

Research and Evidence-Based Practices of Vocational Rehabilitation in Rural, Frontier, and Territory Communities

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Overview

In this chapter, we consider evidence-based practice (EBP) in the specific context of rural communities. Evidence-based practices (EBP) emerge from a process of evaluation that ensures the selection of the best approach to service delivery based on the current evidence or knowledge available. In EBP, context is important. The often quoted question posed by Paul (1967) identifies the crux of this issue: “What treatment, by whom, is the most effective for this individual with that specific problem, and under which set of circumstances” (p. 111, as cited in Leahy & Arikiosamy, 2010). In the present chapter, the “under which circumstances” part of that question is critical to the consideration of EBP in rural communities because the circumstances are not

necessarily the same for a client in a large city as for a client living in a rural area, frontier state, or territory. While practitioners in all areas and regions are encouraged and even mandated to use and apply EBP to their services, there is a real question as to whether EPBs developed in urban and suburban areas are relevant to clients who live in rural, frontier, and territory communities. This important awareness that services or approaches to rehabilitation that are effective for a client in an urban or suburban environment may not be effective for a client living in a rural area, frontier state, or territory has not yet received sufficient consideration. In this chapter, we will provide an overview of EBP, a brief history of how rehabilitation counseling has responded to the EBP mandate, and the relevance for practitioners. Next, we will review identified promising or EBP in rural contexts, and, finally, we propose how research and policy can serve to enhance the application of EBP in rural settings.

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Learning Objectives

At the completion of this chapter, the reader should be able to:

1. Describe what is meant by the term, “evidence-based practice.”
2. Explain the importance of evidence-based practice.

3. Identify some emerging practices in vocational rehabilitation.
4. Understand how rural context affects the implementation of EBP.
5. Explain how future research can be planned and executed to better respond to the needs of rural clients and practitioners.

Introduction

Rehabilitation counselors and related professionals have a central role in providing services that promote increased employment opportunities, self-sufficiency, well-being, and community inclusion to individuals with disabilities (Fitzgerald, Leahy, Kang, Chan, & Bezyak, 2016). In this role, rehabilitation counselors have an ethical imperative to provide the best possible care and treatment. Evidence-based practice is central to identifying and selecting the best treatment for a specific person in a given situation. The EBP movement has fundamentally altered the way healthcare services are provided (Chronister, Chan, Cardoso, Lynch, & Rosenthal, 2008). The term “evidence-based medicine” appeared in the US medical literature in the early 1990s and, since then, has permeated psychology, allied health, and counseling disciplines (Chan et al., 2010). Rehabilitation counseling has been criticized for being slow to embrace and pursue the identification of evidence-based practices. However, the research-based supporting rehabilitation counseling is broad and growing, and empirically supported practices are increasingly recognized and used in VR agencies (Leahy et al., 2014).

Rehabilitation counselors in rural, frontier, and territory communities share the same ethical imperatives as all rehabilitation counselors to provide services that are likely to be effective and non-harmful to the consumer, while providing sufficient information so that the individual may exercise informed choice in service planning and delivery (Coduti & Luse, 2015). Rehabilitation counselors have reported barriers to identifying and implementing EBPs, such as

insufficient time or knowledge to be able to review relevant research, lack of support and encouragement by supervisors and managers, and difficulty locating literature that is easily generalized to the setting or the consumer in question (Bezyak, Kubota, & Rosenthal, 2010; Fitzgerald et al., 2016). Counselors in rural settings face these barriers, but perhaps to an even greater extent due to the relative lack of research focused on the specific issues of consumers in rural communities. Additionally, rural counselors typically must work more independently, with fewer resources and less access to collaborating professionals. Travel requirements may also be different for rural counselors, with some having to travel great distances to see clients who are very spread out geographically. This additional responsibility puts more pressure on counselors and takes time away that otherwise could be spent accessing literature or attending trainings on EBP.

Despite these challenges, counselors and practitioners serving rural, frontier, and territory communities must be aware of and integrate EBP into their practice. In order to do so, they must have an understanding of what EBP is, where it came from, and why it has had such an impact on how we approach rehabilitation and related services.

Defining Evidence-Based Practice

Evidence-based practice is a process used in clinical decision-making by qualified professionals (Chan et al., 2010). It involves an interaction between the clinician’s judgment and experience, the best research evidence available, and the client’s values and preferences (Sackett, Strauss, Richardson, Rosenberg, & Haynes, 2000). The process is meant to ensure that clinicians make judicious decisions regarding care and treatment of clients through the identification of the clinical question, determination of the best practice or treatment, and then gathering and evaluating the evidence to support the utility of that approach in the given situation.

A hierarchy of evidence has been proposed to allow for uniform or shared standards by which to evaluate research evidence. The hierarchy ranks studies based on the strength of the research methods and trustworthiness of the results. Sample characteristics, research design, methodology, and internal and external validity are considered (University of Canberra, 2016). Winona State University has published a web-based toolkit to demonstrate the hierarchy, levels of evidence, and definitions: <http://libguides.winona.edu/c.php?g=11614&p=61584>. Evidence that meets the criteria for the higher levels of the hierarchy is considered more trustworthy than evidence that meets the criteria for lower positions on the hierarchy. At the top of the hierarchy are systematic reviews, followed by evidence syntheses, and then critically appraised article synopses. These types of evidence are considered “filtered information” and have already been appraised for quality by nature of inclusion into the synthesis or critically appraised synopsis. This information is appropriate for use in clinical decision-making and may provide greater guidance than other types of reports (University of Canberra, 2016). In the next level of the hierarchy are randomized controlled trials (RCTs), followed by cohort studies, and then other single study results. Information at this level is considered “unfiltered,” because the studies have not yet been analyzed in the aggregate or summarized into usable information. The question of whether the results are typical of the treatment and in the population in question has not yet been answered through aggregating these results with other similar studies on the same topic. The user will need to read, interpret, and evaluate the quality and appropriateness for application him or herself. Below these types of studies are background information or expert opinion, which is helpful for clinical decision-making but not as valuable. As qualified professionals then apply the practice or treatment and evaluate the effectiveness of care, this information is used in a continual loop of evaluation and improvement (Chan et al., 2010). An example of how this might happen is found in the [Case Study](#) box.

Case Study

Marcus is a licensed professional counselor working for a mental health and rehabilitation agency. He meets his newest client, Janine, who is referred to him for help getting a job. Janine is a 35-year-old single woman and she has a poor work history. She has a high school diploma, but soon after graduation, she began experiencing significant mental health symptoms and was diagnosed with bipolar disorder. She has held jobs on and off in her 20s and 30s, but has not been able to keep a job for more than 2 months. She receives social security benefits and uses them as her primary source of support. Janine states that she would really like to get a job and would like to work in a restaurant. She loves cooking for herself, and even though she doesn't really want to become a chef, she likes being around food and helping others find dishes that they will enjoy. Janine lives in Clearfield County, Pennsylvania and has her own car. She is willing to drive 30–45 min for work.

Marcus gathers as much information about Janine, her current situation, and her work history as he can. He uses what he knows to formulate his clinical question: *What is the best approach to helping Janine get a job, considering that she has not had a strong work history, experiences moderate mental health symptoms, receives social security benefits, and her educational qualifications are limited to her high school diploma?*

Marcus determines that, based on the results of several studies comparing methods, supported employment is the best practice to help Janine be successful. He has found studies comparing supported employment to more traditional vocational rehabilitation methods, as well as reviews of multiple studies evaluating the effectiveness of supported employment for consumers with mental health diagnoses and poor

work history. He is qualified to provide supported employment services, as his agency uses this model extensively, and so he works with Janine to find a job and then provides on-site support to her while she learns. He works in an advisory capacity with her employer so that she and her supervisor become used to working together, and Marcus helps Janine manage the stress of starting a new job, meeting new people, and continuing to participate in treatment and personal wellness around her work schedule. He also invites Janine to meet with a benefits counselor so that she can understand how her earnings will impact her benefits, if at all.

Marcus evaluates the effectiveness of the supported employment model with Janine and finds that it has been successful. Janine has a job in a small, family-owned restaurant; she works 2 days a week and assists with several tasks. Her employers are pleased with her performance so far, and Janine is happy with the hours she is working and feels like she is doing well. Marcus will continue to check in with Janine for as long as she needs it and may come back to provide more support if it becomes necessary.

Marcus and Janine made that look easy, didn't they? This example was more straightforward than what many counselors encounter in practice, but it does provide a demonstration of how a professional would go about engaging in EBP. Let's look at how Marcus approached his work with Janine and highlight how he used evidence-based practices to help him decide what to do. First, Marcus met with Janine and learned about her and her goals. Janine was out of work or working off and on for an extended period of time. She continues to experience mental health symptoms of bipolar disorder but participates in treatment and personal wellness activities to manage her condition. Janine expressed interest in working in a restaurant environment, because she loves

cooking for herself and loves helping other people find new foods to try that they will like. However, she does not want to cook or work in the kitchen. Once Marcus got to know Janine and her goals, he went through the steps of clinical decision-making with the support of EBP. In step 1, Marcus formulated his clinical question: *What is the best approach to helping Janine get a job, considering that she has not had a strong work history, experiences moderate mental health symptoms, and receives social security benefits and her educational qualifications are limited to her high school diploma?* This created a few sub-questions for him to search for evidence to answer the question: What is the most effective strategy to obtain employment when a person has a weak work history? Is supported employment effective for people with mental health diagnoses? Are there other ancillary services that can boost the effectiveness of supported employment for people who receive benefits? Marcus took these questions into step 2: seeking the best evidence available to answer the questions. Marcus searched through databases such as Medline and PsychInfo and found many sources of information to review. He found several studies evaluating the effectiveness of supported employment, including a meta-analysis by Campbell, Bond, and Drake (2011) evaluating the effect of the Individual Placement and Support (IPS) model compared with traditional vocational services for persons with severe mental illness. He was very interested in this work for a couple of reasons: (a) the population in the meta-analysis was relevant to his current work with Janine and (b) a meta-analysis is considered among the more convincing types of evidence to be considered. He took this information combined with the other sources of evidence that he gathered and discussed it with Janine. Marcus is trained in supported employment and is qualified to provide these services, so once he and Janine agreed that it was the best course of action he worked with her to find a work site, and then arranged with the employer to be able to provide on-site support as long as Janine needed it. He and Janine also evaluated the effectiveness of the approach and given her positive outcome, felt it was a good choice.

In other situations, the clinical question may be related to something where there is less available evidence. In this case, a practitioner may have to review other kinds of evidence or seek out expert opinion, as part of the process. In cases where the best available evidence suggests an approach where the practitioner is not qualified, it may become necessary to bring in another professional to collaborate or consult, or seek additional options to ensure that the person implementing the practice is skilled to do so. For rural practitioners, this may present a challenge if there is limited availability of other professionals in the area. In these cases, finding ways to collaborate and/or consult via distance are possible options.

Brief History of EBP and the Rehabilitation Counseling Response

The term “evidence-based medicine” first appeared in the medical literature in the early 1990s (Chan et al., 2010). It was established to promote systematic evaluation of medical research and to ensure that medical interventions were informed by more trustworthy findings than are possible from individual clinical studies (Chronister et al., 2008). Psychology followed (Chronister et al., 2008), and to date, the Clinical Psychology Division of the American Psychological Association (APA) has published a list of 80 treatments that are research supported (APA Presidential Task force, 2006; Society of Clinical Psychology, 2016). By pairing clinical judgments and selection of treatments with research evidence that has greater trustworthiness than single studies, practitioners can have increased confidence in decisions that are made and thus how treatment dollars are spent. There is a financial incentive to use EBP, in so far as it helps to increase service effectiveness and efficient use of resources (Chronister et al., 2008).

Historically, rehabilitation counseling was viewed as having a strong guiding philosophy, but few empirically supported practices to draw from and a research agenda that lacked scientific

rigor. Ten years ago, the US Government Accountability office (GAO) suggested that the Vocational Rehabilitation Program was lagging behind scientific advances (US GAO, 2005). As recently as 6 years ago, authors were criticizing rehabilitation counseling for not keeping up with related fields in the development of evidence-based practices (Chan et al., 2010; Tarvydas, Addy, & Fleming, 2010). For a time, it appeared that the discipline of rehabilitation counseling was resisting the EBP movement; criticisms and questions remained about whether or not this approach was consistent with the rehabilitation philosophy and tradition of encouraging the client to make decisions regarding interventions and employing the individualized approach to working with each person (Tarvydas et al., 2010). Others suggested that EBP results in “cookie-cutter health care,” where it “undermines the autonomy of clinicians, denying their expertise, insight, and judgment, as well as undercutting the patient’s right to make choices between alternative interventions and to prioritize outcomes” (Dijkers, Murphy, & Krellman, 2012, p. S169). Others questioned whether evaluation research where consumers received different interventions (i.e., intervention and control groups) was ethical or even feasible in rehabilitation settings, particularly considering the costs and need for relatively large sample sizes associated with the “gold standard” randomized controlled trials (Johnston et al., 2009). This investment (e.g., cost and number of participants necessary) seems particularly out of balance when findings do not apply to situations or questions that clinicians are facing and thus are not directly applicable to practice (Dijkers et al., 2012). Although these arguments are important to understand and consider, external pressures regarding funding and the viability of the discipline seem to have mandated that EBP be approached rather than avoided in rehabilitation settings.

Vocational rehabilitation in general has been empirically supported (Pruett et al., 2008). Results of literature reviews have detailed factors that relate to positive employment outcomes in rehabilitation settings (Crisp, 2005; Saunders, Leahy, McGlynn, & Estrada-Hernández, 2006).

A few specific services have been evaluated with positive findings, including skills training, supported employment, and counseling and the working alliance (Leahy et al., 2014). While these findings are extremely helpful and represent major progress, the broader question remains: what individual services, for which individual clients in particular situations contribute to the effectiveness of VR? It is good to know that VR is effective, but we do not yet have a clear understanding of which practices are the most, and least, effective.

Outcome research, with meaningful application toward improving services and employment outcomes, is typically the way to address these questions (Fleming, Del Valle, Kim, & Leahy, 2013; Leahy, Thielsen, Millington, Austin, & Fleming, 2009). The Rehabilitation Services Administration and the National Institute of Disability Independent Living and Rehabilitation Research (NIDILRR; formerly NIDRR) have emphasized the need to develop EBPs and provide outcome data supporting the effectiveness of the VR program (Brannon, 2010). Recently, rehabilitation counseling researchers have responded. Fleming et al. (2013) identified 35 studies in which specific VR services or models were empirically supported. These studies were categorized into seven areas: interagency collaboration, counselor education and customer outcomes, services to a targeted group, supported employment, empowerment and customer self-concept, essential elements of service delivery, and miscellaneous vocational services (Fleming et al., 2013). This review served to highlight areas in which evidence for effective practice is accruing but also underscored the limited scope of the existing research, the need for research using more rigorous research designs, and the need for more attention to replication of preliminary studies.

The NIDILRR-funded Rehabilitation Research and Training Center devoted to EBPs in VR (RRTC-EBP) recently completed comprehensive case studies of promising practices in four states (Leahy et al., 2014) and identified four more areas where models of service have been evaluated with promising results: post-secondary transition services, the Individual Placement

Support (IPS) model of supported employment, workplace social skills training, benefits counseling, and workplace support services. Others are pursuing randomized control trials of models of services that are directly relevant to VR agencies, and these efforts should be extended (Fraker et al., 2012). An example of this work is the Promoting the Readiness of Minors in Supplemental Security Income (PROMISE) grants, in which the effects of five core service components (formal agency-level partnerships, case management, benefits counseling and financial literacy training, career and work-based learning experiences, and training and information for parents) are being evaluated using experimental design with random assignment (Fraker, Mamun, & Timmins, 2015). The results of these projects will be useful in building the evidence base for rehabilitation services.

Although studies employing randomized controlled trials (RCT) are generally prioritized in terms of contributing to the development of EBP, the use of RCTs in the rehabilitation counseling research has been relatively limited. It is important to recognize, however, that other research designs also contribute to the development of EBP and may be more appropriate and more useful. In RCT, the act of randomly assigning participants to receive or not receive an intervention minimizes and controls for other factors that may lead to significant differences between groups. This makes the RCT a rigorous and convincing design, particularly when results are replicated. However, RCT may not be the best way to answer a clinical question when multiple personal and environmental factors influence the outcome under study (Dijkers, 2009). According to the GAO (2009):

...the evaluation literature cautions that as social interventions become more complex, representing a diverse set of local applications of a broad policy rather than a common set of activities, randomized experiments may become less informative. ... aggregating results over substantial variability in what the intervention entails may end up providing little guidance of what, exactly, works. (pp. 25–26)

In other words, interventions studied under highly controlled conditions may not be generalizable to

real-life settings (including rural settings), especially considering the heterogeneity and variation of VR clients and environments (US GAO, 2009). There is a risk of overlooking practices with great potential by solely relying on evidence from randomized experiments.

Alternatives to RCTs might be equally valid depending on the research question, including quasi-experimental comparison group designs, statistical analyses of observational data, and in-depth case studies. For a service system that addresses widely diverse needs among a varied clientele, no one type of approach to evaluating practice will be able to answer all questions equally well.

In summary, a number of conclusions can be made about the current state of EBP in VR. First, it is generally recognized that more research on effective VR practices and services is necessary. Second, a balanced approach to this research will be most effective. While studies using rigorous research designs, including RCTs, will be important to developing EBP and increasing professional and stakeholder confidence in VR, studies using alternate research designs will frequently be more feasible, practical, and more informative. Finally, after a relatively slow start, the rehabilitation counseling profession appears to be committed to increasing the research base, as evidenced in both large-scale and small-scale VR research efforts, and this expanding research base will continue to promote the development of EBP.

How EBP Is Used by Service Providers

The overriding principle guiding the provision of effective service delivery is to offer the best possible services based on the best clinical evidence from the available research (Chan, Tarvydas, Blalock, Strauser, & Atkins, 2009). At its core, rehabilitation counseling research is intended to provide information to both persons with disabilities and practitioners to effectively foster both independence and goal attainment (Bellini & Rumrill, 2009; Chan, Miller, Pruet, Lee, &

Chou, 2003). Despite the growing attention to EBP in rehabilitation counseling, however, a sizable gap persists between knowledge developed through research and the service delivery system (Chan, Rosenthal, & Pruet, 2008; Chan et al., 2009; Davis & Sproling, 2012). As noted, this gap is in part due to the inaccessibility of the research for busy practitioners and the limited avenues for dissemination beyond preservice education, professional journals, and professional trainings. Reducing this gap will involve changes for both researchers and practitioners. Knowledge translation is a critical element in this process of change.

Knowledge Translation

Knowledge translation (KT) is a dynamic and iterative process that includes not only the synthesis of knowledge through empirical research but also the ethically sound application of information to improve outcomes (Canadian Institutes of Health Research [CIHR], 2014). One of the overriding objectives of KT is to facilitate the adoption and application of evidence-based practices by practitioners. Following the dissemination of empirical research, practitioners need to have easy access to the findings, have clear explanations regarding how to implement interventions, and share best practices with colleagues (Liu, Anderson, Matthews, Nierenhausen, & Schlegelmilch, 2014). Despite recent research relating effective practices with positive VR outcomes, unemployment rates for people with disabilities continue to be abysmally low compared to people without disabilities (U. S. Department of Labor, 2012). To the extent that this reality reflects the gap between research and practice, the goal of KT is to afford practitioners better access to the research, and thus promote their ability to adopt and implement effective practices and interventions.

Although KT is one way to decrease the gap between evidence-based research and practitioner implementation, other potential barriers remain. For EBP to be successfully implemented by practitioners, the limitations of the end users

need to be understood (Anderson, Matthews, Lui, & Nierenhausen, 2014). Some of barriers to the acquisition and eventual application of EBP cited in the literature include insufficient agency resources and/or acceptance of change, limited time, and lack of understanding of research methods (Anderson et al., 2014; Baumbusch, et al., 2008; Graham et al., 2013). VR counselors, on average, have exceedingly high caseloads (Dew, Alan, & Tomlinson, 2008), which often preclude their ability to engage in educational activities or research review. In order to instill in VR counselors the importance of employing EBP, the organizational culture must be one that is willing to accept change and encourage employees to be innovative and remain current on new approaches to improve outcomes (Rijal, 2010; Schultz, 2008). Unfortunately, given the current financial challenges facing many VR organizations, this culture may be aspirational but not fully adopted by the leadership. Finally, Bezyak et al. (2010) reported that many rehabilitation counselors feel ill-equipped with the requisite research knowledge to sufficiently assess research findings and employ EBP analysis, and many are not well versed with utilizing academic search strategies to effectively locate EBP literature.

Needless to say, solutions to these issues are needed and would likely prove beneficial to the ultimate implementation of EBP. However, even as rehabilitation counseling professionals become more familiar with and adept at identifying EBP, it will remain important that professionals pay attention to the population for whom the given intervention was studied (e.g., demographics, disability, contextual factors), which may create challenges when applying interventions or services to populations (e.g., rural consumers) that were not specifically included in, and may not resemble in some important way, the original sample. The Research and Training Center on Disability in Rural Communities (<http://rtc.ruralinstitute.umt.edu>) specializes in projects and training that are relevant to rural consumers and offers technical assistance, which may be helpful in trying to apply research findings in the rural context.

How EBP Impacts Policy

Accountability for the effectiveness and efficiency of services and outcomes has been mandated by funding organizations since the passage of the Rehabilitation Act of 1973 and continues today within the context of increasing funding constraints (Leahy et al., 2009; Kosciulek, 2010; Rubin & Roessler, 2008). Undoubtedly, all rehabilitation counseling professionals appreciate the fiscal challenges associated with the provision of services in the public sector. There continues to be increased pressure from stakeholders to close more cases at a faster rate in an attempt to continue to demonstrate efficacy and secure state-federal funding. Considering the current concern over resources, government agencies prefer to focus funding toward those services that have demonstrated improved outcomes (Chan et al., 2008, 2010). One example of the paradigm shift toward evidence-based policy decisions can be found in a memorandum issued by the President's Office of Management and Budget (Zients, 2012), which instructs federal agency department heads to consider the following when making resource allocation and grant decisions: "Where the evidence is strong, we should act on it. Where evidence is suggestive, we should consider it. Where evidence is weak, we should build on the knowledge to support better decisions in the future" (p. 1).

According to the National Research Council (2012), the process of effectively applying scientific evidence in policy decisions consists of identifying the problem to be addressed, selecting target groups, assessing the importance of the issue to be addressed, explaining the relevance of the need for change, and evaluating the results after implementation. Evidence is only one variable taken into consideration when policy decisions are being considered, and other factors fall outside the scope of this chapter, but the onus of supplying the research falls squarely on those researchers for whom policy affects. The National Institute on Disability and Rehabilitation Research (NIDRR) and the Rehabilitation Services Administration (RSA)

have both addressed the concerns about the development of EBPs by concluding that in a resource-limited market, evidence of the effectiveness of practices can inform programmatic funding decisions in a more rational and equitable way (Brannon, 2010). Furthermore, the Work Incentives Improvement Act of 1999 and the Workforce Investment Act of 1998 both require public vocational rehabilitation organizations to demonstrate effectiveness in order to maintain and increase funding (Kosciulek, 2004). As the Workforce Innovation and Opportunity Act (WIOA) is being implemented, accountability and attention to core performance indicators are increasingly emphasized.

Clearly, policies affect the provision of services provided by rehabilitation counselors and ultimately the outcomes experienced by consumers. Federal agencies that are responsible for policy decisions need to be provided with as much information as possible to allow them to make informed determinations about how to most effectively guide the policy debate. Moreover, this means that in order to be effective, evidence-based research must be presented in practical terms and application in order to adequately inform policy decisions (Rogers & Martin, 2009). Although research indicates that the evidence on the most effective and efficient ways to deliver services remains sparse, an increased focus on EBP can afford policy makers and administrators guidance for improving programs and policies (Kosciulek, 2010). Data may be available demonstrating the overall effectiveness of rehabilitation counselor interventions, but there is a call, indeed, for increased evidence on what specific interventions result in what outcomes for whom. For the viability of the rehabilitation counseling profession, favorable policies and funding resources need to be maintained and improved. EBP is one essential component demonstrating the value of the profession in the lives of those with disabilities. Given the current state of budgetary constraints, government agencies are asking difficult questions about rehabilitation outcomes and demanding objective evidence to justify their ongoing support (Chan et al., 2008).

Rural Services and EBP

Rural, territory, and frontier communities often have a vastly different landscape of services and availability than urban and suburban areas. As is discussed in many other sections of this text, residents face disproportionate poverty and heightened prevalence of disability and chronic health issues, including substance use disorders. Communities are often isolated, requiring that residents fend for themselves and work together to ensure that their needs are met. Many rural communities are losing residents due to difficulty in the local economy and young residents moving away for college or work and not returning home. However, rural communities prove to be incredibly resilient as they respond to crises, reduced public funding because of reduced tax base, and natural disasters. The “take care of our own” philosophy frequently extends to all residents, including those with disabilities. While service organizations face multiple challenges including funding, recruitment and retention of qualified professionals, and serving clients who are geographically spread out with limited transportation, professionals are remarkably adept in filling required roles and are dedicated to meeting the needs of the community. We present this discussion of EBP in rural communities with the acknowledgment that working in a rural community is different than working in urban areas. Counselor training often lacks attention to rural issues, and some new professionals accept jobs in rural areas with limited preparation for the realities. Along the same lines, utilizing EBPs in rural communities will not be the same as it is in urban areas. The following is a review of EBPs within the rural context, with some addition of promising practices in related fields that have been successful in rural communities.

What Works in Rural Areas?

The profession of rehabilitation counseling has limited EBPs from a traditional sense but also has a collection of promising and empirically based

interventions. Although the evidence-based service delivery model implemented by most rehabilitation professionals in urban settings is likely applicable to those living in rural communities, as a profession, rehabilitation counselors are charged with utilizing those practices that have demonstrated effectiveness and efficacy for the population being served. In fact, for decades, rehabilitation counseling has been criticized for its urban focus and inapplicability of proffered services in rural settings (Bitter, 1972; Seekins, Ravesloot, & Dingman, 1989). As a profession, rehabilitation counseling has gradually begun to recognize the importance of EBP, not only for improving outcomes based on a theory-driven research agenda but also for the viability and continued growth of the field. Considering this, researchers need to continue to press forward to provide conceptually clear, evidence-based strategies to practitioners, which includes a focus on the inherent challenges of rural service delivery. In the strictest sense, very few, if any, high-quality EBPs exist for rural communities. Therefore, making evidence-based decisions for rural consumers is not likely to be based on research specific to the population but rather based on inferences from broad populations that are either unspecified or likely to be urban or suburban. Two of the major barriers to the use of EBPs are the lack of generalizability of findings and the application of research findings to individual (rural) consumers (Bezyak et al., 2010).

Significant evidence does exist for some of the EBP constructs and interventions routinely used by rehabilitation counselors. These include, for example, establishing a working alliance, skills training, and supported employment. There is little doubt that these strategies and services improve outcomes across different populations, and there is no research-based reason to think that these are not equally effective across settings. Furthermore, when considering the currently accepted EBPs in rehabilitation counseling, evidence clearly supports the effectiveness and efficacy of each modality across a wide range of individuals. That being said, in accordance with rigorous scientific exploration, one should consider whether or not research with a particular

group has been thoroughly completed. How do skills training, the working alliance, and supported employment work in rural areas? How does the effectiveness compare with principally urban areas? One could argue, undoubtedly, that these EBPs are effective in all populations, assuming adherence to the established protocols (i.e., fidelity). Although this may be a reasonable assumption, for the rehabilitation counseling profession to be viewed as empirically sound, interventions should and must be based on rigorous and methodologically solid validation and utilization.

Understanding the challenges faced by practitioners providing services to rural consumers and how these challenges affect evidence-based service delivery is the crux of the problem. For example, affording consumer's choice regarding employment options is a critical factor in successful supported employment. Choice, according to Wehman and Kregel (1998), involves "having more than one option from which to make a selection" (p. 9). In many areas of the country, occupational choices may be extensive, but in some rural areas, vocational choices may be extremely limited (Economic Research Service, 2012). Such limitations have potential implications for both the process and outcome of SE services.

The working alliance is an amalgamation of building bonds, establishing goals, and developing tasks (O'Sullivan, 2012). Research has demonstrated that consumers who perceive a positive working alliance with the service provider typically experience more positive outcomes (Donnell, Strauser, & Lustig, 2004; Lustig, Strauser, Rice, & Rucker, 2002; Schronberger, Humle, Zeeman, & Teasdale, 2006). How might the experience of counselors and clients in rural areas affect the development and experience of a positive working alliance? One of the necessary factors for developing a positive working alliance centers on building relational bonds. Due to the inherent geographic and transportation barriers, which can severely limit interpersonal contact, a client and counselor may not have the same level of contact as a dyad in a more urban area. Although limited and dated, there is evidence

that the greater the distance between counselor and consumer, the poorer the counselor-consumer relationship (Bitter, 1972; Rojewski, 1992). Alternately, clinicians who live and work in rural communities are often well known by, and may have multiple relationships with residents, which may potentially make the development of a counseling working alliance easier or more difficult.

One of the most glaring challenges to achieving positive outcomes in rural communities is limited or nonexistent public transportation options. Coupled with relatively limited employment opportunities in rural areas, the lack of transportation precludes consumers from considering jobs in neighboring communities. Moreover, consumers in rural areas without public transportation often have difficulty getting to VR and other necessary appointments. (For a full discussion about rural transportation issues, readers are referred to Chap. 33 of this book).

Community Navigators

Community navigator programs are an example of an evidence-based practice model that has been designed specifically for, and found to be very effective with, serving people living in rural or isolated areas. Public health initiatives have capitalized on the value of channeling community members to help each other locate resources and overcome barriers to care. In situations where treatment or care is received away from the community and the professionals providing the care are not familiar with the client's community, ensuring follow-up and continued case management is difficult without a local contact to assist. In a community with few residents, it is not expected that a critical mass of individuals with the same disability issues and needs is easily found. One may return home from intensive acute treatment without knowledge of or familiarity with local resources to help continue management of a disability or health condition. The existence of community navigators who can help a person locate and arrange continued care can mean the difference between being able to manage a condition or disability to maintain optimal

function or not doing so and experiencing deterioration and symptom exacerbation as a result. One such example is found in rural Kentucky, through the Kentucky Appalachian Rural Rehabilitation Network (KARRN; Kitman & Hunter, 2011). This program is further described in Chap. 36. This program is an excellent example of an evidence-based program shown to be effective in rural areas.

Discussion Box 38.1

What are the challenges in developing EBP for counseling in rural areas?

In the chapter, we learned that EBP came out of evidence-based medicine, and that counseling fields have been slower to adapt EBP than other health-related fields. Why is that? There are a few contributing factors. One thing to consider is the different kinds of studies that generate the "evidence" in EBP and how they contribute to the knowledge base. Researchers, when planning studies, are always balancing ensuring the highest level of validity and confidence in the results with practical considerations of being able to carry the project through. Some of the practical issues relate to the sample—such as will we be able to recruit enough participants that meet our criteria? Will people stay enrolled in our study long enough for us to be able to see an effect of a treatment? Will we be able to see that the participants who are enrolled were all given the same treatment, and was it delivered the way we intended? There are two main kinds of validity to consider: (a) internal validity or how well the study is performed with respect to being able to isolate the effects of the treatment as opposed to anything else that might have caused a change and (b) external validity or the extent to which the results of the study can be generalized beyond the specific situation under which the study was performed. A study may be performed under very strict

conditions and have high internal validity, but be so specific to the persons and conditions in your sample that you would not be confident that the same results would be found in other people in the community. Conversely, a study may be easily generalizable, but due to variations in settings, characteristics of participants—or other reasons—may have some threats to internal validity that make it hard to be confident that the treatment was responsible for the change and not something else. Both types of validity are critical to developing EBPs for counseling and rehabilitation settings and come with their own challenges.

As we learned earlier, the highest level of evidence comes from not just one study, but from several studies in a meta-analysis or systematic review. However, in order to do a meta-analysis or systematic review, there must be a large enough number of studies to review and consider in this kind of summary. The studies must contain enough information about the sample, the treatment, the treatment effects, and be similar enough to be able to compare them. As of now, it is difficult to find sufficient numbers of studies that focus on a specific population, applying the same intervention to be able to do a meta-analysis or systematic review. There are even fewer studies available that focus on residents from rural, frontier, or territory communities. Until we build enough of a literature base to be able to summarize findings across several well-designed studies, practitioners working in rural areas are at a disadvantage in accessing EBPs. However, this does not mean that practitioners are not applying interventions that are successful and effective. The challenge lies in evaluating and recording these successes so that they can be better understood.

Future Directions in EBP for Rural Practitioners

What works in rural areas? From an EBP in VR perspective, at this point, we don't fully know. Due to the lack of attention to rural rehabilitation in the rehabilitation counseling research, there are few empirical answers to this question. One approach that will inform EBP research in rural areas is learning the needs of the end users (i.e., practitioners). Through open dialogue and information gathering, researchers can begin to understand the nature of the problem and begin to search for possible solutions. In the literature, this gap between research and practice has been referred to as a chasm, which needs to be addressed in an attempt to improve innovative service delivery (Murray, 2009). The process of KT offers an important means of bridging the gap. Participatory action research (PAR) has also been discussed as an important approach to reducing the gap between research and practitioners (Anderson et al., 2014). PAR is defined by Green et al. (2003) as “systematic inquiry, with the collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting change” (p. 419).

One of the beneficial aspects of PAR is that practitioners and consumers are involved in determining what needs to be addressed. This is particularly important to those working in rural areas so that specific barriers and potential solutions can be addressed. This process is predicated on the development of effective working relationships between researchers, practitioners, and consumers (Hergenrath, Geishecker, McGuire-Kuletz, & Rhodes, 2010). Through the establishment of a collaborative approach between rehabilitation researchers and practitioners, the focus of research and subsequent dissemination could be enhanced, resulting in improved outcomes for consumers (Chan et al., 2009). This engagement of practitioners as valued partners in the research process will be critical as rehabilitation counselors move toward adoption of EBP (Anderson et al., 2014).

Another research and evaluation framework that has received significant attention in the health and rehabilitation literature is the RE-AIM model (Glasgow, Vogt, & Boles, 1999). As Strauser and Wong (2010) pointed out, there is a need to not only focus on efficacy-based approaches but also to more broadly assess the impact of interventions on consumers in particular settings. Of particular interest, RE-AIM strives to improve external validity, which is one of the challenges with attempting to generalize results to predominantly rural communities. The RE-AIM model consists of five dimensions: *Reach* (e.g., participants from a defined population), *Efficacy* (e.g., both positive and negative outcomes), *Adoption* (e.g., representativeness of settings [vocational rehabilitation, center for independent living] that adopt a given intervention), *Implementation* (e.g., practitioners delivering the intervention as intended), and *Maintenance* (e.g., replicable and long-lasting interventions; Glasgow et al., 1999). RE-AIM allows for researchers to clearly define the reach of their research efforts regarding particular demographic variables, disability type, etc., which makes a valuable addition to the creation of rural EBP. Once the participants have been defined, the intervention implemented, and the efficacy determined, conclusions may be drawn as to the appropriateness of the given intervention for the specific population; thus begins the process of establishing EBP. RE-AIM stresses the importance of involving the target audience (e.g., consumers, practitioners) in intervention design from the beginning to provide meaningful outcomes (Strauser & Wong, 2010).

Although limited research has been focused on rural consumers and their unique challenges, both PAR and RE-AIM are promising models for increasing research, and ultimately EBP, in such communities. Researchers would benefit from working closely with end users in the development of research agendas, as they would be able to provide potential solutions to specific and pertinent issues. Quality research needs to have satisfactory external validity to allow practitioners

to be confident that the results are generalizable to his/her particular setting. PAR and RE-AIM are not the only options for improvement, but they undoubtedly have merit and should be considered when attempting to determine what works in rural areas.

Increasing Availability and Use of EBP in Rural Communities

One of the greatest barriers to implementing EBP is the issue of counselor time constraints. Several researchers have reported that having no or little time to find or use research evidence is one of factors that precludes EBP implementation (Anderson et al., 2014; Graham et al., 2013). Besides time constraints, extant literature cites insufficient organizational resources, lack of research availability, and counselors being unskilled with research methods (Baumbusch et al., 2008; Oliver, Innvar, Lorenc, Woodman, & Thomas, 2014). Yet despite the identified barriers, counselors overwhelmingly express an interest in receiving research and training in areas that would result in improved service provision (Anderson et al., 2014). The overriding challenge is to identify effective practices for bridging the gap between research and practice.

Although counselors who work in rural areas do have some unique challenges, the recommendations for how to move forward with EBP in service delivery may be equally effective in both rural and non-rural settings. The organizational environment is a critical factor in whether or not the discovery and sharing of new knowledge is encouraged (Rai, 2011). Fostering an encouraging and facilitative organizational culture that allows practitioners the time and flexibility to engage in KT activities is essential to the overall effectiveness of service delivery. Organizations allowing for increased autonomy and discretion of counselors tend to be more amenable to innovation and informal exchanges of knowledge (Ruppel & Harrington, 2001). Accomplishing such organizational culture change requires a

paradigm shift, which is necessary to inform EBP and continue to grow as a profession (Tarvydas et al., 2010). In attempting to bridge the gap, organizations would be well served to afford counselors time on a regular basis to be reserved for research, reading, and attending educational conferences. For change to occur, it is incumbent upon the organization to support the associated activities.

Assuming organizational support, the issue becomes how to address the reported barriers of lack of research availability and the frequently reported lack of counselor research knowledge or capacity in reviewing research articles. Several potential solutions have been proposed in the literature including educational meetings in which experts identify and present key messages in ways that are easily understood and assimilated by different audiences (Forsetlund et al., 2009), educational outreach where a trained person meets providers in their own setting to provide novel information and research findings (e.g., in-services; O'Brien et al., 2007), trainings to teach practitioners how to find and evaluate research through the internet, and rehabilitation counseling journal clubs, which is a group of practitioners who meet on a regular basis to critically evaluate research articles (Kosciulek, 2010; Mobbs, 2004; Russell, Bean, & Barry, 2006). The majority of the aforementioned solutions (e.g., educational meetings, educational outreach, journal clubs) have been well validated empirically.

The overriding factor that must be present for KT to be successful is the collaborative desire to improve knowledge, understanding, and outcomes. Moreover, in order for the gap to be bridged and outcomes to improve, evidence-based knowledge and interventions must be translated practically with corresponding application (Rogers & Martin, 2009). In order for EBP specific to particular populations to be satisfactorily applied, researchers must realize the limitations faced by practitioners and administrators and meet the community where it is, using effective strategies to provide relevant information (Anderson et al., 2014; Hergenrath et al., 2010; Rogers & Martin, 2009).

Research Box 38.1 See Kinoshita et al. (2013)

Determining what constitutes EBP and where to locate appropriate literature is an essential component of quality service delivery. The following is an example of the process of moving from empirical- to evidence-based practice through the use of a meta-analysis. We performed a search of the Cochrane Library seeking meta-analyses of supported employment and have chosen one match for demonstration purposes. This review addresses the employment disparities of individuals with severe mental illness. The authors sought to determine the effectiveness of supported employment (SE) and Individual Placement and Support (IPS; a carefully specified form of SE) versus other approaches to finding employment (e.g., job workshops, job counseling, peer support, partnerships with business). The review consisted of 2259 individuals with severe mental illness drawn from 14 randomized controlled trials. The conclusions confirmed the effectiveness of SE regarding two outcomes: (a) SE increases the length of time for an individual's employment and (b) SE resulted in quicker job placement.

Title: Supported Employment for Adults with Severe Mental Illness

Objective: To review the effectiveness of SE compared to other VR approaches.

Method: Meta-analysis. A search of the Cochrane Schizophrenia Group Trials Register was performed, and randomized controlled trials focusing on people with severe mental illness, of working age, and in whom SE was compared to other approaches were selected for inclusion.

Results: SE significantly increased the levels of employment obtained throughout the course of the studies and resulted in increased length of competitive employment compared to other approaches.

Conclusions: Although not all of the data were considered high-quality evi-

dence, the overall results of the meta-analysis suggest that SE is an effective strategy for improving a number of vocational outcomes for individuals with severe mental illness.

Questions

1. What is the difference between high-quality and low-quality evidence?
2. Why is a meta-analysis considered stronger than individual empirical studies?
3. What is a good resource for finding meta-analyses or systematic reviews?

Summary

In this chapter, we considered evidence-based practice (EBP) in the specific context of rural communities. The field of counseling, and VR in particular, is still in a phase of adopting EPB as a service mandate. EBPs are being developed, but there are questions regarding the extent to which rural communities are being included in these research efforts. Context is critical, and approaches such as PAR and RE-AIM are argued to be useful to ensure sufficient coverage of rural issues in outcome research. Practitioners in rural communities face challenges that are unique from their colleagues working in urban and suburban settings. Having to do more with less and adopt a more generalist approach to services to meet client needs add pressure to the day-to-day for rural counselors. However, the ethical imperatives of identifying the best approach, for this client, in this particular situation are clear. Agencies can implement strategies such as in-service trainings, journal reading clubs, and university partnerships to bring greater awareness of EBP to counselors. Agency culture that welcomes change and innovation and allows for flexibility and counselor control of time and schedule may also support staff in making the effort to be up to date and knowledgeable regarding EPB. Future efforts to include rural samples in

outcome research and work directly with rural practitioners to plan and execute studies will be very useful in developing a more universally applicable knowledge base.

Resources

Winona State University web-based EBP toolkit: <http://libguides.winona.edu/ebptoolkit>
 Cochrane Library <http://cochranelibrary.com>
 National technical Assistance Center on Transition (NTACT): <http://transitionta.org>
 Research and Training Center on Disability in Rural Communities: <http://rtc.ruralinstitute.umn.edu>
 Rehabilitation Research and Training Center for Evidence Based Practice in Vocational Rehabilitation: <http://research2vrpractice.org>

Learning Exercises

Self-Check Questions

1. Explain how evidence-based practice (EBP) influences service policy.
2. What is the difference between “filtered” and “unfiltered” information? What does it mean for the practitioner?
3. Why are counseling and VR services considered to be behind other related fields in implementing EBP?
4. Draft an explanation for EBP that you might share with a client and/or family members, telling them about the process and the benefits.
5. Think of a clinical question that would assist you in your practice. Search the literature and see what kind of evidence you find.

Field-Based Experiential Assignments

1. Divide students into two groups, and have one group search for all individual articles supporting the practice of the working alliance and the other group search for a meta-analysis

- of the same. Have the students discuss what they have discovered and why the meta-analysis provides stronger support.
2. Choose a review from the Cochrane Library and instruct the students, in groups, to review and discuss the merits and weaknesses of the literature used in the meta-analysis.
 3. Students will collaborate in groups to identify a clinical question that is relevant in a given setting. Then, they will assess the literature to identify practices that are empirically supported for the situation. Finally, they will evaluate the quality of the support of the practices and determine which has the greatest empirical support.

Multiple Choice Questions

1. The RE-AIM model is a valuable framework for research that will contribute toward EBP because:
 - (a) It requires that researchers stay broad enough so that findings will apply to everyone.
 - (b) The “E” in the acronym means evidence.
 - (c) Emphasis is on the target audience, and clearly defining the population and sample.
 - (d) The model is not useful for EBP.
2. One of the most challenging aspects of applying EBP in rural practice is:
 - (a) People in rural areas do not believe in EBP.
 - (b) Research is typically not carried out within the rural context.
 - (c) Rural counselors often have to work alone.
 - (d) Caseloads in rural areas are much higher.
3. Participatory action research (PAR) is suggested as a useful approach to building EBP in rural communities because:
 - (a) PAR requires that researchers work with practitioners to plan and execute studies.
 - (b) PAR can only be done in rural settings.
 - (c) PAR requires equal attention to rural and suburban areas.
 - (d) PAR requires that researchers plan studies inclusive of all populations.
4. A major problem associated with the lack of EBP available for rural practitioners is:
 - (a) Counselors have limited evidence to apply to clinical decisions.
 - (b) Ethically, if there is no EBP, counselors cannot work with any clients.
 - (c) Clients will be upset with the low quality of services provided.
 - (d) Supervisors have to work twice as hard to help counselors.
5. What aspects of organizational culture might support counselors in learning more about EBP?
 - (a) Strict requirements
 - (b) Encouragement of innovation
 - (c) Policy
 - (d) Supervision
6. Knowledge translation (KT) is best defined as:
 - (a) An iterative process that includes the synthesis of knowledge through empirical research and ethically sound application of information to improve outcomes
 - (b) A process of identifying research findings and translating them into different languages to promote global information sharing
 - (c) Knowledge sharing, including findings from different fields, as well as different cultures
 - (d) A consultation process where the researcher comes to visit the agency and explains his or her latest study
7. One of the practices identified in the chapter that has shown promise in rural communities was:
 - (a) Ride sharing programs
 - (b) Agricultural initiatives
 - (c) Dual relationships
 - (d) Community navigators
8. External validity is best defined as:
 - (a) The level of control the researcher has over the variables to rule out alternative explanations for findings.
 - (b) The extent to which the findings are generalizable beyond the sample population.

- (c) The confidence the researcher has in the measures used.
- (d) How honest the researcher is while performing the study.
9. A strategy identified to help practitioners become more comfortable reading empirical studies was:
- (a) Tutoring sessions
- (b) Periodic testing
- (c) Study times
- (d) Journal clubs
10. In order to effectively use EBP as a clinical decision-making tool, what should the practitioner do once an intervention is selected?
- (a) Check the literature one more time.
- (b) Evaluate the effectiveness with this particular client.
- (c) Ask his or her supervisor.
- (d) Test an alternative hypothesis.

Key

1. C
2. B
3. A
4. A
5. B
6. A
7. D
8. B
9. D
10. B

References

- Anderson, C. A., Matthews, P., Lui, J., & Nierenhausen, E. (2014). Engaging vocational rehabilitation counselors in knowledge translation processes: A participatory action approach. *Rehabilitation Counselors and Educators Journal*, 7(2), 8–18.
- APA Presidential Task Force. (2006). Evidence-based practice in psychology. *American Psychologist*, 61(4), 271–285.
- Baumbusch, J. L., Kirkham, S. R., Khan, K. B., McDonald, H., Semeniuk, P., Tan, E., ... Anderson, J. M. (2008). Pursuing common agendas: A collaborative model for knowledge translation between research and practice in clinical settings. *Research in Nursing and Health*, 31, 130–140.
- Bellini, J. L., & Rumrill, P. D. (2009). *Research in rehabilitation counseling: A guide to design, methodology, and utilization* (2nd ed.). Springfield, IL: Thomas Publishing.
- Bezyak, J., Kubota, C., & Rosenthal, D. (2010). Evidence-based practice in rehabilitation counseling: Perceptions and practices. *Rehabilitation Education*, 24(1&2), 85–96.
- Bitter, J. A. (1972). Some viable service delivery approaches in rural rehabilitation. *Rehabilitation Literature*, 22, 354–357.
- Brannon, R. (2010). Forward. *Rehabilitation Education*, 24(3&4), 177–178.
- Campbell, K., Bond, G. R., & Drake, R. E. (2011). Who benefits from supported employment: A meta-analytic study. *Schizophrenia Bulletin*, 37, 370–380.
- Canadian Institutes of Health Research. (2014). *III knowledge translation*. Retrieved from <http://www.cihr-irsc.gc.ca/e/46977.html>
- Chan, F., Bezyak, J., Ramirez, M. R., Chui, C., Sung, C., & Fujikawa, M. (2010). Concepts, challenges, barriers, and opportunities related to evidence-based practice in rehabilitation counseling. *Rehabilitation Education*, 24(3&4), 179–190.
- Chan, F., Miller, S., Pruett, S., Lee, G., & Chou, C. (2003). Rehabilitation research. In D. Maki & T. Riggat (Eds.), *Handbook of rehabilitation counseling* (pp. 159–170). New York: Springer.
- Chan, F., Rosenthal, D. A., & Pruett, S. (2008). Evidence-based practices in the provision of rehabilitation services. *Journal of Rehabilitation*, 74(2), 1–5.
- Chan, F., Tarvydas, V., Blalock, K., Strauser, D., & Atkins, B. (2009). Unifying and elevating rehabilitation counseling through model-driven, diversity-sensitive evidence-based practice. *Rehabilitation Counseling Bulletin*, 52(2), 114–119.
- Chronister, J., Chan, F., da Silva Cardoso, E., Lynch, R. T., & Rosenthal, D. A. (2008). The evidence-based practice movement in healthcare: Implications for rehabilitation. *Journal of Rehabilitation*, 74(2), 6–15.
- Coduti, W. A., & Luse, M. M. (2015). Rural ethics and mental health: An overview for rehabilitation counselors. *Journal of Applied Rehabilitation Counseling*, 46(1), 40–47.
- Crisp, R. (2005). Factors related to vocational outcome: Trends for six disability groups. *Journal of Rehabilitation*, 71(4), 30–38.
- Davis, S. J., & Sproling, S. (2012). The research to practice gap in rehabilitation in the era of evidence-based practices. *Rehabilitation Counselors and Educators Journal*, 6(1), 103–108.
- Dew, D. W., Alan, G. M., & Tomlinson, P. (2008). *Recruitment and retention of vocational rehabilitation counselors* (Institute on Rehabilitation Issues Monograph No. 33). Washington, DC: George Washington University. Center for Rehabilitation Counseling Research and Education.
- Dijkers, M. P. (2009). The value of “traditional” reviews in the era of systematic reviewing. *American Journal of Physical Medicine & Rehabilitation*, 88(5), 423–430.
- Dijkers, M. P., Murphy, S. L., & Krellman, J. (2012). Evidence-based practices for rehabilitation professionals: Concepts and controversies. *Archives*

- Physical Medicine and Rehabilitation*, 93(Supplement 2), S164–S176.
- Donnell, C., Strauser, D., & Lustig, D. (2004). The working alliance: Rehabilitation outcomes for persons with severe mental illness. *Journal of Rehabilitation*, 70(2), 12–18.
- Economic Research Service. (2012). Retrieved from <http://www.ers.usda.gov/statefacts/US.htm>
- Fitzgerald, S., Leahy, M. J., Kang, H., Chan, F., & Bezyak, J. (2016). Perceived preparedness to implement evidence-based practice by certified rehabilitation counselors: A qualitative content analysis. *Rehabilitation Counseling Bulletin*, early online. doi: 10.1177/0034355216659233.
- Fleming, A. R., Del Valle, R., Kim, M., & Leahy, M. J. (2013). Best practice models of effective vocational rehabilitation service delivery in the public rehabilitation program: A review and synthesis of the empirical literature. *Rehabilitation Counseling Bulletin*, 56(3), 146–159.
- Forsetlund, L., Bjørndal, A., Rashidan, A., Jamtvedt, G., O'Brien, M. A., Wolf, F., ... Oxman, A. D. (2009, April 15). Continuing education meetings and workshops: Effects on professional practice and health care outcomes. *Cochrane Database System Review* (2). doi: 10.1002/14651858.CD003030.pub2.
- Fraker, T., Mamun, A., Manno, M., Martinez, J., Reed, D., Thompkins, A., & Wittenberg, D. (2012). *The social security administration's youth transition demonstration projects: Interim report on West Virginia youth works*. Washington, DC: Mathematic Policy Research.
- Fraker, T., Mamun, A., & Timmins, L. (2015). *Issue brief: Three-year impacts of services and work incentives on youth with disabilities*. Washington, DC: Mathematica Center for Studying Disability Policy.
- Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: The RE-AIM framework. *American Journal of Public Health*, 89, 1322–1327.
- Graham, C., Inge, K., Wehman, P., Murphy, K., Revell, W. G., & West, M. (2013). Moving employment research to practice: Knowledge and application of evidence-based practices by state vocational rehabilitation agency staff. *Journal of Vocational Rehabilitation*, 39, 75–81.
- Green, L. W., George, M. A., Daniel, M., Frankish, C. J., Herbert, C. P., Bowie, W. R., & O'Neill, M. (2003). In M. Minkler & N. Wallerstein (Eds.), *Guidelines for participatory research in health promotion: Community-based participatory research for health*. San Francisco, CA: Jossey-Bass Inc.
- Hergenrader, K. C., Geishecker, S., McGuire-Kuletz, M., Gitlin, D. J., & Rhodes, S. D. (2010). An introduction to community-based participatory action research. *Rehabilitation Education*, 24(3 & 4), 225–238.
- Johnston, M. V., Vanderheiden, G. C., Farkas, M. D., Rogers, E. S., Summers, J. A., Westbrook, J. D., for the NCDDR Task Force on Standards of Evidence and Methods. (2009). *The challenge of evidence in disability and rehabilitation research and practice: A position paper*. Austin, TX: SEDL. Retrieved from http://www.ncddr.org/kt/products/tfpapers/tfse_challenge/tfse_challenge.pdf
- Kinoshita, Y., Furukawa, T. A., Kinoshita, K., Honyashiki, M., Omori, I. M., Marshall, M., Bond, G. R., Huxley, P., Amano, N., & Kingdon, D. (2013). Supported employment for adults with severe mental illness. *Cochrane Database of Systematic Reviews* (9):CD008297. doi:10.1002/14651858.CD008297.pub2
- Kitzman, P. H., & Hunter, E. G. (2011). Developing a community based rehabilitation network for people with spinal cord injury: A case study in Appalachian Kentucky. *Journal of Rural and Community Development*, 6(1), 95–104.
- Kosciulek, J. (2004). Research applications in the longitudinal study of the vocational rehabilitation services program. *Rehabilitation Counseling Bulletin*, 47, 173.
- Kosciulek, J. F. (2010). Evidence-based rehabilitation counseling practice: A pedagogical imperative. *Rehabilitation Education*, 24, 205–212.
- Leahy, M. J., & Arokiasamy, C. V. (2010). Prologue: Evidence-based practice research and knowledge translation in rehabilitation counseling. *Rehabilitation Education*, 24, 173–176.
- Leahy, M. J., Chan, F., Lui, J., Rosenthal, D., Tansey, T., Wehman, P., ... Menz, F. (2014). An analysis of evidence-based practices in the public vocational rehabilitation program: Gaps, future directions, and recommended steps to move forward. *Journal of Vocational Rehabilitation*, 41, 147–163.
- Leahy, M. J., Thielsen, V. T., Millington, M. J., Austin, B., & Fleming, A. (2009). Quality assurance and program evaluation: Terms, models, and application in rehabilitation administration. *Journal of Rehabilitation Administration*, 33, 69–82.
- Lui, J., Anderson, C. A., Matthews, P., Nierenhausen, E., & Schlegelmilch, A. (2014). Knowledge translation strategies to improve the resources for rehabilitation counselors to employ best practices in the delivery of vocational rehabilitation services. *Journal of Vocational Rehabilitation*, 41(2), 137–145.
- Lustig, D., Strauser, D., Rice, N. D., & Rucker, T. (2002). The relationship between working alliance and rehabilitation outcomes. *Rehabilitation Counseling Bulletin*, 46(1), 25–34.
- Mobbs, R. J. (2004). The importance of journal clubs for neurosurgical trainees. *Journal of Clinical Neuroscience*, 11, 57–58.
- Murray, C. E. (2009). Diffusion of innovation theory: A bridge for the research-practice gap in counseling. *Journal of Counseling and Development*, 87, 108–116.
- National Research Council. (2012). *Using science as evidence in public policy*. Committee on the use of social science knowledge in public policy. In K. Prewitt, T. A. Schwandt, & M. L. Straf (Eds.), *Division of behavioral and social sciences and education*. Washington, DC: The National Academies Press.

- O'Brien, M. A., Rogers, S., Jamtvedt, G., Oxman, A., Odgaard-Jensen, J., Kristoffersen, D., ... Harvey, E. (2007). Educational outreach visits: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*, (4):CD000409.
- O'Sullivan, D. (2012). The working alliance efficacy among rehabilitation service providers by education, experience, and disability category. *Rehabilitation Education*, 26(2 & 3), 217–228.
- Olivier, K., Innvar, S., Lorenc, T., Woodman, J., & Thomas, J. (2014). A systematic review of barriers to and facilitators of the use of evidence by policymakers. *BMC Health Services Research*, 3(14), 2.
- Paul, G. L. (1967). Strategy of outcome research in psychotherapy. *Journal of Consulting Psychology*, 31(2), 109–118.
- Pruett, S. R., Swett, E. A., Chan, F., Rosenthal, D. A., & Lee, G. K. (2008). Empirical evidence supporting the effectiveness of vocational rehabilitation. *Journal of Rehabilitation*, 74(1), 56–63.
- Rai, R. K. (2011). Knowledge management and organizational culture: A theoretical integrative framework. *Journal of Knowledge Management*, 15(5), 779–801.
- Rijal, S. (2010). Leadership style and organizational culture in learning organization: A comparative study. *International Journal of Management and Information Systems*, 14(5), 119–127.
- Rogers, J. D., & Martin, F. H. (2009). Knowledge translation in disability and rehabilitation research: Lessons from the application of knowledge value mapping in the case of accessible currency. *Journal of Disability Policy Studies*, 20(2), 110–126.
- Rojewski, J. (1992). Vocational rehabilitation in rural America: Challenges and opportunities. *American Rehabilitation*, 18(1), 39–44.
- Rubin, S. E., & Roessler, R. T. (2008). *Foundations of the vocational rehabilitation process* (6th ed.). Austin, TX: PRO-ED.
- Ruppel, C. P., & Harrington, S. J. (2001). Sharing knowledge through intranets: A study of organizational culture and intranet implementation. *IEEE Transactions on Professional Communication*, 44(1), 37–52.
- Russell, C. L., Bean, K. B., & Barry, D. (2006). *How to develop a successful journal club*. Pittsburgh, PA: International Transplant Nurses Society.
- Sackett, D. L., Strauss, D. E., Richardson, W. S., Rosenberg, W., & Haynes, R. B. (2000). *Evidence-based medicine: how to practice and teach EBM* (2nd ed.). Edinburgh, UK: Churchill Livingstone.
- Saunders, J. L., Leahy, M. J., McGlynn, C., & Estrada-Hernández, N. (2006). Predictors of employment outcomes for persons with disabilities: An integrative review of potential evidence-based factors. *Journal of Applied Rehabilitation Counseling*, 37(2), 3–20.
- Schonberger, M., Humle, F., Zeeman, P., & Teasdale, T. (2006). Working alliance and patient compliance in brain injury rehabilitation and their relation to psychosocial outcomes. *Neuropsychological Rehabilitation*, 16(3), 298–314.
- Schultz, J. C. (2008). The tri partite model of supervision for rehabilitation counselors. *Journal of Applied Rehabilitation Counseling*, 39(1), 36–41.
- Seekins, T., Ravesloot, C., & Dingman, S. (1989). Transition from rehabilitation hospital to rural independent living. *International Journal of Rehabilitation Research*, 12(4), 341–342.
- Society of Clinical Psychology. (2016). *Research-supported psychological treatments*. Retrieved on September 23, 2016, from <https://www.div12.org/psychological-treatments/>
- Strauser, D. R., & Wong, A. W. K. (2010). Impact not efficacy: Applying the RE-AIM framework to rehabilitation counseling research. *Rehabilitation Education*, 24(3 & 4), 213–224.
- Tarvydas, V., Addy, A., & Fleming, A. (2010). Reconciling evidence-based research practice with rehabilitation philosophy, ethics, and practice: From dichotomy to dialectic. *Rehabilitation Education*, 24(3 & 4), 191–204.
- U. S. Department of Labor. (2012). *Economic news release: Table 1. Employment status of the civilian noninstitutionalized population by disability and selected characteristics*. Retrieved from <http://www.bls.gov/news.release/disabl.t01.htm>
- U.S. Government Accountability Office (U.S. GAO). (2005). *Vocational rehabilitation—Better measures and monitoring could improve the performance of the VR Program (GAO-05-865)*. Washington, DC: Author.
- U.S. Government Accountability Office (U.S. GAO). (2009). *Program evaluation: A variety of rigorous methods can help identify effective interventions, GAO-10-30*. Washington, DC: Author. Retrieved from <http://www.gao.gov/new.items/d1030.pdf>
- University of Canberra. (2016). *Evidence-based practice in health: Library guide*. Retrieved on September 23, 2016, from <http://canberra.libguides.com/evidence>
- Wehman, P., & Kregel, J. (1998). *More than a job: Securing satisfying careers for people with disabilities*. Baltimore: Paul Brookes Publishers.
- Zients, J. D. (2012). *Memorandum to the heads of executive departments and agencies: Use of evidence and evaluation in the 2014 budget*. Washington, DC: Office of Management and Budget.