one-on-one supervision meetings), they can ask about the current status of EBP use and encourage them to continue utilizing EBP. Leaders may also discuss the benefits of EBP during regular work group meetings, perhaps through sharing literature demonstrating the effectiveness of the EBP or case studies illustrating its impact. Lastly, and perhaps most importantly, leaders should emphasize the importance of using EBP for patient outcomes, highlighting that the reason for the implementation of the EBP is the rigorous demonstration of its link to better outcomes for patients, and allowance for clinical expertise and judgement, and consideration of patient or consumer choice, preference and culture (9; 53).

Just as providers discern the values of leaders through what they pay attention to, providers also gain insight into leaders' values by what they do not pay attention to or ignore. For example, if work group leaders receive information about the effectiveness of EBP implementation but do not place much of an emphasis on it, then the leader is communicating that they are not on board with the priorities of the organization's leadership, which is likely to have a negative influence on providers and their prioritization of EBP implementation. Another example is when providers do not stick with the EBP being implemented but instead revert to services as usual, and this is known by the leader. By not responding to this issue, the work group leader sends the message to the providers that EBP use is not very important and is not truly valued.

How leaders react to critical incidents—When crisis situations occur within a health care system, organization, or work group, providers look to their leaders to see if they are going to stick to their espoused values even when stress levels are high. In the case of EBP, they are going to see if leaders continue to persist through these challenges and support EBP implementation or if they are simply going to revert to practice as usual. At the system level, one common crisis situation is related to budget issues. There are costs involved with EBP implementation, and so the question becomes whether system leaders are willing to prioritize, initiate, and continue to fund EBP implementation even when funds are tight. If not, then even when the crisis is over, it will be difficult to build a climate supporting EBP implementation because organizations and providers will have experienced that when the going got tough, EBP implementation was not a true priority for system leaders.

For organizational leaders, the primary types of crises may be related to funding, such as when a health or allied health organization fails to obtain a contract or there are cuts in state funding. Such occasions may present an opportunity for organizational leaders to apply a problem solving approach to the implementation process. Recent research suggests that participating in problem solving can result in high levels of fidelity in EBP implementation (83) and that framing problem solving as a system or organizational (rather than individual) concern can lead to more effective organizational change (11; 60; 83). Thus, organizational leaders can take a crisis and use it as an opportunity to work with their leaders across all

levels and develop solutions to support EBP implementation despite such challenges. As funding entities increasingly require healthcare organizations to utilize evidence-based treatments (5), leaders can use a funding crisis to highlight the importance of EBP in securing continued funding and identifying what changes can be made to minimize such crises in the future.

At the work group level, a crisis may have less to do with funding issues and more to do with patient crises or productivity requirements. In the same way that organizational leaders can take a problem solving approach to address funding challenges, work group leaders can take a problem solving approach with their teams. For example, when a patient strays from a medication regiment that precipitates a crisis or a client has a substance abuse relapse or there is a suicide attempt, work group leaders can engage with their providers about how to continue implementation of the EBP and effectively deal with the crisis. Even if the crisis requires a provider to temporarily stray from a an EBP protocol, work group leaders can emphasize the importance of returning to the treatment protocol as quickly as possible. By maintaining the importance of EBP implementation despite the crisis, leaders can strengthen their providers' perception that EBP is a core value.

How leaders allocate resources—The availability of resources is a critical factor in whether EBP can be implemented successfully. In the outer context, system level leadership is especially critical in regard to allocating funding to support EBP implementation (e.g., training, coaching or fidelity monitoring, service provision). One example is Los Angeles County, California, where a recent mandate required that children's mental health provider organizations must use practices from a predetermined list of EBPs in order to qualify for certain funding streams. This type of policy can accelerate the rate of initial EBP uptake. A system-wide emphasis such as this does not, however, diminish the importance of leadership in the inner context of provider organizations to support ongoing EBP implementation.

Within provider organizations there is likely to be variability in how budget decisions are made (90). For example, organizational leaders may make decisions about budget allocations independently or with input from work group leaders. Once allocations are made, works group leaders may manage their funds relatively independently, using their own judgment about the appropriate use of funds without having to gain approval from higher levels. In other cases, the budget may be handled on a case-by-case basis, with work groups leaders requesting funds from executive leadership and executives working with work group leaders on how best to meet their budgetary needs. Whatever the exact system may be, both agency executives and work group leaders may play a role in how resources are allocated towards EBP implementation.

A critical issue for resource allocation are those expenditures that are not explicitly required for EBP implementation but that improve EBP implementation effectiveness and sustainment. Examples may include providing training or making sure tools or resources related to the EBP are available for providers. Another example is explicitly identifying project champions or coaches to support providers utilizing a specific EBP (115).

How leaders allocate rewards and status—That ways in which rewards and status are allocated can be signs of the importance of a strategic initiative. In the outer context, system level leaders may publicly recognize high performing organizations or exemplary initiatives to accomplish effective EBP implementing. For example, as San Diego County Behavioral Health System transformed into a recovery-oriented model of service delivery and three outpatient mental health treatment programs were selected to pilot the transformation through the implementation of reliable and valid recovery-oriented assessments (109). Through this designation, leaders from these three programs were invited to co-present regarding the system change at a conference. They also served as representatives of outpatient mental health treatment programs at committee meetings and facilitated collaboration between the programs, County administrative staff, and researchers contracted to evaluate the transformation.

In the inner context, organization and work group leaders can allocate reward and status through bonuses for EBP utilization. Although financial rewards may not be feasible for all organizations, non-monetary recognition is another alternative available to leaders. For instance, a healthcare executive may recognize work groups for successfully implementing a new practice in an e-mail blast or newsletter to the entire company. Work group leaders may create a special status for individuals they supervise who are considered experts in a particular EBP. Taking this step not only shows that EBP expertise is valued by the work group leader, but it also improves the likelihood for implementation success by providing proximal support for service providers rather than requiring them to look elsewhere for answers to EBP-related questions. Such rewards and recognition aligned across the organizational and work group levels should support the development of a strategic climate for EBP implementation.

Role modeling, teaching, and coaching—The next embedding mechanism highlights the importance of leaders' role modeling, knowledge, support, and commitment for EBP. Although active role modeling, teaching, and coaching is perhaps only realistic at the work group level, leaders at the system and organizational level can also use this embedding mechanism by role modeling positive attitudes and actions towards the EBP being implemented. Provider attitudes are an important predictor of EBP implementation effectiveness (2; 41; 47; 96), and leader attitudes influence provider attitudes, particularly during times of change (70; 85; 98). Thus, even though system and organization leaders may not have the opportunities to work directly with teaching and coaching providers, they can serve as important role models in other ways to support the overall development of a positive climate for EBP implementation.

This embedding mechanism most directly involves the hands-on role leaders play in the day-to-day work of providers, and thus it is most applicable to work group leaders as they work most closely with the providers they supervise. Leaders cannot role model, teach, or coach their subordinates unless they are familiar with the EBP in question, and thus this embedding mechanism requires that leaders themselves be knowledgeable about and/or skilled in EBPs. A first step that leaders can take is to attend (at least some) EBP training sessions with their employees. Doing so has both a symbolic effect of demonstrating the importance of the training and a practical effect of helping the leader to become more

knowledgeable about the EBP. In some organizations, the work group leader may have clients or patients of his or her own. In that case, the leader can serve as more of a direct role model by not only using the EBP but by sharing his or her experiences in doing so, perhaps particularly emphasizing how he/she persevered in implementing the EBP despite any challenges that were faced. Although some opportunities for teaching and coaching will naturally occur as employees come to their work group leader with questions about the EBP, we would also recommend that the leader allocate time (perhaps in group meetings or even in separate meetings) to specifically discuss EBP implementation and support providers through the implementation process.

How leaders recruit, select, and promote—The final primary embedding mechanism involves how leaders recruit, select, and promote their staff. Decisions around recruitment, selection, and promotion send a strong message about the importance of EBP, and can occur in the outer or inner contexts. Selection decisions at the system level are critically important because of the prestige and influence associated with high level positions. Selecting an official who supports EBP will help ensure that decisions at the system level will support EBP implementation. This sends a message to public health employees and to the general public that EBP is a priority in the health care system.

Within organizations, leaders may work with human resources departments to consider experience with EBP when making hiring decisions for service providers. Even if providers do not have extensive experience with an EBP or are not being hired to perform a specific EBP, leaders could still seek out applicants who have positive attitudes toward EBP (1). Although the climate for EBP implementation may be improved just by increasing the number of individuals with expertise with and positive attitudes toward EBP, recruitment, selection, and promotion processes should have a greater impact if current employees are aware that such criteria are being used. Thus, an extra step is needed in that leaders need to communicate how these processes relate to the organization's values related to EBP.

Secondary Articulation and Reinforcement Mechanisms

Organizational design and structure—The way that leaders design and structure systems, organizations, and work groups can play a key role in supporting EBP. For example, partnerships among policymakers, researchers, and practitioners can encourage the implementation and dissemination of EBP into public mental health systems by navigating and addressing implementation challenges (9). It is also important to facilitate partnerships among associations, licensing boards, and other relevant bodies to develop strategies to provide training in EBP and to include requirements for training in and implementation of EBP in state licensing board rules and regulations as well as funding and contracting mechanisms (23).

Payment structures at the system and organization levels can also promote implementation of EBP (25; 35; 44; 48). An example of how payment structures at these levels can promote implementation is evident in the Patient-Centered Medical Home (PCMH) model, a promising new approach to integrated care. One of the seven joint principles of the PCMH is payment reform that calls for payment structure that combines fee-for-service, pay-for-

performance, and a separate payment for care coordination and integration (94). This payment structure is explicitly intended to compensate for care, care management, and medical consultation that take place outside of the traditional face-to-face visits in order to facilitate the delivery of higher quality of care. Similar payment reforms are included in the Patient Protection and Affordable Care Act. For example, coverage of preventive services, such as incentives to Medicare and Medicaid beneficiaries to complete tobacco cessation services, support an evidence-based approach to health care (67). Although payment reform is a structural feature critical to the adoption of the PCMH and ACA, in some cases, EBP is not eligible for reimbursement through Medicaid or private insurers (35). This could limit the national climate for EBP in some facets of health care.

Additional structural features of systems, organizations, and work groups, including size, complexity, and formalization, can interact to influence implementation of EBP (18; 31). For example, in research assessing the interaction between organization type (health ministries, hospitals, regional health authorities) and size, EBP implementation was greater for medium sized units for health ministries and hospitals, but not regional health authorities. Having smaller sized regional health authority units that also included research staff was associated with greater EBP implementation (18).

System, organization, and work group infrastructure components such as information systems and clinical records systems may also impact EBP implementation (35; 48). Such clinical systems, computerized decision support, and prompts that support practice (such as decision making algorithms and clinical reminders) can have a positive effect on aligning practices with evidence (110; 114). For example, computerized knowledge management in the form of email reminders has consistently demonstrated significant improvements in provider performance and patient outcomes for patients with heart failure (33) and cancer (71).

Organizational systems and procedures—Organizational systems and procedures can also facilitate EBP implementation through performance measurement and evaluation (48). System level leaders may monitor the use of EBP by asking organizations to share data regarding the implementation and use of EBP by their providers. Such actions may eventually influence additional levels of leadership in that it will encourage agency executives and, in turn, work group leaders to collect data regarding EBP. Doing so should reinforce the implementation climate as perceived by providers and support their use of EBP. For example, one state human services agency includes mandates and funding in its contracts with community based organizations for staff positions dedicated to fidelity assessment and coaching of providers of a target EBP (6).

Processes of consensus building, advocacy, and persistence in the interaction, coordination, and sharing of common goals have been suggested as crucial factors affecting EBP implementation (9; 25; 35). Fragmentation and lack of coordination of services across systems or service sectors can impede dissemination and implementation of EBP. For example, personnel responsible for child protection, criminal investigation, and legal proceedings may have training relevant to their primary work, but relatively little exposure to evidence-based assessments or treatments because child protection and justice systems

often operate independently from health and mental health systems (9). Such fragmentation and lack of coordination of services may act as a barrier to the implementation of EBP.

The timing of system and organizational procedures may also impact EBP implementation. For example, organizational systems and procedures concerning timing were often cited as a barrier to sustained implementation of the WISEWOMAN program, an EBP to reduce cardiovascular disease risk through improved nutrition an increased physical activity (37). Although the WISEWOMAN program is an exemplary public health intervention that has been widely disseminated for over a decade, case studies with WISEWOMAN program leaders and managers from the first three WISEWOMAN states illustrated that lack of time can act as a barrier to the program's sustainment and this is in keeping with findings that unrealistically brief time frames can limit effective adoption, implementation, and sustainment of EBP (35; 37). Planning is often tied to funding, but innovations take time to become instantiated in service systems and it also takes time for organizations and providers to develop climates supportive of EBP. Additionally, turnover in leadership and staff are challenges that must be addressed by systems and organizations implementing EBPs (7). Consequently, ongoing concerted efforts, patience, a problem solving orientation, and continued support at the system, organization and work group levels is needed to facilitate EBP implementation.

Rites and rituals of the organization—At the system level, rites and rituals can help foster EBP implementation climate. For example, the success of organizations within a service system in the implementation of EBP can be celebrated on a regular basis, or at specified transitional time-periods (115). This is an effective strategy for improving EBP sustainment as organizations may become more invested in the implementation of a particular EBP when their success is acknowledged, remembered, and celebrated.

In the inner context, organizations and teams may have rites of passage such as completing certification in EBP or being acknowledged for excellence in EBP that can signal the importance of EBP to leaders and staff. In our experience, organizations have administered certificates of completion after providers complete the required number of client visits and earned an EBP certification. If an entire team achieves EBP certification, team leaders may organize simple low-cost team celebrations, for example a pot luck or pizza party. Executives in a one large behavioral health agency identified teams that achieved mastery in an EBP and asked them to provide a presentation to other teams describing their implementation process and how they overcame initial barriers to using the EBP. This approach was further utilized as a rite of passage for teams, as it marked that executive leadership recognized and celebrated their success in implementing EBP.

Design of physical space, facades, and buildings—The design of physical space, facades, and buildings also affect EBP implementation (99). At the system level, community design can promote adherence to physical activity guidelines (87), signalling the importance of such a strategic initiative. The design of physical space, including availability and proximity to facilities, can act as a barrier to EBP implementation for promoting adherence to physical activity guidelines. For example, point-of-decision prompt interventions can

motivate stair use but are less likely to be effective in buildings where stairways are difficult to find, poorly lit, poorly maintained/secured, locked, and/or unsafe (59).

Within the inner context, one study (25) found that the removal of physical boundaries enhanced service providers' communication with one another such that they were more likely to be "giving the same message" to patients (p. 223). There are also a number of ways in which the architectural design of hospital facilities, including its technology and equipment, can impact the use of EBP for patient safety (92). For example, insufficient space can hinder EBP implementation, as evidenced in the nursing literature when providers do not have allocated space for note-writing (114).

Stories about important events and people—This embedding mechanism relates to several of the primary embedding mechanisms discussed previously. For example, if organizations, teams, or individual health care providers are recognized for exemplary use of EBP (as discussed under *how leaders allocate rewards and status*), the stories of what transpired with regard to EBP may be shared in systems, organizations, and teams for years to come. Another example is stories that may be told about teams and organizations participating in pilot programs to implement innovative treatments or technologies. Leaders in healthcare systems and organizations may tell stories about the pilot teams to demonstrate the trials and triumphs that occurred throughout implementation and to illustrate that implementation is not a one-time event, but rather is a stance and a process that takes time and a problem solving orientation.

While it may be natural for leaders and providers to perpetuate success stories regarding EBP implementation, this embedding mechanism highlights the importance of using positive language and a perseverant approach during EBP implementation. In our experience with mental health teams, we have sometimes heard stories from providers regarding clients for whom an implemented EBP was not a good fit. Leaders should encourage providers to question assumption so that the stories providers tell about implementation can include overcoming barriers to implementation rather than ignoring challenges.

Formal statements of organizational philosophy, creeds, and charters—In addition to regulations and policies regarding EBP implementation (35), formal statements of organizational philosophy, creeds, and charters can facilitate a strategic climate supportive of EBP. The American Psychological Association's report on disseminating EBP for children and adolescents (9) serves as an example of a formal statement of organizational philosophy in support of EBP implementation. Such a formal statement communicates the encouragement of EBP implementation to all psychologists, irrespective of the system, organization, or -work group within which they provide services. Additional examples include Ethical Principles of Psychologists and Code of Conduct, stressing the use of scientific or professional knowledge in psychologists' provision of treatment (8), which further promotes a climate for EBP implementation.

Formal statements through major federal, state, and local policies calling for the coordination between researchers, practitioners, and policymakers also encourage EBP implementation. Efforts to align work groups in the addiction treatment field with EBP have

been channeled through various legislative mandates and programs requiring implementation of EBP. An example at the federal level is the Substance Abuse and Mental Health Services Administration (SAMHSA)'s identification of the use of "evidence-based programs and strategies" among the ten indicators of quality care in the context of the National Outcomes Monitoring System (117b). Another example of formal statements and policies that encourage EBP implementation is Oregon's Senate Bill 267, a mandate for agencies to spend 75% of their budgets on EBP-related activities for youth and adults at high risk for involvement in the criminal justice system, including in substance abuse treatment settings (93). A final example is a formal statement from the Minnesota Legislature requesting a plan to promote health at reduced costs, which prompted the development of a large public health intervention that requires further EBP implementation of all Minnesota Statewide Health Improvement Program (M-SHIP) grantees (37).

Mission statements offer another example of formal statements of organizational philosophy, creeds, and charters that can enhance EBP implementation climate. For example, the mission statement for The Johns Hopkins Hospital Department of Nursing and Patient Care Services illustrates the goal of improving patient care outcomes through evidence-based clinical and administrative decision making. This mission statement seeks to address several key points, including to reinforce the spirit of inquiry and the lifelong learning necessary for EBP implementation, to address a work environment that demands and supports accountability for EBP implementation, and to include the goal of improving patient care outcomes through EBP implementation (82). Mission statements can be especially useful in embedding an EBP implementation climate if leaders behave and communicate in a manner consistent with the content of mission statements (101; 127).

CONCLUDING REMARKS

In this paper we described how leadership can enhance structures, processes, and activities to promote outer system and inner organizational climates conducive to the implementation of EBPs. We provided examples, both from the literature and our own anecdotal experience about how system, organization, and work group leaders can develop strategic climates for EBP implementation. Space limitations preclude an in-depth exposition on the issues of leadership and strategic climate and on climate embedding mechanisms. Rather, our goal was to raise these issues and provide some strategies that could be adopted to support EBP implementation across the system, organization, and workgroup levels. It is our conclusion that the more the recommended strategies can be applied with congruence across outer and inner contexts, the more likely it will be that strategic climates to support EBP implementation can be developed. This should, in turn, support more effective EBP implementation and sustainment. Following this guidance, leaders at multiple levels can develop strategies for their systems and organizations that will demonstrate commitment to evidence-based care that should be recognized by healthcare providers across levels. Such a course of action should help to create a strategic climate that supports EBP implementation and sustainment in order to improve the public health impact of effective health care interventions.

Acknowledgments

LITERATURE CITED

1. Aarons GA. Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). Ment Health Serv Res. 2004; 6:61–74. [PubMed: 15224451]

2. Aarons GA. Transformational and transactional leadership: Association with attitudes toward evidence-based practice. Psychiatr Serv. 2006; 57:1162–69. [PubMed: 16870968]

3. Aarons GA, Ehrhart MG, Farahnak LR. The Implementation Leadership Scale (ILS): Development of a brief measure of unit level implementation leadership. 2013 In press.

4. Aarons, GA.; Farahnak, LR.; Ehrhart, MG. Leadership in dissemination and implementation. In: Beidas, RS.; Kendall, PC., editors. Child and Adolescent Therapy: Dissemination and Implementation of Empirically Supported Treatments. Guilford Press; In Press

5. Aarons GA, Hurlburt M, Horwitz SM. Advancing a conceptual model of evidence-based practice implementation in child welfare. Adm Policy Ment Hlth. 2011; 38:4–23.

6. Aarons GA, Sommerfeld DH. Leadership, innovation climate, and attitudes toward evidence-based practice during a statewide implementation. J Am Acad Child Psy. 2012; 51:423–31.

7. Aarons GA, Sommerfeld DH, Willging CE. The soft underbelly of system change: The role of leadership and organizational climate in turnover during statewide behavioral health reform. Psychol Serv. 2011; 8:269–81. [PubMed: 22229021]

8. American Psychological Association. Ethical Principles of Psychologists and Code of Conduct. Washington, DC: Am. Psychol. Assoc; 2002.

9. American Psychological Association, Task Force on Evidence-Based Practice for Children and Adolescents. Disseminating Evidence-Based Practice for Children and Adolescents: A Systems Approach to Enhancing Care. Washington, DC: Am. Psychol. Assoc; 2008.

10. Argyris C. Some problems in conceptualizing organizational climate: A case study of a bank. Admin Sci Quart. 1958; 2:501–20.

11. Argyris, C. Knowledge for Action: A guide to Overcoming Barriers to Organizational Change. San Francisco: Jossey-Bass; 1993.

12. Backer, TE.; David, SL. Syntheses of behavioral science learnings about technology transfer. In: Backer, TE.; David, SL.; Soucy, D., editors. Reviewing the Behavioral Science Knowledge Base on Technology Transfer. Rockville, MD: Natl. Inst. on Drug Abuse; 1995. NIDA Research Monograph 155

13. Balas, EA.; Boren, SA. Managing clinical knowledge for healthcare improvements. In: Bemmel, J.; McCray, AT., editors. Yearbook of Medical Informatics 2000: Patient-Centered Systems. Stuttgart, Germany: Schattauer Verlagsgesellschaft; 2000. p. 65-70.

14. Bass, BM. Leadership and Performance Beyond Expectations. New York: Free Press; 1985.

15. Bass, BM.; Avolio, BJ. Research in Organizational Change and Development. Greenwich, CT: JAI Press; 1990. The implications of transformational and transactional leadership for individual, team, and organizational development; p. 231-72.

16. Bass, BM.; Avolio, BJ. Training Full Range Leadership. Mind Garden, Inc; 1999.

17. Bass BM, Avolio BJ, Jung DI, Berson Y. Predicting unit performance by assessing transformational and transactional leadership. J Appl Psychol. 2003; 88:207–18. [PubMed: 12731705]

18. Belkhodja O, Amara N, Landry R, Ouimet M. The extent and organizational determinants of research utilization in Canadian health service organizations. Sci Commun. 2007; 28:377–417.

19. Bickman L, Kelley SD, Athay M. The technology of measurement feedback systems. Couple Fam Psychol-Res Prac. 2012; 1:274–84.

20. Brownson RC, Fielding JE, Maylahn CM. Evidence-based decision making to improve public health practice. Frontiers Publ Hlth Serv Syst Res. 2013; 2:2.

21. Burke, WW. Organization Change: Theory and Practice. Thousand Oaks, CA: Sage; 2011.

22. Bycio P, Hackett RD, Allen JS. Further assessments of Bass's (1985) conceptualization of transactional and transformational leadership. J Appl Psychol. 1995; 80:468–78.

23. Caccia-Bava MDC, Guimaraes T, Harrington SJ. Hospital organization culture, capacity to innovate and success in technology adoption. J Health Org Manage. 2006; 20:194–217.

24. Cannella A, Monroe M. Contrasting perspectives on strategic leaders: Toward a more realistic view of top managers. J Manage. 1997; 23:213–37.

25. Chreim S, Williams BB, Coller KE. Radical change in healthcare organization: Mapping transition between templates, enabling factors, and implementation processes. J Health Org Manage. 2012; 26:215–36.

26. Conger, JA.; Kanungo, RN. Charismatic Leadership: The Elusive Factor in Organizational Effectiveness. San Francisco: Jossey-Bass; 1988.

27. Constable JF, Russell DW. The effect of social support and the work environment upon burnout among nurses. J Human Stress. 1986; 12:20–26.

28. Corrigan PW, Diwan S, Campion J, Rashid F. Transformational leadership and the mental health team. Adm Policy Ment Hlth. 2002; 30:97–108.

29. Damschroder L, Aron D, Keith R, Kirsh S, Alexander J, Lowery J. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. Implement Sci. 2009; 4:50–64. [PubMed: 19664226]

30. Ehrhart, MG.; Schneider, B.; Macey, WH. Organizational Climate and Culture: An Introduction to Theory, Research, and Practice. New York: Routledge; In press

31. Emmons KM, Weiner B, Fernandez ME, Tu S. Systems antecedents for dissemination and implementation: A review and analysis of measures. Health Educ Behav. 2012; 39:87–105. [PubMed: 21724933]

32. Essock SM, Goldman HH, Van Tosh L, Anthony WA, Appell CR, et al. Evidence-based practices: Setting the context and responding to concerns. Psychiatr Clin North Am. 2003; 26:919–38. [PubMed: 14711128]

33. Feldman PH, Murtaugh CM, Pezzin LE, McDonald MV, Peng TR. Just-in-time evidence-based e-mail "reminders" in home health care: Impact on patient outcomes. Health Serv Res. 2005; 40:865–86. [PubMed: 15960695]

34. Ferlie EB, Shortell SM. Improving the quality of health care in the United Kingdom and the United States: A framework for change. Milbank Q. 2001; 79:281–315. [PubMed: 11439467]

35. Ganju V. Implementation of evidence-based practices in state mental health systems: Implications for research and effectiveness studies. Schizophrenia Bull. 2003; 29:125–31.

36. Gilson L, Shalley C. A little creativity goes a long way: An examination of teams' engagement in creative processes. J Manage. 2004; 304:453–70.

37. Glanz K, Bishop DB. The role of behavioral science theory in development and implementation of public health interventions. Annu Rev Public Health. 2010; 31:399–418. [PubMed: 20070207]

38. Glasgow RE, Emmons KM. How can we increase translation of research into practice? Types of evidence needed. Annu Rev Public Health. 2007; 28:413–33. [PubMed: 17150029]

39. Glasgow RE, Strycker LA. Level of preventive practices for diabetes management: Patient, physician, and office correlates in two primary care samples. Am J Prev Med. 2000; 19:9–14. [PubMed: 10865158]

40. Glisson C, Schoenwald S. The ARC organizational and community intervention strategy for implementing evidence-based children's mental health treatments. Ment Health Serv Res. 2005; 7:243–59. [PubMed: 16320107]

41. Gotham HJ. Diffusion of mental health and substance abuse treatments: Development, dissemination, and implementation. Clin Psychol-Sci Pr. 2004; 11:161–76.

42. Green LAW, Ottoson JM, Garcia C, Hiatt RA. Diffusion theory and knowledge dissemination, utilization, and integration in public health. Annu Rev Public Health. 2009; 30:151–74. [PubMed: 19705558]

43. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: Systematic review and recommendations. Milbank Q. 2004; 82:581–629. [PubMed: 15595944]

44. Guerrero EG, Kim A. Organizational structure, leadership and readiness for change and the implementation of organizational cultural competence in addiction health services. Eval Program Plann. 2013; 40:74–81. [PubMed: 23816502]

45. Guth WD, Macmillan IC. Strategy implementation versus middle management self-interest. Strat Manage J. 1986; 7:313–27.

46. Hater JJ, Bass BM. Superiors' evaluations and subordinates' perceptions of transformational and transactional leadership. J Appl Psychol. 1988; 73:695–702.

47. Henggeler SW, Chapman JE, Rowland MD, Halliday-Boykins CA, Randall J, et al. Statewide adoption and initial implementation of contingency management for substance abusing adolescents. J Consult Clin Psychol. 2008; 76:556–67. [PubMed: 18665685]

48. Herbert C, Best A. It's a matter of values: Partnership for innovative change. Healthcare Papers. 2011; 11:31–37. [PubMed: 21677515]

49. Hill N, Seo M, Kang J, Taylor M. Building employee commitment to change across organizational levels: The influence of hierarchical distance and direct managers' transformational leadership. Organ Sci. 2012; 23:758–77.

50. Hogan MF. The President's New Freedom Commission: Recommendations to transform mental health care in America. Psychiatr Serv. 2003; 54:1467–74. [PubMed: 14600303]

51. Howell JM, Avolio BJ. Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated-business-unit performance. J Appl Psychol. 1993; 78:891–902.

52. Hunt, JG. Leadership: A New Synthesis. Thousand Oaks, CA: Sage; 1991.

53. Inst. Med. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: Natl. Acad. Press; 2001.

54. Jacobs JA, Dodson EA, Baker EA, Deshpande AD, Brownson RC. Barriers to evidence-based decision making in public health: A national survey of chronic disease practitioners. Public Health Rep. 2010; 125:736–42. [PubMed: 20873290]

55. James LA, James LR. Integrating work environment perceptions: Explorations into the measurement of meaning. J Appl Psychol. 1989; 74:739–51.

56. James LR, Choi CC, Ko CHE, McNeil PK, Minton MK, et al. Organizational and psychological climate: A review of theory and research. Eur J Work Organ Psy. 2008; 17:5–32.

57. Jeffery R, Iserman E, Haynes RB. Can computerized clinical decision support systems improve diabetes management? A systematic review and meta-analysis. Diabet Med. 2013

58. Jung DI, Chow C, Wu A. The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. Leadership Quart. 2003; 14:525–44.

59. Kahn EB, Ramsey LT, Brownson RC, Heath GW, Howze EH, et al. The effectiveness of interventions to increase physical activity. Am J Prev Med. 2002; 22:73–107. [PubMed: 11985936]

60. Kelman E, Wolff G. Data feedback and group problem-solving: An approach to organizational development in schools. Psychol Schools. 1976; 13:421–27.

61. Kines P, Andersen LPS, Spangenberg S, Mikkelsen KL, Dyreborg J, Zohar D. Improving construction site safety through leader-based verbal safety communication. J Safety Res. 2010; 41:399–406. [PubMed: 21059457]

62. Kinjerski V, Skrypnek BJ. The promise of spirit at work: Increasing job satisfaction and organizational commitment and reducing turnover and absenteeism in long-term care. J Gerontol Nurs. 2008; 34:17–25. [PubMed: 18942536]

63. Klein KJ, Conn AB, Smith DB, Sorra JS. Is everyone in agreement? An exploration of within-group agreement in employee perceptions of the work environment. J Appl Psychol. 2001; 86:3–16. [PubMed: 11302231]

64. Klein KJ, Conn AB, Sorra JS. Implementing computerized technology: An organizational analysis. J Appl Psychol. 2001; 86:811–24. [PubMed: 11596799]

65. Klein KJ, Sorra JS. The challenge of innovation implementation. Acad Manage Rev. 1996; 21:1055–80.

66. Kuenzi M, Schminke M. Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. J Manage. 2009; 35:634–717.

67. Patient Protection and Affordable Care Act. Public Law. 2010:111–148.

68. Lewin K, Lippitt R, White RK. Patterns of aggressive behavior in experimentally created "social climates. J Soc Psychol. 1939; 10:271–99.

69. Lobb R, Colditz GA. Implementation science and its application to population health. Annu Rev Public Health. 2013; 34:235–51. [PubMed: 23297655]

70. Lofquist EA, Greve A, Olsson UH. Modeling attitudes and perceptions as predictors for changing safety margins during organizational change. Safety Sci. 2011; 49

71. McDonald MV, Pezzin LE, Feldman PH, Murtaugh CM, Peng TR. Can just-in-time, evidence-based "reminders" improve pain management among home health care nurses and their patients? J Pain Symptom Manage. 2005; 29:474–88. [PubMed: 15904750]

72. McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, et al. The quality of health care delivered to adults in the United States. N Engl J Med. 2003; 348:2635–45. [PubMed: 12826639]

73. McGregor, DM. The Human Side of Enterprise. New York: McGraw-Hill; 1960.

74. McNulty T, Ferlie E. Process transformation: Limitations to radical organizational change within public service organizations. Org Studies. 2004; 25:1389–412.

75. Michaelis B, Stegmaier R, Sonntag K. Affective commitment to change and innovation implementation behavior: The role of charismatic leadership and employees' trust in top management. J Change Manage. 2009; 9:399–417.

76. Michaelis B, Stegmaier R, Sonntag K. Shedding light on followers' innovation implementation behavior: The role of transformational leadership, commitment to change, and climate for initiative. J Manage Psychol. 2010; 25:408–29.

77. Nakamura BJ, Mueller CW, Higa-McMillan C, Okamura KH, Chang JP, et al. Engineering youth service system infrastructure: Hawaii's continued efforts at large-scale implementation through knowledge management strategies. J Clin Child Adolesc. 2013:1–11. (ahead-of-print).

78. Natl. Adv. Ment. Health Council. Bridging Science and Service: A Report by the National Advisory Mental Health Council's Clinical Treatment and Services Research Workgroup. Bethesda, MD: Natl. Inst. Health, Natl. Inst. Ment. Health; 1999. NIH Publ. No. 99-4353

79. Natl. Inst. Ment. Health. Translating Behavioral Science Into Action: Report of the National Advisory Mental Health Council Behavioral Science Workgroup. Bethesda, MD: US Dept. Health Hum. Serv., Publ. Health Serv., Natl. Inst. Health, Natl. Inst. Ment. Health; 2000.

80. Natl. Inst. Ment. Health. What do we know about implementing evidence-based practices (EBPs) and where can we go from here?. Baltimore, MD: Natl. Inst. Ment. Health; 2002.

81. Newhouse, RP.; Dearholt, SL.; Poe, SS.; Pugh, LC.; White, KM. John Hopkins Nursing Evidence-Based Practice Model and Guidelines. Indianapolis, IN: Sigma Theta Tau International Honor Society of Nursing; 2007.

83. Newton JS, Horner RH, Algozzine B, Todd AW, Algozzine K. A randomized wait-list controlled analysis of the implementation integrity of team-initiated problem solving processes. J School Psychol. 2012; 50:421–41.

84. O'Reilly CA, Caldwell DF, Chatman JA, Lapiz M, Self W. How leadership matters: The effects of leaders' alignment on strategy implementation. Leadership Quart. 2010; 21:104–13.

85. Oreg S, Berson Y. Leadership and employees' reactions to change: The role of leaders' personal attributes and transformational leadership style. Pers Psychol. 2011; 64:627–59.

86. Phills, JA. Integrating Mission and Strategy for Nonprofit Organizations. New York: Oxford Univ. Press; 2005.

87. Physical Activity Guidelines Advisory Committee. Physical Activity Guidelines Advisory Committee Report. Washington, DC: US Dept. Health Hum. Serv; 2008.

88. Podsakoff PM, MacKenzie SB, Bommer WH. Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. J Manage. 1996; 22:259–98.

89. Priestland A, Hanig R. Developing first-level leaders. Harv Bus Rev. 2005; 83:112–20. [PubMed: 15938442]

90. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons GA, et al. Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. Adm Policy Ment Hlth. 2011; 38:65–76.

91. Proctor LK, Landsverk J, Aarons GA, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: An emerging science with conceptual, methodological, and training challenges. Adm Policy Ment Hlth. 2009; 36:24–34.

92. Reiling, J.; Hughes, RG.; Murphy, MR. The impact of facility design on patient safety. In: Hughes, RG., editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville, MD: Agency for Healthcare Research and Quality (US); 2008. p. 167-92.

93. Rieckmann TR, Kovas AE, Fussell HE, Stettler NM. Implementation of evidence-based practices for treatment of alcohol and drug disorders: The role of state authority. J Behav Health Serv Res. 2009; 36:407–19. [PubMed: 18543111]

94. Robert Graham Center. The Patient Centered Medical Home: History, Seven Core Features, Evidence and Transformational Change. Washington, DC: 2007.

95. Rogers, C.; Farson, R. Active Listening. Chicago: Univ. of Chicago; 1955.

96. Rogers, EM. Diffusions of Innovations. New York: The Free Press; 1995.

97. Rotemberg JJ, Saloner G. Leadership style and incentives. Manage Sci. 1993; 39:1299–318.

98. Rubin RS, Dierdorff EC, Bommer WH, Baldwin TT. Do leaders reap what they sow? Leader and employee outcomes of leader organizational cynicism about change. Leadership Quart. 2009; 20:680–88.

99. Sallis JF, Floyd MF, Rodriguez DA, Saelens BE. Role of built environments in physical activity, obesity, and cardiovascular disease. Circulation. 2012; 125:729–37. [PubMed: 22311885]

100. Schein E. The role of the founder in creating organizational culture. Organ Dyn. 1983; 12:13–28.

101. Schein, E. Organizational Culture and Leadership. San Francisco: John Wiley & Sons; 2010.

102. Schneider, B. Organizational Climate and Culture. San Francisco: Jossey-Bass; 1990. p. 464

103. Schneider, B.; Ehrhart, MG.; Macey, WA. Organizational climate research: Achievements and the road ahead. In: Ashkanasy, NM.; Wilderom, CPM.; Peterson, MF., editors. Handbook of Organizational Culture and Climate. Newbury Park, CA: Sage; 2011. p. 29-49.

104. Schneider, B.; Ehrhart, MG.; Macey, WA. Perspectives on organizational climate and culture. In: Zedeck, S., editor. APA Handbook of Industrial and Organizational Psychology: Vol. 1. Building and Developing the Organization. Washington, DC: Am. Psychol. Assoc; 2011. p. 373-414.

105. Schneider B, Ehrhart MG, Mayer DM, Saltz JL, Niles-Jolly K. Understanding organization-customer links in service settings. Acad Manage J. 2005; 48:1017–32.

106. Schneider B, White SS, Paul MC. Linking service climate and customer perceptions of service quality: Test of a causal model. J Appl Psychol. 1998; 83:150–63. [PubMed: 9577232]

107. Siehl, C.; Martin, J. Organizational culture: The key to financial performance?. In: Schneider, B., editor. Organizational Climate and Culture. San Francisco: Jossey-Bass; 1990. p. 241-81.

108. Simon GE, VonKorff M, Rutter C, Wagner E. Randomised trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. Bmj. 2000; 320:550–54. [PubMed: 10688563]

109. Sklar M, Sarkin A, Gilmer T, Groessl E. The psychometric properties of the Illness Management and Recovery scale in a large American public mental health system. Psychiatry Res. 2012; 199:220–27. [PubMed: 22503383]

110. Sobo EJ, Bowman C, Aarons GA, Asch S, Gifford AL. Enhancing organizational change and improvement prospects: Lessons from an HIV testing intervention for veterans. Hum Organ. 2008; 67:443–53.

111. Stagner R. Corporate decision making: An empirical study. J Appl Psychol. 1969; 53:1–13. [PubMed: 5797825]

112. Stamatakis, KA.; Vinson, CA.; Kerner, JF. Dissemination and implementation research in community and public health settings. In: Brownson, RC.; Colditz, GA.; Proctor, EK., editors. Dissemination and Implementation Research in Health: Translating Science to Practice. New York: Oxford Univ. Press; 2012.

113. Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging research and practice: Models for dissemination and implementation research. Am J Prev Med. 2012; 43:337–50. [PubMed: 22898128]

114. Titler, MG. The evidence for evidence-based practice implementation. In: Hughes, RG., editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville, MD: Agency for Healthcare Research and Quality (US); 2008. p. 113-61.

115. U.S. Dept. Health Hum. Serv., Administration for Children and Families Office of Family Assistance. Implementation Resource Guide for Social Service Programs: An introduction to Evidence-Based Programming. Washington, DC: US Gov. Print. Off; 2010.

116. U.S. Dept. Health Hum. Serv. Mental Health: A Report of the Surgeon General. Rockville, MD: 1999.

117a. U.S. Dept Health Hum Serv. Report of the Surgeon General's Conference on Children's Mental Health: A National Action Agenda. Washington, DC: 2000.

117b. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. National outcome measures. Available at: http://www.nationaloutcomemeasures.samhsa.gov/NOMS.aspx?menuID=2

118. Ubbink DT, Guyatt GH, Vermeulen H. Framework of policy recommendations for implementation of evidence-based practice: A systematic scoping review. BMJ Open. 2013; 3(1)

119. Veterans Health Administration. Uniform Mental Health Services in VA Medical Centers and Clinics (VHA Handbook 1160.01). Washington, DC: Vet. Health Adm; 2008.

120. Waldman DA, Bass BM, Einstein WO. Leadership and outcomes of performance appraisal processes. J Occup Organ Psychol. 2011; 60:177–86.

121. Walumbwa FO, Orwa B, Wang P, Lawler JJ. Transformational leadership, organizational commitment, and job satisfaction: A comparative study of Kenyan and U.S. financial firms. Hum Resour Devel Q. 2005; 16:235–56.

122. Waring J, Currie G. Managing expert knowledge: Organizational challenges and managerial futures for the UK medical profession. Org Studies. 2009; 30:755–78.

123. Wooldridge B, Floyd SW. The strategy process, middle management involvement, and organizational performance. Strat Manage J. 1990; 11:231–41.

124. Zohar D. Safety climate in industrial organizations: Theoretical and applied implications. J Appl Psychol. 1980; 65:96–102. [PubMed: 7364709]

125. Zohar D. A group-level model of safety climate: Testing the effect of group climate on microaccidents in manufacturing jobs. J Appl Psychol. 2000; 85:587–96. [PubMed: 10948803]

126. Zohar D. Modifying supervisory practices to improve subunit safety: A leadership-based intervention model. J Appl Psychol. 2002; 87:156–63. [PubMed: 11916209]

127. Zohar, DM.; Hofmann, DA. The Oxford Handbook of Organizational Psychology. New York: Oxford Univ. Press; 2012. Organizational culture and climate; p. 643-66.