

Thirty Years of Rehabilitation Forensics: Inclusion of Occupational and Labor Market Information Competencies in Earning Capacity Models

Mary Barros-Bailey and Rick Robinson

The purpose of this article was to merge over 25 years of longitudinal role and function study research about the importance and use of occupational and labor market information competencies among rehabilitation counselors and disability managers who predominately populate the ranks of forensic rehabilitation practitioners with all published earning capacity models and methods spanning the last 30 years. Findings indicate that 100% of the models include the use of occupational and labor market information; 50% of the models specifically name secondary Labor Market Research sources while 45% of the models name primary Labor Market Survey methods. The authors call for future research to establish the constructs and definitions for the different terms used in the models, and for further content analyses with other factors inherent in these models.

Keywords: Earning Capacity Models, Earning Capacity Methods, Forensic Rehabilitation, Occupational and Labor Market Information, Labor Market Search, Labor Market Research, Labor Market Survey

Forensic rehabilitation experts are often asked to explain their methodologies and the data sources underlying such methodologies. The inclusion of occupational and labor market primary and secondary information in vocational counseling can be traced back historically over a century to the first known counselor, Frank Parsons (Barros-Bailey, 2012b). Although considering such data could be anchored to the origins of counseling, it is not widely documented how important this data may be to forensic practice, nor how skilled practitioners believe they are to implement such competencies. Also, no known empirical study has examined the pervasiveness of the use of such data in rehabilitation forensics involving earning capacity analysis. Consequently, the purpose of this study is to: (1) explore role and function study results from credentialing organizations for inclusion of competencies involving occupational and labor market information and their component methods (e.g., labor market surveys) among certificants; and (2) examine all published earning capacity analysis models and methods for domains containing these competencies.

Study Method and Procedures

The methods used in this study were an ex post facto analysis of historic quantitative role and function study data as reported in the peer review literature and a qualitative content analysis of all published earning capacity models and methods as described by Robinson (2012). The analysis of quantitative historical data involved examination of the mean and standard deviation of importance, use, and knowledge ratings reported in over 25 years of role and function study research. Role and function data was collected from national representative samples of Certified Rehabilitation Counselors (CRCs) as reported by the Commission on Rehabilitation Counselor Certification (CRCC) from 1987 to 2011 (Leahy, Chan, & Saunders, 2003; Leahy, Chan, Sung, & Kim, 2011; Leahy, Munzen, Saunders, & Strauser, 2008; Leahy, Shapson, & Wright, 1987; Leahy, Szymanski, & Linkowski, 1993; Wright, Leahy, & Shapson, 1987) and of Certified Disability Management Specialists (CDMSs) as reported by the Certified Disability Management Specialist Commission (CDMSC) from 1999 to 2004 (Chan et al., 2000; Rosenthal, Hursh, Lui,

Isom, & Sasson, 2007). Occupational and labor market information as a factor in role and function studies in rehabilitation counseling has been described as far back as 1969 (Muthard & Salomone). Matkin (1982) identified the LMS factor within the roles and functions of those in private sector rehabilitation. Despite these important studies, the Leahy et al. studies (1987, 1993, 2003, 2008, 2011) in rehabilitation counseling conducted between 1987 and 2011 in concert with the Scully, Habeck, & Leahy (1999), Chan et al. (2000), and Rosenthal et al. (2007) studies in disability management provide the most comprehensive sampling of rehabilitation counselors and disability management professionals for generalizability to those who practice in the area of forensic rehabilitation.

In addition to the quantitative analysis of role and function studies, the qualitative content analysis for factors associated with occupational and labor market information in earning capacity models and methods spanned more than 30 years of literature and covered 20 such models and methods (Austin et al., 2009; Berg, 2003; Boyd & Toppino, 1995; Cohen & Yankowski, 1996; Deutsch & Sawyer, 1986; Dillman, 1998; Field, 2008; Hankins, 2009; McCroskey, 1992; McCroskey & Hahn, 1995, 1998; Neulicht & Berens, 2005; Robinson & Pomeranz, 2011; Robinson, Pomeranz, & Young, 2012; Shahnasarian, 2001, 2004a, 2004b, 2004c, 2004d, 2008, 2009a, 2009b, 2010a, 2010b; Shahnasarian & Leitten, 2006, 2008; Spitznagel & Cody, 2003; Toppino & Agrusa, 2000; Tracy & Wallace, 2010; Van de Bittner, 2003, 2006; Weed & Field, 1994, 2001; Williams, Dunn, Bast, & Giesen, 2006). Published earning capacity models and methods as summarized by Robinson (2012) were studied for explicit or implied inclusion of occupational and labor market information domains, subdomains, and component methodologies under the Labor Market Search (LMSea) model proposed by Neulicht, Gann, Berg, and Taylor (2007) as modified by Barros-Bailey (2011, in press). Specifically, the theoretical modified model was described as containing two data components, one called Labor Market Research (LMR) comprised of secondary data sources and another called Labor Market Survey (LMS) covering primary data sources and depicted by the following formula: $LMSea = LMR [secondary data] \pm LMS [primary data]$ (Barros-Bailey, in press).

Occupational and Labor Market Information Competencies: Importance, Use, and Preparedness of Certificants

The population of professionals performing forensic rehabilitation services is unknown. Estimates could be derived from professional membership organizations, such as the International Association of Rehabilitation Professionals (IARP) and the American Board of Vocational Experts (ABVE). Review of re-

search performed among members from IARP and ABVE suggest that the majority of their constituent forensic membership had credentials as CRCs or CDMS. The Neulicht et al. (2007) study of the use of LMS among forensic practitioners found that 67% of respondents held a CRC while 30% of respondents held a CDMS. A 2012 Delphi study by Robinson, Pomeranz, and Young identified construct domains and core variables considered in earning capacity assessment and found 72% of respondents held the CRC while 34% held the CDMS credential. Despite these findings, research by credentialing organizations such as CRCC suggest that the majority of certificants do not belong to professional associations (Leahy et al., 2011). In response to the need for a rehabilitation subspecialty focused on disability management in insurance and human resources settings, the CDMS credential was born out of CRCC, and thus shares many areas of similar knowledge, skill, and ability (CDMSC, 2012; Scully et al., 1999). Thus, by examining research conducted by the credentialing organizations certifying CRCs and CDMSs who are known to perform forensic rehabilitation services, some characteristics and behaviors of that sector of the population becomes evident.

Data from the most recently-reported role and function study (Tables 1 & 2) of CRCs by Leahy et al. (2011), reveals that the importance of these competencies to practice are rated by certificants as Important to Very Important (Barros-Bailey & Saunders, in press). Overall, over 35% of CRCs in the study identified themselves with titles consistent with forensic rehabilitation: Forensic/Expert Witness or Rehabilitation Consultant/Specialist. Although only 2.3% of respondents participating in the 2011 CRCC role and function study (Leahy et al., 2011) were found to be Forensic/Expert Witnesses, this cross section of the sample was the most likely to rate their use of labor market analyses between Very Frequently and Most of the Time. These Forensic/Expert Witnesses were followed in the frequency of the use of labor market analyses by those holding the job title of Rehabilitation Consultant/Specialist that made up 33% of respondents. These certificants rated their use of labor market analyses between the Somewhat Frequent to Very Frequent range.

Tables 1 and 2 summarize sub-domain items addressing the use of occupational information in role and function studies over the last 25 years for CRCs. Note the 2006 survey instrument was changed in design and item construction significantly from all other prior and subsequent studies, and some items were eliminated or modified. Over the 25 years of role and function studies, there were new items introduced and others eliminated as the survey instrument was empirically revised. Thus, some of the data is unavailable (N/A) for certain study years. This limits direct item-to-item longitudinal cross comparisons across all

Table 1

Use of Occupational and Labor Market Information Competencies: 25 Years of Ratings by Certified Rehabilitation Counselors (CRCC Role & Function Study Data)

Item	1987 (M/SD)	2002 (M/SD)	2006 (M/SD)	2011 (M/SD)
Apply labor market information influencing the task of locating, obtaining, and progressing in employment	3.08/1.05	2.28/1.41	N/A	2.07/1.36
Classify local jobs using the DOT and O*NET or other classification systems	2.15/1.33	1.92/1.47	N/A	N/A
Conduct labor market analyses	N/A	2.02/1.48	N/A	1.50/1.39
Discuss with clients labor market conditions that may influence the feasibility of entering certain occupations	3.20/0.92	2.66/1.37	N/A	2.44/1.32
Identify hidden job leads and customized jobs/employment opportunities	N/A	N/A	N/A	1.69/1.25
Match clients needs with job reinforcers and clients' aptitudes with job requirements	2.94/0.95	2.52/1.34	N/A	2.42/1.27
Read professional literature related to business, labor market, medicine, and rehabilitation	2.73/0.94	2.85/1.02	N/A	N/A
Recommend occupational and/or educational materials for clients to explore vocational alternatives	2.87/1.01	2.54/1.25	N/A	N/A
Use local resources to assist with placement (e.g., employer contacts, colleagues, state employment service)	3.03/1.12	2.71/1.42	N/A	2.45/1.37
Use occupational information such as the DOT, OOH, and other publications	N/A	2.24/1.42	N/A	N/A
Utilize occupational information materials such as the DOT, OOH, and other publications	2.48/1.19	N/A	N/A	N/A

Sources: Leahy, M. J., Chan, F., & Saunders, J. L. (2003). Job functions and knowledge requirements of Certified Rehabilitation Counselors in the 21st century. *Rehabilitation Counseling Bulletin*, 46(2), 66-81; Leahy, M. J., Chan, F., Sung, C., & Kim, M. (2011). *An analysis of job functions and knowledge requirements of Certified Rehabilitation Counselors*. Schaumburg, IL: Commission on Rehabilitation Counselor Certification.; Leahy, M. J., Muenzen, P., Saunders, J., & Strauser, D. (2008). Essential knowledge domains underlying effective rehabilitation counseling process. *Journal of Applied Rehabilitation Counseling*, 39(4), 28-38; Leahy, M. J., Shapson, P. R., & Wright, G. N. (1987). Professional rehabilitation competency research: Project methodology. *Rehabilitation Counseling Bulletin*, 31(2), 94-106; Wright, G. N., Leahy, M. J., & Shapson, P. R. (1987). Rehabilitation Skills Inventory: Importance of counselor competencies. *Rehabilitation Counseling Bulletin*, 31(2), 107-118.

Scale: 0 = Not Important/No Preparation; 1 = Somewhat Important/Little Preparation; 2 = Important/Moderate Preparation; 3 = Very Important/High Degree of Preparation; 4 = Extremely Important/Very High Degree of Preparation.

Table 2

Importance of Knowledge of Occupational and Labor Market Information Competencies: 20 Years of Ratings by Certified Rehabilitation Counselors (CRCC Role and Function Study Data)

Item	1987 (M/SD)	2002 (M/SD)	2006 (M/SD)	2006	2011 (M/SD)
Methods and techniques used to conduct labor market surveys	N/A	2.20/1.34	Knowledge 3.0/8.4	58%	3.0/8.4 2.14/1.22
			Frequency 2.9/1.24		Preparedness 1.87/1.15
Occupational and labor market information	3.25/1.01	3.09/1.07	Knowledge 3.3/7.2	50%	Importance 2.99/0.96
			Frequency 3.5/1/23		Preparedness 2.54/1.00

Sources: Leahy, M. J., Chan, F., & Saunders, J. L. (2003). Job functions and knowledge requirements of Certified Rehabilitation Counselors in the 21st century. *Rehabilitation Counseling Bulletin*, 46(2), 66-81; Leahy, M. J., Chan, F., Sung, C., & Kim, M. (2011). *An analysis of job functions and knowledge requirements of Certified Rehabilitation Counselors*. Schaumburg, IL: Commission on Rehabilitation Counselor Certification.; Leahy, M. J., Muenzen, P., Saunders, J., & Strauser, D. (2008). Essential knowledge domains underlying effective rehabilitation counseling process. *Journal of Applied Rehabilitation Counseling*, 39(4), 28-38; Leahy, M. J., Shapson, P. R., & Wright, G. N. (1987). Professional rehabilitation competency research: Project methodology. *Rehabilitation Counseling Bulletin*, 31(2), 94-106; Wright, G. N., Leahy, M. J., & Shapson, P. R. (1987). Rehabilitation Skills Inventory: Importance of counselor competencies. *Rehabilitation Counseling Bulletin*, 31(2), 107-118. *Scale:* 0 = Not Important/No Preparation; 1 = Somewhat Important/Little Preparation; 2 = Important/Moderate Preparation; 3 = Very Important/High Degree of Preparation; 4 = Extremely Important/Very High Degree of Preparation.

Note: For the 2006 CRCC Role & Function study, both instruments that have traditionally been used in rehabilitation counseling role and function studies were combined, which altered items, scales, and measures compared to previous studies. Respondents were asked to rate the importance of each knowledge domain on a 4-point Likert scale (1 = Not Important, 2 = Minimally Important, 3 = Moderately Important, and 4 = Highly Important) and to indicate the frequency with which they used the knowledge domain on a 5-point Likert scale (1 = never, 2 = yearly or almost yearly, 3 = monthly or almost monthly, 4 = weekly or almost weekly, and 5 = daily or almost daily). Three scales were designed to collect data regarding each of the 81 knowledge subdomains. Importance and frequency scales for the subdomains used the same ratings as those used to rate the knowledge domains. A third scale addressed the point at which practitioners should acquire the knowledge. The 3-scale Likert points were: 1 = never, 2 = during formal education/practicum/internship, and 3 = on the job" (p. 97, Leahy, Muenzen, Saunders, & Strauser, 2008).

sub-domains. However, considering those adjustments, an overall review of all sub-domain items involving LMSea components appears to suggest that, over time, CRCs have become less confident as to the importance and use of, and preparedness for the LMSea-specific competencies. Caution is urged in interpreting these findings as indicating that CRCs now use occupational and labor market information less, hold these competencies as less important, or are less prepared to perform them. Although this is one possible explanation of the review of this cross-sectional data, examination of other sub-domains across items for other competency areas (e.g., placement and ergo-

nomics, transferable skills analysis, research methodology and statistics), suggest the same downward trajectory of the means for all three scales over the same 25-year period. It is not clear what the effect may be for the lowered scores over time, although the variability expressed through standard deviations across the same period, has increased suggesting a growing variation in the responses of survey participants. That is, perhaps practitioners have become more diverse in their responses, which may reflect evolving specializations in the rehabilitation counseling profession (e.g., life care planning). Such evolution in sub specialization in this counseling specialty may

be reflective of a more heterogeneous respondent pool and result in lower overall mean scores.

CDMSs do not have longitudinal data for comparison that is similar to that of CRCs. The only study that had mean and standard deviation data reported at the sub-domain level was the baseline 1999 survey (Chan et al. 2000). The results of this study, which are summarized in Tables 3 and 4, suggest that CDMSs use labor market surveys Very Frequently and are more confident in their preparation to use labor market data than to perform LMSs. Care should be used in comparing means between CRC and CDMS ratings given that the scales for the instruments used in each credential's role and function studies vary (e.g., CRCC, 0-4; CDMSC, 1-5). A comparison is only meaningful at the level of the descriptive anchors associated with the scales. With these considerations in mind, CRC and CDMS ratings generally suggest that CRCs have a higher level of use of various occupational and labor market information methods and

competencies than CDMSs and hold these competencies to be more important.

History and Inclusion of Occupational and Labor Market Information Domains in Earning Capacity Models and Methods in Forensic Rehabilitation

Robinson (2012) examined the frameworks and component elements of published models and methods of vocational and earning capacity assessment. Models and methods were identified as far back as 1981 and as recently as 2011. The results of the content analysis per the LMSea framework are summarized in Table 5.

The content analysis of all published earning capacity models and methods ($N = 20$) indicate each of the models include domains specific to the LMSea primary (LMS) or secondary (LMR) data components. Fifty percent of these models ($n = 10$) name or suggest data from LMR sources such as the US Census, the Bureau of Labor Statistics, etc. while 45% ($n = 9$) name the

Table 3

Importance and Preparedness of Occupational and Labor Market Information Competencies: Twenty Years of Ratings by Certified Disability Management Specialists (CDMSC Role and Function Study Data)

Item	1999 (M/SD)	2004 (M/SD)
Conduct labor market analyses	Importance (2.68/1.56)	N/A
Occupational information publications	Knowledge (3.36/1.19)	Not Reported

Sources: Chan, F., Taylor, D., Currier, D., Chan, C. C. H., Wood, C., & Lui, J. (2000). Disability management practitioners: A work behavior analysis. *Journal of Vocational Rehabilitation*, 15, 47-56; Rosenthal, D. A., Hursh, N., Lui, J., Isom, R., & Sasson, J. (2007). A survey of current disability management practice: Emerging trends and implications for Certification. *Rehabilitation Counseling Bulletin*, 50(2), 76-86.

Scale: Activities in this task are .../Knowledge in this area is ... and Frequency 1 = Not Important/Never; 2 = Somewhat Important/Rarely; 3 = Important/Infrequently; 4 = Very Important/Very Frequently; 5 = Extremely Important/Constantly.

Table 4

Use of Occupational and Labor Market Information Competencies: Twenty-Five Years of Ratings by Certified Disability Management Specialists (CDMSC Role & Function Study Data)

Item	1999 (M/SD)	2004 (M/SD)
Methods and techniques used to conduct labor market surveys	Knowledge (3.09/1.42)	Not Reported

Sources: Chan, F., Taylor, D., Currier, D., Chan, C. C. H., Wood, C., & Lui, J. (2000). Disability management practitioners: A work behavior analysis. *Journal of Vocational Rehabilitation*, 15, 47-56; Rosenthal, D. A., Hursh, N., Lui, J., Isom, R., & Sasson, J. (2007). A survey of current disability management practice: Emerging trends and implications for Certification. *Rehabilitation Counseling Bulletin*, 50(2), 76-86.

Scale: Activities in this task are .../Knowledge in this area is ... and Frequency 1 = Not Important/Never; 2 = Somewhat Important/Rarely; 3 = Important/Infrequently; 4 = Very Important/Very Frequently; 5 = Extremely Important/Constantly.

LMS (called Labor Market Survey in 7 models and Labor Market Sampling in 2 models) as the primary data component. The only model that did not specifically name LMR or LMS as a constituent component of the LMSea framework was the PEEDS-RAPEL model (Neulicht & Berens, 2005). This framework is a sub analysis of the RAPEL conceptual model (Weed & Field, 2001) specific to pediatric cases; therefore,

PEEDS-RAPEL is conceptually linked back theoretically to the LMR secondary data component through RAPEL.

Limitations and Delimitations

This study involved the comparison of competencies and constructs specific to occupational and labor mar-

Table 5

Occupational and Labor Market Information in Earning Capacity Models in Over 30 Years of Forensic Rehabilitation

Earning Capacity Model Framework	LMSea = LMR ± LMS Codes
Cohen and Yankowski Procedure (1996)	LMSea
Deutsch/Sawyer Model (1986)	LMSea
DFEC Work Group Methodology for Employability and Earning Capacity (2009)	LMR + LMS
Dillman's Impairment to Earning Capacity Equation (1998)	LMSea
Earning Capacity Assessment Theory/Earning Capacity Assessment Form (2001, 2004, 2006, 2008, 2010)	LMSea
Field's Practical Approach (2008)	LMSea
Forensic Vocational Expert's (FVE) Approach to Wage Loss Analysis (1995)	LMR + LMS
Hankins Three Step Method (2009)	LMR
Labor Market Access Model (1981)	LMR
LeBoeuf Evaluation Process (2003)	LMS
Leeper Evaluation Methodology (2003)	LMS
McCroskey's Vocational Quotient System (1982)	LMR
PEEDS-RAPEL (2005)	LMSea (furthest model in inference)
RAPEL (2001)	LMR
Spitznagel and Cody Methodology (2003)	LMR + LMS
Toppino and Agrusa (2000)	LMR + LMS
Tracy and Wallace (2010)	LMR + LMS
Vocational and Rehabilitation Assessment Model (VRAM) (2011)	LMR + LMS
Williams, Dunn, Bast, and Giesen (2006)	LMSea
Workers' Compensation Earning Capacity Formula (WCEC) (2006)	LMS

Source: Robinson, R. (2012). Rehabilitation and vocational earning capacity models. In R. Robinson (Ed.), *Foundations of Forensic Vocational Rehabilitation*. Textbook in preparation.

Coding Summary: LMSea = Labor Market Search; LMR = Labor Market Research; LMS = Labor Market Survey. For more description of the LMSea = LMR ± LMS model derived from Neulicht et al. (2007), see: Barros-Bailey, M. (in press). Teaching labor market survey methodology in rehabilitation counseling. *Rehabilitation Research, Policy, and Education*; Barros-Bailey, M. (2012a). Commentary: Labor market survey methodology and applications. *Rehabilitation Professional*, 20(2), 137-146; Barros-Bailey, M. (2012b). Occupational and labor market information. In D. R. Strauser (Ed.), *Career development, employment, and disability: From theory to practice*. New York, NY: Springer Publications. Manuscript submitted for publication; Barros-Bailey, M. (2012c). The 12-step labor market survey methodology in practice: A case example. *Rehabilitation Professional*, 20(1), 1-10.

ket information and related methodologies or subcomponents within and across role and function data collection instruments over a quarter of a century. As cross-sectional descriptive research, care should be taken in generalizing the results to the population to all forensic rehabilitation professionals, particularly when the extent of that population is unknown and inferred. Mitigating these limitations are two factors – first, random probability or nonprobabilistic purposive samples taken from the CRCC and CDMSC that ensure scientific rigor for the inclusion of certificants in their studies. Second, the overarching earning capacity models and methods cover jurisdictions, applications, and professionals not limited by the sampling boundaries of the role and function studies, thus allowing for comprehensive comparisons that are unrestrained by these boundaries. Another limitation is the definition of terms that is assumed to be conceptually similar across items in the role and function data collection instruments and constructs described in and between the various earning capacity models and methods — this may not be the case.

Implications

Despite limitations and delimitations of a study of this nature, its benefits to forensic rehabilitation practice rest upon making the historical link between one content domain (occupational and labor market information competencies) fundamental to forensic vocational rehabilitation practice and published earning capacity models and methods. The bottom line is: CRCs and CDMSCs consider primary and/or secondary occupational and labor market information important to their scopes of practice and have carried this fundamental tenet into all of their conceptual analytic models and methods in forensics. Not only is this data important to clinical and forensic rehabilitation counseling and disability management practice, but also it is essential for any forensic practitioner performing an earning capacity evaluation regardless of jurisdiction when the analysis involves assessing an individual's residual vocational capacity within the real world of work.

Areas of Future Research

In a sample of 529 CRCs in the 2006 CRCC role and function study (Leahy et al., 2008), rehabilitation counselors projected that forensic consultation and life care planning would be the areas of greatest growth in rehabilitation counseling through 2011 (Barros-Bailey, Benshoff, & Fischer, 2008). If the fact that 40% of the earning capacity models ($n = 8$) were created or updated between 2006 and 2011, compared to the preceding 25 years is a measure of that prediction, perhaps now it is time to examine individual model/method content, and work toward a common nomenclature. Embracing a common terminology can lead to develop-

ment of decision-making and methodological tools to aid forensic rehabilitation practitioners in analyzing the various qualitative and quantitative factors important to individualized assessment.

Using applied exploratory research methods to understand how forensic rehabilitation professionals define primary and secondary occupational and labor market information vis-à-vis the LMSea conceptual and data components is necessary. Irrespective of the particular jargon given by the authors of these instruments, models, or methods, it is not entirely clear what the constructs may be that underlie the survey items, the earning capacity models' domains or subdomains, nor their units of analysis. When the term "Labor Market Research" is used, for example, does every forensic rehabilitation practitioner and researcher mean the more econometric secondary data sources collected by someone other than themselves? The same question holds true for the terms "Labor Market Survey" or "Employer Sampling." Do forensic rehabilitation practitioners and researchers consider these terms to mean primary occupational and labor market information that is generally more ergometric or ergonomic in nature? And, is "Labor Market Analysis" considered synonymous to "LMSea" by all forensic practitioners and researchers and thought to contain the primary and secondary occupational and labor market information used in earning capacity models? All these inquiries become sources for future research questions.

Content analysis of earning capacity models at the domain or sub-domain level (e.g., job analysis, transferable skills analysis) could help further develop the body of literature relied upon by forensic rehabilitation professionals in developing and defending opinions of vocational earning capacity. Such analysis would be useful for explaining the foundation of such analyses, while also providing baseline data to assist in the evolution of present and future earning capacity models and methods necessary to respond to fluctuations inherent in an evolving and dynamic forensic environment. Research among present earning capacity models and methods vis-à-vis LMSea definitions and constructs could help better determine the inter-model/method conceptual similarities or differences in relation to the use of occupational and labor market information.

Conclusions

The 1980s saw the dawn of what has become an expanding array of empirical and theoretical models and methods related to forensic assessment of vocational earning capacity concurrent with role and function studies. These models and methods have evolved over the past 30 years to meet the dynamic needs of clinical and forensic practice for the present generation of rehabilitation and disability practitioners. The fact that

scopes of practice, models, and methods contain essential domains that can be conceptually linked back to the origins of vocational analysis and guidance over a century after their genesis should not be surprising to a forensic practitioner. This research documents and summarizes the empirical link between what we know to be important in vocational earning capacity evaluation: the use of secondary and/or primary occupational and labor market information. It also allows forensic rehabilitation practitioners to move beyond reflecting where we are, and more toward future research, practice, and literature development to better evolve our assessment skills and core elements to be considered when evaluating the earning capacity of an individual with a disability.

References

- Austin, T., Barzegarian, B., Ciddeo, M., Cottle, R., Diaz, F., Ferra, K., Hall, R., . . . Winn-Boaitey, K. (2009). White paper: IARP DFEC work group (recommended standards for vocational rehabilitation experts in California). *The Rehabilitation Professional*, 17(3), 147–156.
- Barros-Bailey, M. (2011, February). *12 steps to valid and reliable labor market surveys*. Pre-conference workshop presented at the International Association of Rehabilitation Professionals 2011 Case Management/Disability Management Conference, Scottsdale, AZ.
- Barros-Bailey, M. (in press). Teaching labor market survey methodology in rehabilitation counseling. *Rehabilitation Research, Policy, and Education*.
- Barros-Bailey, M. (2012a). Commentary: Labor market survey methodology and applications. *Rehabilitation Professional*, 20(2), 137–146.
- Barros-Bailey, M. (2012b). Occupational and labor market information. In D. R. Strauser (Ed.), *Career development, employment, and disability: From theory to practice*. New York, NY: Springer Publications. Manuscript submitted for publication.
- Barros-Bailey, M. (2012c). The 12-step labor market survey methodology in practice: A case example. *Rehabilitation Professional*, 20(1), 1–10.
- Barros-Bailey, M., Benshoff, J. J., & Fischer, J. (2008). Rehabilitation Counseling in the Year 2011: Perceptions of Certified Rehabilitation Counselors. *Journal of Applied Rehabilitation Counseling*, 39(4), 39–45. doi: 10.1177/0034355208324262
- Barros-Bailey, M., & Saunders, J. L. (in press). Benchmarking the use of labor market surveys by Certified Rehabilitation Counselors. *Rehabilitation Counseling Bulletin*.
- Barros-Bailey, M., & Saunders, J. L. (2012). *Labor market surveys: Importance to and Preparedness of Certified Rehabilitation Counselors*. Manuscript submitted for publication.
- Berg, J. (2003). Evaluating workers' compensation claims for permanent and total disability in Washington State: A forensic vocational rehabilitation methodology. *Journal of Forensic Vocational Analysis*, 6, 89–98.
- Boyd, D., & Toppino, D. (1995). The forensic vocational experts approach to wage loss analysis. *NARPPS Journal*, 10(3), 95–102.
- Chan, F., Taylor, D., Currier, D., Chan, C. C. H., Wood, C., & Lui, J. (2000). Disability management practitioners: A work behavior analysis. *Journal of Vocational Rehabilitation*, 15, 47–56.
- Cohen, M., & Yankowski, T. (1996). Methodologies to improve economic and vocational analysis in personal injury litigation. *Litigation Economics Digest*, 2(1), 126–135.
- Certified Disability Management Specialist Commission. (2012). *About us*. Retrieved August 31, 2012 from <http://www.cdms.org/about.php>
- Deutsch, P., & Sawyer, H. (1986). *A guide to rehabilitation*. New York, NY: Matthew Bender.
- Dillman, E. (1998). Interfacing the economic and vocational in personal injury cases. *Journal of Forensic Vocational Assessment*, 1(2), 19–39.
- Field, T. (2008). Estimating earning capacity: Venues, factors, and methods. *Estimating Earning Capacity*, 1(1), 5–40.
- Hankins, A. (2009). Assessing the critical concept of earning capacity in forensic vocational analysis. *Estimating Earning Capacity*, 2(1), 67–84.
- Leahy, M. J., Chan, F., & Saunders, J. L. (2003). Job functions and knowledge requirements of Certified Rehabilitation Counselors in the 21st century. *Rehabilitation Counseling Bulletin*, 46(2), 66–81.
- Leahy, M. J., Chan, F., Sung, C., & Kim, M. (2011). *An analysis of job functions and knowledge requirements of Certified Rehabilitation Counselors*. Schaumburg, IL: Commission on Rehabilitation Counselor Certification.
- Leahy, M. J., Muenzen, P., Saunders, J., & Strauser, D. (2008). Essential knowledge domains underlying effective rehabilitation counseling process. *Journal of Applied Rehabilitation Counseling*, 39(4), 28–38.
- Leahy, M. J., Shapson, P. R., & Wright, G. N. (1987). Professional rehabilitation competency research: Project methodology. *Rehabilitation Counseling Bulletin*, 31(2), 94–106.
- Leahy, M. J., Szymanski, E. M., & Linkowski, D. (1993). Knowledge importance in rehabilitation counseling. *Rehabilitation Counseling Bulletin*, 37(2), 130–146.
- Matkin, R. (1982). Rehabilitation services offered in the private sector: A pilot investigation. *Journal of Rehabilitation*, 48(4), 31–33.

- McCroskey, B. (1992). The validity of the vocational quotient as a predictor of starting wage earning capacity. *The Vocationologist*, 1(1), 23-24.
- McCroskey, B., & Hahn, S. (1995). The validity of the vocational quotient as a predictor of calendar year (CY) 1994 starting wages in Minnesota: Study #1. *Journal of Vocationology*, 1(1), 9-13.
- McCroskey, B., & Hahn, S. (1998). The vocational quotient (VQ) as a predictor of earning capacity: 1996-97 criterion referenced follow up validity studies. *The Earnings Analyst*, 1(1), 39-80.
- Muthard, J. E., & Salomone, P. R. (1969). The roles and functions of rehabilitation counselors. *Rehabilitation Counseling Bulletin*, 13, 81-168.
- Neulicht, A., & Berens, D. (2005). PEEDS-RAPEL: A case conceptualization model for evaluating pediatric cases. *Journal of Life Care Planning*, 4(1), 27-36.
- Neulicht, A., Gann, C., Berg, J. F., & Taylor, R. H. (2007). Labor market search: Utilization of labor market research and employer sampling by vocational experts. *The Rehabilitation Professional*, 15(4), 29-44.
- Robinson, R. (2012). Rehabilitation and vocational earning capacity models. In R. Robinson (Ed.), *Foundations of Forensic Vocational Rehabilitation*. Textbook in preparation.
- Robinson, R., & Pomeranz, J. (2011). The vocational and rehabilitation assessment model (VRAM): Introduction of an empirically derived model of forensic vocational and rehabilitation assessment. *The Rehabilitation Professional*, 19(4), 91-104.
- Robinson, R., Pomeranz, J., & Young, M. (2012). Identification of construct domains and variables considered core to vocational earning capacity assessment in a legal-forensic setting: A delphi study. *Forensic Rehabilitation and Economics*, 5(1), 5-34.
- Rosenthal, D. A., Hursh, N., Lui, J., Isom, R., & Sasson, J. (2007). A survey of current disability management practice: Emerging trends and implications for Certification. *Rehabilitation Counseling Bulletin*, 50(2), 76-86.
- Scully, S. M., Habeck, R. V., & Leahy, M. J. (1999). Knowledge and skill areas associated with disability management practice for rehabilitation counselors. *Rehabilitation Counseling Bulletin*, 43(1), 20-29.
- Shahnasarian, M. (2001). *Assessment of earning capacity*. Tucson, AZ: Lawyers & Judges.
- Shahnasarian, M. (2004a). *Assessment of earning capacity* (2nd ed.). Tucson, AZ: Lawyers & Judges.
- Shahnasarian, M. (2004b). The clinical interview in vocational rehabilitation assessment. *Directions in Rehabilitation Counseling*, 15, 109-118.
- Shahnasarian, M. (2004c). *Earning capacity assessment form*. Athens, GA: Elliott & Fitzpatrick.
- Shahnasarian, M. (2004d). The earning capacity assessment form: An introduction and study of its efficacy. *The Rehabilitation Professional*, 12(1), 40-53.
- Shahnasarian, M. (2008). A review of recent, circulated publications on earning capacity assessment. *The Rehabilitation Professional*, 16(1), 39-42.
- Shahnasarian, M. (2009a). Perceptions of plaintiff or defense retention source as a confounding variable in the assessment of earning capacity claims: A reliability study of the earning capacity assessment form. *Estimating Earning Capacity*, 2(2), 85-98.
- Shahnasarian, M. (2009b). The earning capacity assessment form: An exploratory study to assess the feasibility of establishing cut-off scores to determine impairment to earning capacity ratings. *Estimating Earning Capacity*, 2(1), 43-60.
- Shahnasarian, M. (2010a). *Earning capacity assessment form* (2nd ed.). Lutz, FL: Psychological Assessment Resources.
- Shahnasarian, M. (2010b). Earning capacity assessment: Operationalizing a theory. *Forensic Rehabilitation and Economics*, 3(2), 111-124.
- Shahnasarian, M., & Leitten, C. (2006). The earning capacity assessment form: An exploratory factor analysis. *The Rehabilitation Professional*, 14(4), 39-45.
- Shahnasarian, M., & Leitten, C. (2008). The earning capacity assessment form: A study of its reliability. *The Rehabilitation Professional*, 16(2), 71-82.
- Spitznagel, R. J., & Cody, L. S. (2003). The role and functions of vocational experts in workers' compensation in Florida. *Journal of Forensic Vocational Analysis*, 6(2), 127-134.
- Toppino, D., & Agrusa, J. (2000). Earnings capacity mitigation: Three paradigms and a common investigative approach. *The Journal of Forensic Vocational Analysis*, 3(1), 55-66.
- Tracy, L., & Wallace, A. (2010). The impact of case law on vocational expert examinations and opinions in marital dissolution. *The Rehabilitation Professional*, 18(1), 19-30.
- Van de Bittner, E. E. (2003). Evaluating workers' compensation claims for permanent and total disability in California: A vocational rehabilitation methodology. *Journal of Forensic Vocational Analysis*, 6, 77-88.
- Van de Bittner, E. E. (2006). Determining diminished future earning capacity in state workers' compensation: The California model. *Journal of Forensic Vocational Analysis*, 9, 19-31.
- Weed, R., & Field, T. (1994). *Rehabilitation consultant's handbook*. Athens, GA: Elliott & Fitzpatrick.

- Weed, R., & Field, T. (2001). *Rehabilitation consultant's handbook* (Rev. ed.). Athens, GA: Elliott & Fitzpatrick.
- Williams, J. M., Dunn, P. L., Bast, S., & Giesen, J. (2006). Factors considered by vocational rehabilitation professionals in employability and earning capacity assessment. *Rehabilitation Counseling Bulletin* 50(1), 24-34.
- Wright, G. N., Leahy, M. J., & Shapson, P. R. (1987). Rehabilitation Skills Inventory: Importance of counselor competencies. *Rehabilitation Counseling Bulletin*, 31(2), 107-118.

Author Note

Mary Barros-Bailey is a bilingual rehabilitation counselor, vocational expert, and life care planner in private practice with Intermountain Vocational Services, Inc. in Boise, Idaho. Rick Robinson is a rehabilitation counselor, vocational consultant, and life care planner in private practice with Robinson Work Rehabilitation Services Co. in Jacksonville, Florida and a Faculty Lecturer at the University of Florida.

For more information about this research, contact Mary Barros-Bailey, Intermountain Vocational Services, Inc., P.O. Box 7511, Boise, ID 83707-1511, barros2002@gmail.com