

Evidence Based Practice in Career and Workforce Development Interventions

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This chapter summarizes the scientific foundation for career and workforce development interventions with the intent of providing insight into what constitutes evidence-based career interventions. Spokane and Oliver (1983) defined vocational interventions as any treatment or effort intended to enhance an individual's career development or to enable the person to make better career-related decisions. We have a similar definition of career and workforce development interventions, which is any treatment or effort intended to enhance an individual's career, occupational, or work-related development or to enable the person to make better work-related decisions, and help them managing their work transitions. This is a broad definition that encompasses a wide array of interventions, such as individual counseling, group activities, career classes, computer information systems, and self-help interventions. Consistent with the other chapters in this book, we use the labels of promising, evidence informed, and evidence based to categorize the evidence and to classify the interventions. See Chapter ? for the operational definitions of these demarcations.

Evidence for Career Interventions

In essence, we are asking the question: are career interventions effective? In order to address whether career intervention are effective, we are going to first explore the long history of meta-analyses on career interventions. These meta-analyses provide important information about the overall effectiveness of career and workforce development interventions. Meta-analytic studies combine the results of studies to produce average effect sizes. In the career area, all of the meta-analyses have collated the findings from treatment versus control comparisons. In these meta-analyses, the mean of the control group is subtracted from the mean of the experimental group which is divided by the pooled standard deviation of the two groups, which

produces an effect size. The effect sizes are typically weighted by sample size and the inverse variance and combined to produce an average effect size. The first meta-analysis conducted was by Spokane and Oliver (1983) and was later incorporated into a more comprehensive analysis by Oliver and Spokane (1988). Oliver and Spokane (1988) analyzed 58 studies, involving 7,311 participants, which produced an unweighted effect size of .82. Using a more sophisticated weighting system and more recent research, Whiston, Sexton, and Lasoff (1998) found an average of effect size of .30. This effect size was based on 47 studies involving 4,660 participants. Using a similar weighting strategy to Whiston et al., Brown and Ryan Krane (2000) found an average effect size of .34 based on 62 studies and 7,725.

As reflected above, the average effect sizes for career interventions ranged from .30 to .82. The effect size of .82 found by Oliver and Spokane is somewhat of an outlier because it is not weighted; however, they found an effect size of .48 when they simply weighted the effect size by sample size. Hence, the effect sizes are more in the .30 to .48 range. To provide some context, this means that those receiving the career intervention tended to score about a third or more of a standard deviation above those who did not receive the intervention. This difference is statistically significant and is considered by Cohen (1988) to be a small to moderate effect size. Given the number of meta-analyses conducted on career interventions and the number of studies involved, we would argue that, in general, career interventions merit a label of promising practice. These effect sizes, however, were not homogeneous, which indicate whether the variability among the effect sizes was greater than expected because of sampling error. Since the variability was not due to sampling error, moderator analyses should be conducted to explain the effect size variability. This was not unexpected as the studies varied in terms of who received the interventions and the types of services provided to these participants. It is through these

moderator analyses and other research that we find which interventions may merit a label of evidence informed and evidence based practices.

Evidence Regarding with Whom

Although we argue that, in general, career interventions tend to produce positive results, it is important to determine which interventions are most effective with which individuals. In terms of which individuals should receive career interventions, there is evidence that career interventions can be helpful across the lifespan. Oliver and Spokane (1988) and Whiston et al. (1998) found significant effect sizes for children through adults with the only exception to this being with elementary children where there have been very few studies. Although much of the research has been conducted with college students (Whiston, 2002), there is compelling evidence that career interventions should start with younger students.

Whiston et al. (1998) found that the largest effect size ($d = .79$) was with middle school students. More recent research also supports that intervening in middle school lays the foundation for later career decisions. For example, Turner and Conkel (2010) found that an intervention based on Lapan's (2004) Integrative Contextual Model produced a number of positive outcomes as compared to a control group with inner city middle school students. Turner and Lapan (2005) found that an intervention designed to increase middle school students' interest in nontraditional careers and career self-efficacy resulted in the treatment group showing a significant increase in both career planning and exploration whereas the control group did not experience these gains. Also Hirschi and Lage (2008) found that those who attended a two-day career workshop for middle school students, as compared to a control group, had higher scores in terms of vocational identity and career exploration. Akos, Konold, and Niles (2004) found that middle school students are particularly in need of self-knowledge. Therefore, there is substantial

evidence that career development interventions should begin at least by the middle school level, if not before. Furthermore, career interventions should also be initiated at or before middle school because eighth grade is often a critical time in terms of curriculum decisions, which impact courses that can be taken in high school. For example, in many states, algebra must be taken in eighth grade in order to take higher level mathematics courses during high school that are necessary for pursuing many occupations related to math and science. Thus, these curriculum decisions force students to make career decisions in middle school which effect career development and career options. The pertinent question is whether these students are prepared to make these early career decisions?

There is also evidence that career interventions are effective with high school and college students (Whiston et al., 1998) and that students want and need these services. In fact with Italian students, Di Fabio and Bernaud (2008) found that high school students showed greater intention to seek career counseling than college students. Lapan, Aoyagi, and Kayson (2007) found that enhanced career development in high school was significantly connected to more successful career transitions and to greater satisfaction with life three years post high school graduation. McWhirter, Crothers, and Rasheed (2000) found that a nine-week class for high school sophomores resulted in increased career decision-making self-efficacy, vocational skills self-efficacy, and outcome expectation. Folsom and Reardon (2003) traced the empirical evidence from the 1920s through current practices regarding the effectiveness of career classes for college students. They found that students tended to be quite satisfied with these courses and that the courses tended to improve college retention. Readers interested in evidence-informed practices related to college career courses are directed to Folsom and Reardon as they also discuss effective design of these career courses.

Whiston et al. (1998) also found a significant effect size for career interventions with adults. Heppner, Multon, Gysbers, Ellis, and Zook (1998) found that adult clients who experienced at least three sessions of individual career counseling experienced positive results on a number of career-related measures. Also, there is evidence that clients' levels of psychological distress decreases as a result of participating in individual career counseling (Multon, Heppner, Gysbers, Zook, & Ellis-Kalton, 2001). Interestingly, Heppner et al. (2004) found that adults who participated in career counseling had significant changes in their problem solving abilities and their scores were comparable to those who participated in problem-solving training workshops.

Therefore, there is promising evidence that career interventions are effective across lifespan. This effectiveness, however, may depend on the services provided. As reflected above, more is known about interventions with adolescents and college students, particularly as it relates to career choice counseling and interventions.

Evidenced-based Practice Related to Career Choice

Career interventions is a broad term that includes various types of interventions, such as helping an elementary student with career exploration, assisting people with work/life balance, to assisting a senior with retirement issues. Although there are many types of career intervention, one prominent type is helping people make career choices. Frequently career practitioners are helping people make career choices and there is evidence-based practice regarding how to assist people with these career choices. We use the term evidence-based practices here to signify that the preponderance of evidence supports the use of five critical ingredients in career choice counseling. Career choice counseling is defined broadly here and includes assisting people in the development of decisions, intentions, plans, or aspirations regarding work and/or career.

Brown and Ryan Krane (2000) conducted a series of meta-analyses that not only looked at the overall effectiveness of career-choice intervention, but they also examined what specific factors contributed to larger effect size. Their meta-analyses identified five broad types of contents or activities, which are commonly referred to as the “critical ingredients” of career choice counseling. They found that counseling that included none of the critical ingredients resulted in an effect size of only .22; whereas, adding one, two, and three of the critical ingredients resulted in effect sizes of .45, .61, and .99, respectively. Brown et al. (2003) explored whether other combinations of treatment ingredients might produce these large effect size. To test this hypothesis, they examined randomly generated combinations of “noncritical” ingredients and tested whether more of anything was better. Interestingly, no patterns emerged when noncritical ingredients were selected and there were not any dramatic rises in effect sizes when noncritical ingredients were combined as there were with the critical ingredients. Therefore, there is compelling evidence that these critical ingredients do significantly and consistently influence outcome. We assert that the findings from these extensive meta-analyses merit the label of evidence-based practice when career practitioners are helping people with career choices. We will now describe these five critical ingredients.

Written Exercises

One important ingredient to career interventions is writing exercises using tools like journals, diaries, and workbooks. Through written exercises, clients can track their thoughts, feelings, and reflections related to their career development. Counselors should have clients write down the information gathered about career choices and compare and analyze their occupational options. It is helpful for clients to focus on the future by making goals and generating ideas for plan implementation. Typically, people are more invested, give more

structured responses, and think more carefully about the implications, in completing tasks when they have written them down as compared to simply stating them verbally. Through written exercises, counselors can facilitate their clients' commitment to their objectives and courses of action.

Individual Interpretations and feedback

It is helpful for clients to work individually with a counselor to discuss goals, plans, and vocational issues. By providing individualized interpretations and feedback to clients, counselors facilitate the effectiveness of writing down goals and plans and of standardized assessment sessions. Clients find engaging in group interventions helpful, but counselors are urged to ensure they incorporate offering direct attention; for example, by giving individualized feedback on assessment results and decision-making strategies or by promoting group members to provide appropriate feedbacks. While thinking about and writing down goals and plans may be helpful for clients, it is fortified by the counselor involvement. Counselors are encouraged to offer input regarding clients' goals and plans, because it may help clients relate more directly and intimately to their career development.

World of Work Information

Career exploration as well as understanding the workforce, what it means to work, and the various aspects related to working is beneficial for clients. Counselors should offer opportunities during sessions for clients to gather information on the world of work and explore specific career choices. Opportunities counselors could offer include computerized career information systems, visits to career libraries, guest speakers or panels, and communication with fellow group members. Counselors should be sure that clients receive accurate and current information about the workforce, skills, expectations, requirements, training opportunities, and

possible outcomes related to specific careers. Additionally, it is important that counselors encourage clients to gather information between sessions strengthening thus their self-directedness. More generally, adherence to collecting information is linked to writing and intentionally completing goals and plans.

Modeling Opportunities

An effective career intervention incorporates modeling. Counselors should offer opportunities where clients can hear about the successful experiences of others, including past participants and guest speakers. Additionally, counselors are encouraged to self-disclosure about their own experiences. Through these modeling opportunities, clients should hear information about career exploration, the decision-making process, coping with work issues, implementation of objectives, and the individual's successes. It is beneficial for a client to understand how similar she/he is to the person(s) sharing their experiences. The more a client can relate to the model on relevant attributes and the model can demonstrate her/his success, the more the client can determine her/his own ability to succeed and increase her/his self-efficacy beliefs. Therefore the counselor can play an important role in offering clients these frames of reference via personal stories or through the stories of others.

Attention to Building Support for Choices within One's Social Network

Rather than focusing exclusively on overcoming barriers, counselors are encouraged to emphasize that clients build support for their career goals and plans. While it is important to recognize that barriers exist, it is more effective for counselors to help clients focus on the positive, recognize their social network, and determine people in that network who will support their career objectives. For example, counselors could work to include significant others in the career intervention process. It may also be helpful to reach out to those with an informed and

similar cultural context as the client as a means to offer the client support, insight, and perhaps an additional member to their social network. Counselors should help clients determine those who will aid in the client's successful implementation of plans, thus improving the effectiveness of a career intervention. This help can be provided by family or community members but also by people belonging to institutionally organized services (social worker, union steward).

Evidence-based Practices Regarding Job Search

There is also substantial research supporting a program called JOBS that was developed by the Michigan Prevention Research Center that helps unemployed individuals find work. The research, however, that substantiates the use of the JOBS program is not from meta-analyses, but from randomized clinical trials research. Randomized clinical trials research is often considered the gold standard in intervention research (Whiston, 2013) and it involves randomly assigning participants to the experimental and control groups and assessing the participants both at pretest and posttest.

The JOBS program is a five-session intervention, which is facilitated by two practitioners who need to receive training on implementing the program. Treatment integrity is also ensured by the creation of a program manual, *JOBS: A Manual for Teaching People Successful Job Search Strategies* (Curran, Wishart, & Gingrich, 1999). Group exercises were developed to create an active learning environment. The two most critical active ingredients are job search self-efficacy and inoculation against the setbacks that are endemic to unemployment and gaining employment. The goal of increasing job search self-efficacy and inoculation against setbacks is particularly relevant to those who have been unemployed for a long period (Vuori & Price, 2013).

In a randomized clinical trial, Caplan, Vinokur, and Price, and van Ry (1989) found that the experimental group had higher earnings and job satisfaction than the control group. JOBS is designed to promote mental health and job search strategies and Vinokur, Price, and Schul (1995) found it to be particularly effective in decreasing depression for those at-risk for developing significant depression. In a two year follow up study, Vinokur, Schul, Vuori, and Price (2000) found that the experimental group as compared to the control group had significantly higher levels of reemployment and income, less depressive symptoms, and better emotional functioning. Furthermore, Vinokur, van Ryn, Gramlich, and Price (1991) found in a cost-benefit analysis that the costs of the JOBS program could be offset by increased tax revenues created by program participants obtaining higher paying occupations.

The JOBS program has also been implemented in Europe and has been extensively studied in Finland. At the 6-month follow-up, the Työhön Job Search Program was found in Finland to have an impact on stable reemployment and on psychological distress (Vuori, Silvonen, Vinokur, & Price, 2002). At the 2-year follow-up, participants as compared to the control group were more likely to be reemployed or in vocational training (Vuori, & Silvonen, 2005). Vuori and Silvonen also found that the experimental group had less depressive symptoms and higher self-esteem.

It should also be noted that the JOBS program is one of recognized program in the National Registry of Evidence-based Programs and Practices (NREPP) approved by the Substance Abuse and Mental Health Services Administration (SAMHSA). Each intervention in the registry has met NREPP's minimum requirements for review and has been independently assessed and rated for quality of research and readiness for dissemination. For SAMHSA's

review of the JOBS Program, please see

<http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=170>.

Modality

Although Brown and Ryan Krane's (2000) and Brown et al.'s (2003) meta-analyses found that the critical ingredients were necessary for career choice counseling no matter the modality, there is other research that shows modality (i.e., individual counseling, group counseling, workshop, etc.) makes a difference. For example, Whiston et al. (1998) found that individual career counseling was the most effective; whereas, Oliver and Spokane (1988) found that individual career counseling and career classes were the most effective modalities. Probably the most significant study in this area is a meta-analysis conducted by Whiston, Brecheisen, and Stephens (2003), which compared career intervention modalities. Whiston et al. (2003) did not find that individual career counseling or classes were more effective, but they did find that counselor-free interventions were significantly *less* effective than any other modality. They also found that computerized career guidance systems were significantly more effective when counseling accompanied the use of the career guidance system.

Whiston et al. (2003) findings have important implications for policy and practice decisions. Sometimes schools and other agencies will purchase or utilize one of the computer-assisted career guidance systems. While offering this resources is beneficial, it is important that decision makers also realize that there needs to be accompanying career counseling services provided by an appropriately trained person with these systems. Furthermore, there is some evidence that many individuals (i.e., 61% of high school students and 60% of college students) do not use these computer-assisted career guidance systems to their full advantage (Gore, Bobek,

Robbins, & Shayne, 2006) and counselors could provide instruction to individuals on how to effectively use these systems.

Length of Services

There is some research that can guide practitioners and policy makers about the number of sessions or the length of effective career development interventions. In their meta-analysis, Oliver and Spokane (1988) found that treatment intensity was a significant predictor of outcome. Treatment intensity was calculated using both the number of sessions and the number of hours involved in the intervention. They found that longer and more involved treatments produced more positive outcomes. Although Whiston et al. (1998) did not find a pattern between number of sessions and outcome Brown and Ryan Krane (2000) did. Brown and Ryan Krane found that a clear but nonlinear relationship between number of sessions and outcome in which effect sizes increased from one session to 4-5 sessions and then decrease in effectiveness after the peak at 4-5 sessions. They recommended that either individual or group career counseling last around four to five sessions. However, it has to be noted that the length of the interventions and their impact are very heterogeneous in particular with adults with intervention lasting from one-hour till more than 20-hour and varying very much in terms of the content. Concerning the impact of the length more research should certainly be conducted.

Measuring Intervention Outcome

In the previous sections, we have discussed the effectiveness of career interventions, but we have not explored how effectiveness is specifically measured. Oliver and Spokane (1988) found the most commonly used outcome measures were career information seeking and career maturity. Whiston et al. (1998) also found that career maturity was a frequently used outcome measure, and they found frequent use of career certainty/decidedness measures. Brown and

Ryan Krane (2000) focused their series of meta-analyses to focus on career choice outcomes, which included measures of congruence, vocational identity, career maturity, and career decision-making self-efficacy. One of the limitations of these meta-analyses is the predominance of self-report outcome measures and the lack of behavioral measures (e.g., employment, grades, declaring a major). One of the strengths emanating from the studies done by the Michigan Prevention Research Center is that they frequently used employment as an outcome measure. Brown (2015) argues that vocational psychologists should select outcome measures and statistical analyses that show that vocational interventions truly have an impact on people's lives (i.e., clinical significance versus statistical significance). Therefore, clients' level of satisfaction with the intervention is not as important as whether they implement the plan constructed during the career counseling.

Short-term versus Long-term Effects

One of the central questions is whether career or workforce development interventions produce significant and long lasting influences. In order to assess the long-term effects of career interventions, researchers need to conduct follow-up analyses. With Swiss adolescents, Hirschi and Lage (2008) found smaller effect sizes for the four outcome measures at a 3-month follow-up as compared to the post-test effect sizes. The effect sizes at the 3-month follow-up were .07 for career decidedness, .18 for both career planning and vocational identity, and .39 for career exploration. With French clients, Bernaud, Gaudron, and Lemoine (2006) found the overall effect size decreased from .62 at post-test to .44 at the 6-month follow-up. Verbruggen and Sels (2008) found at the 6-month follow-up to career counseling in Belgium that scores on self-awareness and career self-directedness remained consistent with post-counseling scores but career adaptability decreased. In another study, Verbruggen and Sels (2010) found at a 6-month

follow-up that the average career counseling participant had achieved 49% of the goals set during the career counseling and was moderately satisfied with his or her career and life. Also with Swiss participants who received individual career counseling, Perdrix, Stauffer, Masdonati, Massoudi, and Rossier (2012) quantitatively and qualitatively assessed participants at three months and one year after they completed the intervention. Qualitative results showed that the 64% of the clients implemented their career plans within one year. Furthermore, they found that life satisfaction moderately increased during the intervention, but no significant change occurred over the following year. For clients younger than 21, career decision-making difficulties continued to decrease from post-test to follow-up; however, for clients over 21, the difficulties did not continue to decrease. Kirschner, Hoffman, and Hill, (1994) conducted a case study where they followed up with the client 5 years later. Although a case study has limited generalizability, they did find that the client described the career counseling as a very significant experience that served as a direct impetus in her changing jobs.

Therefore over time, the effects of career counseling seemed to be maintained or decrease slightly. There needs, however, to be more research on this topic and the more use of longitudinal designs before we can say definitively that career interventions have a long-term effect.

Treatment by Attribute Interactions

In his seminal paper, Fretz (1981) called for more research that examined the interaction between client characteristics or attributes and specific treatments. In essence, this was a call for more research on which career interventions worked with which clients. This is an area where more research is still needed. For example, although we know that career interventions are generally effective with middle school students, we do not know what specific interventions

produce large effect sizes with middle school students. This lack of knowledge about what work with whom is also accurate for other demographic variables, such as gender and race and/or ethnicity.

The lack of research regarding what interventions work with clients of different races and ethnicities is unfortunate because migration flows tend to increase in our globalized contemporary societies, and because clients of different races and ethnicities are facing slightly different challenges. Carter et al. (2003) found that African Americans were most likely to attend only one career counseling session; whereas, Asian and Hispanic students seemed to be the most likely to attend 2 to 9 sessions and White students appeared to be most likely to attend 10 or more sessions. An exception to this dearth of research concerns Asian Americans and a series of studies conducted by Kim and colleagues. Kim and Atkinson (2002) found that participants with high Asian cultural values tended to rate Asian American career counselors as more empathetic and credible, whereas participants with low Asian cultural values tended to evaluate European American career counselors as more empathetic. However, in contrast to hypotheses, all participants rated the European American counselors' sessions as being more positive and arousing. In another career counseling study, Kim, Li, and Liang (2002) found that Asian American college students preferred a more resolution focused session over a more insight-oriented session. On the other hand contrary to their hypothesis, they found that clients with high Asian cultural values rated counselors as being more culturally competent when the counselors encouraged the expression of emotions as compared to cognition. In the third study, Li and Kim (2004) found that regardless of Asian cultural values, clients in the directive approach rated their career counselors more positively than did clients in the nondirective approach. Whereas these series of studies do provide clinicians working with Asian American clients some

useful information, it is regrettable that we cannot report more information on other racial or ethnic groups. This is particularly disappointing as other racial or ethnic groups (e.g., African Americans) have significant unemployment rates and tend to enter low paying, low status occupations.

Gender is another client attribute that may interact with treatment. Hence, there may be specific career interventions that are more effective with women or girls as compared to men and boys or vice versa. Surprisingly there is little research regarding which interventions work best with males or females (Whiston & Rose, 2014). We do know that males as compared to females are more likely to attach a greater stigma to career counseling (Di Fabio & Bernaud, 2008; Rochlen, Mohr, & Hargrove (1999). Rochlen and O'Brien (2002) examined the reasons why men would or would not seek career counseling. The reasons men would seek career counseling included seeking general career assistance, securing professional advice, exploring job opportunities, and expanding career options. Conversely, the reasons these men would not seek career counseling involved doubting whether career counseling would be helpful, being independence and a preference for solving problems by oneself, and the time commitment and inconvenience.

Regarding gender, there have been a few intervention studies related to promoting nontraditional career interests. Turner and Lapan (2005) found with ethnically diverse middle school students that a three module intervention called Mapping Vocational Challenges (see Lapan & Turner, 1997, 2000) resulted in significant gains for the experimental group in terms of career planning and exploration efficacy and educational and vocational development efficacy. Also, both males and females were more interested in nontraditional areas after the career interventions as compared to their more traditional interests before the intervention. To be

specific, boys became more interested in Artistic, significant increase in Artistic, Social, and Conventional themes; whereas, girls became more interested in Realistic and Enterprising themes.

Within vocational psychology, there have been a number of recent calls to attend to issues of social class when designing career interventions (e.g., Ali, Fall, & Hoffman, 2013; Blustein, Kozan, Connors-Kellgren, & Rand, 2015). As emphasized by Ali (2013) and Blustein (2006, 2013), poverty in particular calls into questions career interventions that focus on adjustment and choice as many people living in poverty do not have the luxury of career choice.

Having more information on how to conduct career intervention with diverse clients (e.g., race/ethnicity, gender, sexual orientation) is particularly important because career counselors tend to see themselves as being more culturally competent than external reviewers found them to be (Vespia, Fitzpatrick, Fouad, Kantamneni, & Chen, 2010). Multicultural competency includes critical self-awareness of influences and biases in working with clients particularly of minority groups and the ability to account for the influence and dynamics among various sociocultural aspects of a client. Vespia et al. (2010) found that the amount of multicultural training was the only variable that predicted self-reported and external reports on multicultural competence. Therefore, it is beneficial that career counselors have multicultural training. It is particularly crucial to incorporate an experiential component to training given the discrepancy between the internally and externally perceived multicultural competency.

Global Implications

In discussing multicultural implications for career counseling, it is important for the reader to consider culture broadly and globally. First, we should note a disturbing decrease in career intervention research in the United States in the last 20 years. There are a few U.S.-based

researchers who have systematically published career intervention research with some of the exceptions being Turner and Lapan (2005) and Turner and Conkel (2010). There has been some significant studies coming from Europe (e.g., Bernaud et al., 2006; Masdonati, Massoudi, & Rossier, 2009, Perdrix et al., 2012; Verbruggen & Sels, 2008, 2010). This may be related to Europe's commitment to vocational guidance starting in the late 1950s and continuing through today (see Watts, Sultana, & McCarthy, 2010). According to Watts et al. (2010), vocational guidance in the European Union has now been replaced in policy matters by the term life long guidance, which emphasizes the career needs of citizens across the lifespan. It should be noted, however, that countries within the European Union vary in terms of the lifelong guidance services that they provide but, unlike the United States, guidance services are usually publicly funded and free to users.

Although we note the decline in career research in the United States, many non-Western countries are producing little career intervention research. In our search for career intervention research, we found very few studies emanating from either China or India even though these are emerging economies. According to Sun and Yuen (2012), career guidance and counseling in China started late, but there is emerging theory and practice. In particular, they note that many Chinese universities are now instituting career counseling services. We also found very little research coming from Africa. Perry (2009) suggest that international efficacy research be expanded to include social action research and mixed methods inquiry. He asserts that the purpose of vocational efficacy research internationally "is to not simply show that programs are 'efficacious', but to demonstrate that they can transform into viable, long-lasting solutions to alleviating systemic problems, such as school dropout, unemployment, or welfare subsistence" (p. 112). To accomplish these significant goals, Perry recommends social or participatory action

research where researchers and participants collaborate in the research process. From this perspective, efficacy research and empowerment are inextricably linked. Perry further recommends that vocational outcome research internationally incorporate mixed methods designs. That is, that according to Perry the next step in the evolution of efficacy research would be to complement quantitative outcomes with qualitative outcomes. He argues that the voices of participant, not just total scores on a scale, need to be heard when the outcome measures are in the areas of vocational aspirations, career exploration, or attitudes about the value of education or training.

Conclusions

Meta-analyses indicate that, in general, career and workforce development interventions are moderately effective. Therefore, policy makers can be assured that the implementation of career interventions will produce positive results; however, these meta-analyses found a heterogeneity of effect sizes, which indicates that some interventions are more effective than other interventions. It is somewhat more difficult to identify what are truly the more effective interventions given the current research in this area. One consistent finding is that counselor-free interventions tend not to be very effective. Therefore, policy makers should institute career development interventions that involve aspects of counseling. The role of the counselor, however, will vary depending on the needs to the clients.

In this chapter, we identified two intervention strategies that we argue meet the criteria of evidence-based interventions. The first of these addresses issues of career choice and the research indicates there are five critical ingredients that counselors need to include in career choice counseling. Based on meta-analyses, these five critical ingredients are written exercises, individual interpretations and feedback, world of work information, modeling opportunities, and

attention to building support for choices within one's social network. More research in this area, however, may provide greater clarity to clinicians. For example in the area of written exercises, there may be specific written exercise that are more effective than others particularly when we consider treatment by client attribute interactions. That is, there may be certain written exercises that are more appropriate for adolescents as compared to adults. We suggest that researchers continue to explore the five critical ingredients with the goal of providing more specificity to clinicians.

The second intervention strategy that we consider to merit the label of evidence-based treatments is the Michigan Prevention Research Center's JOBS program. The JOBS program was evaluated using randomized clinical trials research, which is comparatively rare in the area of vocational psychology. Although the current research on the JOBS program is encouraging, more research is needed regarding implementation and adherence. One of the strengths of the JOBS program is its use of a treatment manual, which is lacking in some areas of programmatic vocational intervention research, but there is little research on whether adherence to the JOBS manual makes a significant difference. Further research is also needed on whether the JOBS program is effective with diverse groups and those groups where unemployment tends to be rampant (e.g., young African American men).

We further argue that it is problematic that we identified only two intervention strategies that merited the label of evidence-based practice and wish to make a clarion call for more systematic research related to career interventions. For example, we make the argument that career intervention strategies should occur either before or during middle school; yet, we do not know precisely what would be the most effective with these students. The need for career interventions in middle school and high school within the United States is becoming increasingly

important with the calls at the federal level for all students graduating from high school to be college and career ready.

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