

Empirically Derived Test Specifications for the Certified Rehabilitation Counselor Examination: Revisiting the Essential Competencies of Rehabilitation Counselors

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Abstract

The purpose of this article is to examine the results of the certified rehabilitation counselor (CRC) knowledge validation study conducted in collaboration with the Commission on Rehabilitation Counselor Certification (CRCC). The research design for the present study includes both descriptive and ex post facto approaches. Three hundred ninety-four CRCs completed the *Knowledge Validation Inventory–Revised* (KVI-R) survey. Factor analysis results revealed six knowledge domains: (a) rehabilitation and mental health counseling, (b) employer engagement and job placement, (c) case management, (d) medical and psychosocial aspects of chronic illness and disability, (e) research methodology and evidence-based practice, and (f) group and family counseling. The findings of this study provide important information for CRCC to examine and develop test and item specifications that will guide future versions of the CRC examination. The findings also inform the description of the knowledge base underlying the practice of rehabilitation counseling and contribute further empirical evidence regarding the knowledge domains identified in this replication and extension of the previous study completed in 2012.

Keywords

rehabilitation counseling, roles and functions, knowledge domains, test specifications, CORE, CACREP, CRCC, CRC, CRCE

Among the different counseling disciplines, the certified rehabilitation counselor (CRC) credentialing process is the oldest and most reputable certification mechanism in the United States (Leahy, Chan, Sung, & Kim, 2013; Leahy & Holt, 1993). The application of scientific research to develop the test and item specifications has been the hallmark of the CRC certification examination (Leahy et al., 2013). Rubin and colleagues (1984) conducted the first national role and function study of the CRC, and provided the test specifications for refining the content of the certification examination and the item pool. Since 1985, the Commission on Rehabilitation Counselor Certification (CRCC) has been conducting role and function and knowledge validation studies regularly to ensure the relevance and validity of the Certified Rehabilitation Counselor Examination (CRCE, Leahy et al., 2013). Findings from these studies were also used by the Council on Rehabilitation Education (CORE) to develop curriculum standards for

master's program in rehabilitation counseling. With the merger of CORE to the Council for Accreditation of Counseling and Related Educational Programs (CACREP), CRC role and function study becomes even more important for integrating rehabilitation counseling contents in the CACREP curriculum standards for the rehabilitation counseling specialty area.

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Table 1. Job Functions and Knowledge Domains Identified by Leahy et al. (2013).

Job functions	Knowledge domains
1. Job placement, vocational assessment, and career counseling Job placement Vocational assessment and career counseling Occupational information analysis	1. Job placement, consultation, and assessment Job development and placement services Vocational consultation and services for employers Disability management Assessment and evaluation
2. Counseling, psychosocial interventions, and case management Counseling Psychosocial interventions Case management and advocacy	2. Case management and community resources Mental health and health care advocacy Case management and utilization of community resources
3. Demand-side employment, workers' compensation, and forensic services Demand-side employment Workers' compensation and forensic services	3. Individual, group, and family counseling and evidence-based practice Individual, group, and family counseling Evidence-based practice 4. Medical, functional, and psychosocial aspects of disability

Leahy and colleagues (2013) conducted a CRC study with a representative sample of CRCs to examine the major job functions and knowledge domains required for the professional practice of rehabilitation counseling. They found that rehabilitation counseling practice and the service delivery environments are changing swiftly, and rehabilitation counselors are practicing in diverse clinical settings. Their study was conducted with a goal to revise and update the test specifications for the CRCE. Specifically, three major rehabilitation counselor job functions and four knowledge domains were identified (see Table 1; Leahy et al., 2013).

Findings from the Leahy et al. (2013) study provided a strong empirical support for the certification processes as well as information to guide the development of test specifications for the CRCE process. However, more than 5 years have passed since the most recent study completed in 2012 (Leahy et al., 2013). Over the past several years, enormous changes have taken place in the rehabilitation counseling profession, including the merger between CORE and CACREP on July 1, 2017 (CACREP, 2015). Clinical settings for the professional practice of rehabilitation counseling have continued to diversify, and the delivery of services has continued to evolve to address the physical and mental well-being and employment needs of people with disabilities (Chan et al., 2017). Recognizing these changes in the field and consistent with the accreditation requirements that CRCC regularly studies and reviews the test and item specifications used to guide the CRCE process, a new study was undertaken in 2016 to examine the major knowledge domains of rehabilitation counseling practice in diverse practice environments. The findings and specific data from this study have recently been used by the CRCC to examine and develop test specifications for future versions of the CRCE as well as for the continued accreditation of the CRCC. The purpose of this article is to report the results of the CRC knowledge validation study conducted by the CRCC in 2016.

Research Design and Research Questions

The research design for the present study includes both descriptive and ex post facto approaches. Specifically, factor analysis was used to examine major knowledge domains underlying the professional practice of rehabilitation counseling. The ex post facto portion of the study includes comparisons of knowledge domain scores across rehabilitation practice settings and counselor licensure status. The research questions addressed in the present study are as follows:

Research Questions 1 (RQ1): What are the underlying dimensions of the *Knowledge Validation Inventory-Revised* (KVI-R) scores?

Research Questions 2 (RQ2): How important are these knowledge domains for the professional practice of rehabilitation counseling?

Research Questions 3 (RQ3): Do CRCs from different practice settings vary in their perceptions of the relative importance of knowledge domains required for rehabilitation counseling practice?

Research Questions 4 (RQ4): Do CRCs with the licensed professional counselor (LPC) credential vary in their perceptions of the relative importance of knowledge domains required for rehabilitation counseling practice compared with CRCs without counselor licensure?

Method

Participants

A sample of CRCs was randomly selected from the CRCC database, and data were collected from August 24, 2014, through October 10, 2014. In addition to the initial email request to participate, potential participants received three

additional follow-up email requests before the end of the data collection process to increase overall response rate. Three hundred ninety-four out of 1,809 CRCs who received email completed the KVI-R survey, for a usable response rate of 21.8%. Of the 394 participants who submitted KVI-R survey questionnaires, 317 provided responses with less than 5% missing at the item level.

Respondents included 69.9% women and 30.1% men, with mean age of 48.09 years ($SD = 12.53$ years). They had an average of 14.83 years ($SD = 11.15$ years) of experience since receiving their CRC credential. In addition to being a CRC, 88 participants (27.8%) indicated that they are also an LPC. For the purpose of this study, LPCs refer to licensed professional counselors, licensed clinical professional counselors, and licensed mental health counselors. The majority of the respondents identified themselves as Caucasian/non-Hispanic (82.4%), followed by African Americans (10.1%), Hispanic/Latino Americans (3.6%), Asian Americans (1.6%), American Indian/Native Americans (0.3%), and Other (2.0%). Most respondents have master's degree (81.3%) for their highest degree earned followed by doctoral degree (13.0%), bachelor's degree (1.6%), and other (4.1%). Academic majors of the participants included (a) rehabilitation counseling (71.3%), (b) other counseling specialty (7.6%), (c) rehabilitation psychology (4.1%), (d) psychology (4.1%), (e) other rehabilitation specialty (2.5%), (f) social work (0.9%), and (g) other (9.5%). Rehabilitation practice settings reported by the participants included (a) public vocational rehabilitation agencies (34.1%), (b) private/proprietary rehabilitation companies (24.0%), (c) schools and universities (15.1%), (d) medical/psychiatric facilities (10.4%), (e) nonprofit rehabilitation facility/organizations (6.3%), and (f) other (10.1%). The demographics of the current study sample was reflective of the actual overall population demographics for CRCs.

Measures

KVI-R. The KVI-R developed by Leahy et al. (2013) was used as the primary instrument for the study. The current version of the KVI-R was first carefully reviewed and revised through a Delphi study with a panel of subject matter experts before being distributed for the study. In addition, a *Demographic Questionnaire* was used to collect demographic information (e.g., gender, age, race/ethnicity, years of experience, job settings, job titles, and LPC credentials) from the CRC participants.

Delphi study. To validate and revise the KVI-R, the Delphi method was used to obtain consensus of a panel of practitioners, educators, and researchers who are experts in the professional competencies of rehabilitation counseling. Twenty-one experts were nominated by members of the

CRC Examination and Research Committee. Nine agreed to participate. The expert panel comprised five men and four women, with mean age of 42.75 years ($SD = 11.02$ years). Seven were Caucasians and two were Asian Americans. Two of the expert panel members reported having a disability. The majority of the respondents have either a master's degree (44.4%) or a doctoral degree (44.4%). The job titles reported by the participants include (a) professor (44.4%), (b) vocational rehabilitation counselor/specialist (22.2%), (c) administrator/manager/owner (11.1%), (d) supervisor (11.1%), and (e) transition specialist (11.1%). They rated (a) relevancy of the 91 original KVI-R items to the contemporary practice of rehabilitation counseling using a yes/no format and (b) the importance of 25 new knowledge items using a 5-point Likert-type importance rating scale (1 = *not important*, 2 = *somewhat important*, 3 = *important*, 4 = *very important*, and 5 = *extremely important*). Findings from the panel of experts indicated that most KVI-R items are still highly relevant for contemporary rehabilitation counseling practice. Only one item from the original scale and three new items met the threshold of concern in terms of low mean importance ratings. After a careful review of the descriptive statistics and contents of the items, two items were eliminated from the instrument before subjecting the KVI-R for an exploratory factor analysis due to low means on the importance of the items to practice and outcomes. These two items are (a) concepts and principles of organizational development and stakeholder management and (b) life-care planning and life-care planning services.

Knowledge Validation Inventory—Revised—Final version. The final version of the KVI-R for this study is a 114-item survey instrument. Respondents were asked to rate the importance of each knowledge item using a 5-point Likert-type scale (1 = *not important*, 2 = *somewhat important*, 3 = *important*, 4 = *very important*, and 5 = *extremely important*) related to the professional practice of rehabilitation counseling.

Data Analysis

An exploratory factor analysis using principal axis factoring (also known as common factor analysis) was performed to identify the underlying dimensions of the KVI-R scores important for the professional practice of rehabilitation counseling (Clark & Watson, 1995; Costello & Osborne, 2005; Floyd & Widaman, 1995). A MANOVA was computed to test the differences among rehabilitation counselors who worked in different practice settings on the linear combination of the major rehabilitation counseling knowledge domains derived from factor analysis. When a multivariate effect was found, a follow-up univariate ANOVA was computed for each dependent variable.

Results

RQ1: What Are the Underlying Dimensions of the KVI-R Scores?

The Kaiser–Meyer–Olkin measure of sampling adequacy for the KVI-R items was .95, which exceeded the minimum criteria of .50, suggesting the sample was factorable (Costello & Osborne, 2005). The Bartlett’s test of sphericity, which tests the null hypothesis that the correlation matrix is an identity matrix, was found to be significant, $\chi^2(6,441, N = 317) = 28,858.14, p < .001$, indicating that correlations in the data were appropriate for factor analysis. Finally, the communalities were all above .3, confirming that each item shared some common variance with other items. Initially, the Kaiser–Guttman rule (eigenvalue greater than 1) was used to determine how many factors should be retained (Nunnally & Bernstein, 1994). A 21-factor solution was indicated. Cattell’s *scree* test was used as an alternative method to determine the number of factors to retain (Cattell, 1966; Gorsuch, 1990). Using the *scree* test, a six-factor solution (accounting for 51.3% of the variance) was indicated and it was rotated to simple structure using promax rotation. Next, items with factor loadings equal to or greater than .35 were retained for further analyses. The final six-factor solution was found to be parsimonious, meaningful, and interpretable. For three of the larger factors, additional factor analyses were performed to identify subdomains to increase the homogeneity and interpretability of the item clusters. The mean importance rating, the factor loading, and the communality for each knowledge item in each of the six knowledge domains are presented in Table 2. In addition, the subdomains for the first three knowledge domains are presented in Tables 3 to 5.

Factor 1—Rehabilitation and mental health counseling. This factor includes 30 knowledge items that are important to rehabilitation and mental health counseling intervention activities. Subsequent factor analysis of these 30 items revealed the items can be further organized to three subdomains: (a) rehabilitation and mental health counseling theories and techniques, (b) crisis and trauma counseling, and (c) employment counseling. The internal consistency reliability coefficient (Cronbach’s α) for this knowledge domain related to counseling interventions was computed to be .96. The Cronbach’s alpha for the three subdomains were .93, .93, and .80, respectively.

Factor 2—Employer engagement and job placement. This factor consists of 20 knowledge items that are important to employment intervention activities. Subsequent factor analysis of these 20 items revealed the items can be further organized into three subdomains: (a) job placement and job development, (b) occupational analysis, and (c) demand-side employment. Cronbach’s alpha for this knowledge domain

related to employment interventions was computed to be .96. The internal consistency reliability coefficients for the three subdomains were .91, .91, and .86, respectively.

Factor 3—Case management. This factor comprises 22 knowledge items that are important to case management-related activities. Subsequent factor analysis of these 22 items revealed the items can be further organized to three subdomains: (a) health care and disability management, (b) caseload management, and (c) community resources. Cronbach’s alpha for this knowledge domain related to case management activities was computed to be .94. The internal consistency reliability coefficients for the three subdomains were .91, .77, and .87, respectively.

Factor 4—Medical and psychosocial aspects of chronic illness and disability. This factor includes 13 knowledge items related to medical and psychosocial aspects of chronic illness and disability. Cronbach’s alpha for this knowledge domain was computed to be .90.

Factor 5—Research methodology and evidence-based practice. This factor comprises nine knowledge items related to rehabilitation research methods and evidence-based practices. Consistent with previous CRC knowledge validation studies, this knowledge domain also included two items related to forensic rehabilitation. One plausible explanation is because forensic rehabilitation practice requires searching research database to evaluate the effectiveness of medical and vocational rehabilitation interventions. Cronbach’s alpha for this knowledge domain was computed to be .90.

Factor 6—Group and family counseling. This factor comprises five knowledge items related to family and group counseling. Cronbach’s alpha for this knowledge domain was computed to be .89.

RQ2: How Important Are These Knowledge Domains for the Professional Practice of Rehabilitation Counseling?

The mean importance rating of each domain is summarized in Table 6. The mean importance rating for rehabilitation and mental health counseling domain was 3.60 ($SD = 0.77$), 4.01 ($SD = 0.73$) for employer engagement and job placement domain, 3.76 ($SD = 0.68$) for case management, 4.18 ($SD = 0.57$) for medical and psychosocial aspects of chronic illness and disability, 3.10 ($SD = 0.85$) for research methodology and evidence-based practice, and 3.11 ($SD = 0.94$) for group and family counseling. “Medical and psychosocial aspects of chronic illness and disability” was the *most important* knowledge domain as rated by the CRCs who participated in this study. However, the domain of “research methodology and evidence-based practice” as well as “group and family

Table 2. Means, Standard Deviations, and Factor Loadings for the Six Knowledge Domain Factors.

Item number	M (SD)	Factor loading	h^2
Factor 1—Rehabilitation and mental health counseling (Cronbach's $\alpha = .96$)			
102. Scientifically validated counseling/therapy for clients with PTSD	3.57 (1.10)	.94	.66
101. Scientifically validated counseling/therapy for clients with alcohol and other drug use problems	3.49 (1.10)	.88	.66
105. Counseling theories, medical aspects, and job development approaches specifically useful for working with military veterans	3.58 (1.16)	.85	.58
115. Effective rehabilitation counseling services for veterans with polytrauma injuries	3.58 (1.13)	.82	.58
104. Systems, services, and legislation that support military veterans such as the U.S. Department of Veterans Affairs	3.52 (1.14)	.71	.48
63. Evidence-based psychiatric rehabilitation practices	3.58 (1.13)	.68	.62
113. Assessment of client dangerousness and development of a safety plan	3.66 (1.13)	.65	.50
109. Impact of crises, disasters, and other trauma-causing events on people with disabilities	3.47 (1.13)	.65	.62
111. Use of principles of crisis intervention for people with disabilities during crises, disasters, and other trauma-causing events	3.30 (1.20)	.65	.59
72. Treatment planning for clinical problems (e.g., depression and anxiety)	3.72 (1.10)	.59	.57
47. Substance abuse and treatment	3.89 (1.02)	.56	.50
98. Scientifically validated psychosocial and vocational interventions in rehabilitation counseling practice	3.62 (1.04)	.56	.53
76. <i>Diagnostic and Statistical Manual of Mental Disorders</i> (5th ed. <i>DSM-5</i> ; American Psychiatric Association, 2013)	3.68 (1.15)	.55	.39
70. Dual diagnosis and the workplace	3.78 (1.03)	.55	.51
95. Motivational interviewing	3.83 (1.01)	.54	.34
112. Principles, models, and documentation formats for biopsychosocial case conceptualization and treatment planning	2.99 (1.17)	.54	.56
97. Counseling/training to help clients develop workplace socialization skills	3.84 (1.02)	.50	.61
77. Implications of medications as they apply to individuals with disabilities	3.99 (0.91)	.50	.49
99. Diversity training related to disability issues for employers	3.66 (1.11)	.49	.62
114. Concepts such as internalized oppression and institutional racism, as well as the historical and current political climate regarding immigration and socioeconomic status for people with disabilities	3.20 (1.11)	.49	.47
110. The emergency management system within rehabilitation agencies and in the community	3.10 (1.18)	.47	.58
50. Rehabilitation techniques for individuals with psychological disabilities	4.27 (0.82)	.46	.53
11. Individual counseling theories	4.05 (0.91)	.44	.46
116. Financial literacy and benefits counseling and linkages to asset development resources	3.38 (1.12)	.42	.52
71. Theories and techniques of clinical supervision	3.19 (1.11)	.42	.55
94. Individual Placement and Support (IPS) model evidence-based supported employment	3.36 (1.18)	.42	.48
89. Establishing and maintaining effective working alliances with the clients we serve	4.10 (0.97)	.41	.40
12. Individual counseling practices and interventions	4.20 (0.86)	.41	.44
91. Research databases (e.g., Cochrane Collaboration, PsylINFO, and MEDLINE)	2.75 (1.16)	.38	.60
106. Strategic planning techniques and budget planning	3.07 (1.13)	.36	.54
Factor 2—Employer engagement and job placement (Cronbach's $\alpha = .96$)			
38. Job placement and job development strategies	4.18 (0.95)	.91	.69
41. Employer development for job placement	3.86 (1.06)	.84	.70
37. Ergonomics, job accommodations, and assistive technology	4.09 (1.00)	.78	.67
40. Consultation process with employers related to management of disability issues in the workplace	4.00 (1.01)	.78	.61
100. Assisting employers with job accommodation issues for their employees with disabilities	4.01 (1.03)	.76	.67
36. Job modification and restructuring techniques	3.99 (1.00)	.73	.62

(continued)

Table 2. (continued)

Item number	M (SD)	Factor loading	h^2
42. Job readiness including seeking and retention skills development	4.03 (1.00)	.73	.62
35. Job analysis	3.84 (1.07)	.72	.70
23. Vocational implications of functional limitations associated with disabilities	4.46 (0.78)	.68	.59
39. Supported employment strategies and services	3.86 (1.09)	.68	.55
52. Transferable skills analysis	4.05 (0.97)	.65	.60
51. School-to-work transition for students with disabilities	4.01 (1.08)	.62	.49
33. The functional capacities of individuals with disabilities	4.41 (0.75)	.60	.52
24. Occupational and labor market information	4.16 (0.90)	.59	.47
80. Educating employers on disability-related issues (e.g., ADA, job accommodation, compliance, disability law)	3.89 (1.06)	.56	.60
30. Interpretation of assessment results for rehabilitation planning purposes	4.22 (0.88)	.45	.55
107. Assistive technology to reduce or eliminate barriers and functional limitations	4.08 (0.95)	.43	.51
87. Demand-side employment issues related to hiring, return to work, and retention	3.55 (1.06)	.43	.57
75. Computer-based job matching systems	3.39 (1.11)	.41	.51
64. Work conditioning or work hardening resources and strategies	3.44 (1.09)	.39	.52
Factor 3—Case management (Cronbach's $\alpha = .94$)			
86. Insurance programs (e.g., Medicare, Medicaid, group and individual, short- and long-term disability, personal injury no-fault liability)	3.44 (1.09)	.68	.55
85. Managed care concepts (e.g., PPO, HMO, POS, evidence-based practice, and provincial/territorial health insurance programs)	3.04 (1.14)	.67	.62
56. Techniques for working effectively in teams and across disciplines	3.79 (1.06)	.66	.51
61. Health care benefits and delivery systems	3.50 (0.98)	.65	.51
67. Professional roles, functions, and relationships with other human service providers	3.67 (0.99)	.57	.47
57. Techniques for working with individuals with limited English proficiency	3.41 (1.08)	.54	.49
58. Case recording and documentation	4.09 (0.91)	.54	.46
46. Disability prevention and management strategies	3.43 (1.09)	.50	.56
68. Advocacy processes needed to address institutional and social barriers that impede access, equity, and success for clients	3.69 (1.12)	.48	.60
60. Negotiation, mediation, and conflict resolution strategies	4.02 (0.98)	.47	.39
62. Health promotion and wellness concepts and strategies for people with chronic illness and disability	3.48 (1.08)	.46	.51
93. Use technology to manage caseload and related documentation	3.81 (0.98)	.45	.35
48. Social Security programs, benefits, work incentives, and disincentives	4.08 (0.96)	.44	.38
20. Community resources and services for rehabilitation planning	4.26 (0.83)	.41	.45
84. Programs and services for specialty populations (e.g., school-to-work transition, spinal cord injury, traumatic brain injury, mental health, developmental disability, substance abuse, corrections)	3.91 (1.00)	.40	.57
78. Individual and family adjustment to disability	3.93 (0.95)	.40	.50
34. Appropriate medical intervention resources	3.97 (0.90)	.39	.39
31. Financial resources for rehabilitation services	3.92 (0.97)	.39	.45
83. Services available through client advocacy programs (e.g., Client Assistance Program [CAP], legal aid)	3.33 (1.05)	.39	.54
17. The services available for a variety of rehabilitation populations, including persons with multiple disabilities	4.41 (0.79)	.39	.53
65. Principles of caseload management	3.83 (1.03)	.39	.36
19. Independent living services	3.65 (1.02)	.36	.52
Factor 4—Medical and psychosocial aspects of chronic illness and disability (Cronbach's $\alpha = .89$)			
26. Medical aspects and implications of various disabilities	4.39 (0.77)	.56	.49
59. Clinical problem-solving and critical-thinking skills	4.35 (0.83)	.52	.43
55. Ethical decision-making models and processes	4.20 (0.92)	.49	.50
5. Risk management and professional ethical standards for rehabilitation counselors	4.34 (0.84)	.48	.46
25. Medical terminology	4.06 (0.90)	.47	.39

(continued)

Table 2. (continued)

Item number	M (SD)	Factor loading	h^2
13. Behavior and personality theory	3.95 (0.94)	.46	.47
29. The tests and evaluation techniques available for assessing clients' needs	4.09 (0.87)	.43	.54
27. The psychosocial and cultural impact of disability on the individual	4.40 (0.74)	.42	.50
1. Rehabilitation terminology and concepts	4.11 (0.92)	.39	.30
14. Human growth and development	3.65 (0.98)	.39	.43
15. Diversity and multicultural counseling issues	4.17 (0.84)	.37	.42
16. Environmental and attitudinal barriers for individuals with disabilities	4.31 (0.85)	.37	.49
18. The case management process, including case finding, planning, service coordination, referral to and utilization of other disciplines, and client advocacy	4.34 (0.85)	.35	.43
Factor 5—Research methodology and evidence-based practice (Cronbach's $\alpha = .90$)			
66. Methods and techniques used to conduct labor market surveys	3.24 (1.20)	.58	.57
44. Rehabilitation research methods and statistics	3.04 (1.12)	.57	.61
79. Psychometric concepts related to measurement (reliability, validity, standard error of measurement)	3.21 (1.17)	.55	.51
49. Forensic rehabilitation (expert testimony for earnings capacity evaluation)	2.97 (1.24)	.53	.41
81. Evidence-based practice and research utilization	3.12 (1.12)	.48	.59
43. Rehabilitation research literature related to evidence-based practice	3.40 (1.06)	.47	.52
90. Systematic review, meta-analysis	2.75 (1.10)	.42	.62
45. Workers' compensation laws and practices	3.35 (1.13)	.41	.45
53. Marketing strategies and techniques for rehabilitation services	3.30 (1.12)	.36	.49
Factor 6—Group and family counseling (Cronbach's $\alpha = .89$)			
8. Group counseling practices and interventions	3.05 (1.20)	.77	.66
10. Family counseling practices and interventions	3.09 (1.11)	.75	.62
9. Family counseling theories	3.07 (1.11)	.73	.64
7. Group counseling theories	2.95 (1.14)	.73	.67
4. Organizational structure of rehabilitation counseling practice settings (e.g., public, private-for-profit, and not-for-profit service delivery systems)	3.35 (1.11)	.44	.43

Note. ADA = Americans with Disabilities Act; HMO = Health Maintenance Organization; POS = Point of Service; PPO = Preferred Provider Organization; PTSD = posttraumatic stress disorder.

counseling” were rated by CRCs who participated in this study as the *least important* knowledge domains. See the appendix for means and standard deviations for the top ten rated items.

RQ3: Do CRCs From Different Practice Settings Vary in Their Perceptions of the Relative Importance of Knowledge Domains Required for Rehabilitation Counseling Practice?

A MANOVA was computed to test the differences among rehabilitation counselors who worked in different practice settings on the linear combination of the six major rehabilitation counseling knowledge domains. MANOVA revealed a significant multivariate effect, Wilks' lambda = .71, $F(30, 1,226) = 3.61, p < .001, \eta^2 = .069$; the partial η^2 of .066 indicates that the effect for group differences in our MANOVA accounted for 6.6% of the group differences. A follow-up univariate ANOVA was computed for each dependent variable. The alpha level was divided by six for each pair-wise comparison to control for Type I error ($\alpha = .05/6 = .0083$). Rehabilitation counselors across employment settings rated case management and psychosocial and medical aspects of

chronic illness and disability as similarly important. The ANOVA results indicated CRCs in the six practice settings differed significantly on two of the six knowledge domains: (a) rehabilitation and mental health counseling, $F(5, 311) = 3.50, p = .003, \eta^2 = .053$, indicating the effect of group differences accounted for 5.3% of the variance in rehabilitation and mental health counseling; and (b) group and family counseling, $F(5, 311) = 5.34, p = .001, \eta^2 = .079$, indicating the effect of group differences accounted for 7.9% of the variance in group and family counseling.

Post hoc comparisons using the Tukey's procedure indicated that rehabilitation counselors who work in not-for-profit rehabilitation organizations ($M = 3.95, SD = 0.66$) and school and university settings ($M = 3.76, SD = 0.73$) rated rehabilitation and mental health counseling knowledge as more important than practitioners who work in proprietary rehabilitation settings ($M = 3.33, SD = 0.82$). Practitioners who work in school and university settings ($M = 3.58, SD = 0.85$) also rated group and family counseling knowledge as more important than practitioners in public vocational rehabilitation agencies ($M = 2.91, SD = 0.96$) and proprietary rehabilitation settings ($M = 2.90, SD = 0.96$).

Table 3. Means, Standard Deviations, and Factor Loadings for Subdomains in Factor 1.

Item number	M (SD)	Factor loading	h^2
Subdomain A—Rehabilitation and mental health counseling theories and techniques (Cronbach's $\alpha = .93$)			
101. Scientifically validated counseling/therapy for clients with alcohol and other drug abuse problems	3.49 (1.10)	.76	.72
63. Evidence-based psychiatric rehabilitation practices	3.58 (1.13)	.74	.63
47. Substance abuse and treatment	3.89 (1.02)	.70	.50
72. Treatment planning for clinical problems (e.g., depression and anxiety)	3.72 (1.10)	.70	.60
12. Individual counseling practices and interventions	4.20 (0.86)	.67	.37
70. Dual diagnosis and the workplace	3.78 (1.03)	.63	.52
11. Individual counseling theories	4.05 (0.91)	.62	.35
102. Scientifically validated counseling/therapy for clients with PTSD	3.57 (1.10)	.61	.69
76. <i>Diagnostic and Statistical Manual of Mental Disorders</i> (5th ed., DSM-5; American Psychiatric Association, 2013)	3.68 (1.15)	.61	.42
95. Motivational interviewing	3.83 (1.01)	.59	.42
50. Rehabilitation techniques for individuals with psychological disabilities	4.27 (0.82)	.51	.42
71. Theories and techniques of clinical supervision	3.19 (1.11)	.47	.46
77. Implications of medications as they apply to individuals with disabilities	3.99 (0.91)	.47	.42
98. Scientifically validated psychosocial and vocational interventions in rehabilitation counseling practice	3.62 (1.04)	.46	.49
89. Establishing and maintaining effective working alliances with the clients we serve	4.10 (0.97)	.32	.37
Subdomain B—Crisis and trauma counseling (Cronbach's $\alpha = .93$)			
104. Systems, services, and legislation that support military veterans such as the U.S. Department of Veterans Affairs	3.52 (1.14)	.85	.59
105. Counseling theories, medical aspects, and job development approaches specifically useful for working with military veterans	3.58 (1.16)	.79	.63
110. The emergency management system within rehabilitation agencies and in the community	3.10 (1.18)	.78	.64
115. Effective rehabilitation counseling services for veterans with polytrauma injuries	3.58 (1.13)	.74	.61
111. Use of principles of crisis intervention for people with disabilities during crises, disasters, and other trauma-causing events	3.30 (1.20)	.64	.63
109. Impact of crises, disasters, and other trauma-causing events on people with disabilities	3.47 (1.13)	.62	.64
106. Strategic planning techniques and budget planning	3.07 (1.13)	.60	.53
114. Concepts such as internalized oppression and institutional racism, as well as the historical and current political climate regarding immigration and socioeconomic status for people with disabilities	3.20 (1.11)	.53	.45
91. Research databases (e.g., Cochrane Collaboration, PsylINFO, and MEDLINE)	2.75 (1.16)	.50	.52
112. Principles, models, and documentation formats for biopsychosocial case conceptualization and treatment planning	2.99 (1.17)	.48	.53
116. Financial literacy and benefits counseling and linkages to asset development resources	3.38 (1.12)	.47	.51
113. Assessment of client dangerousness and development of a safety plan	3.66 (1.13)	.39	.48
Subdomain C—Employment counseling (Cronbach's $\alpha = .80$)			
97. Counseling/training to help clients develop workplace socialization skills	3.84 (1.02)	.46	.65
94. Individual Placement and Support (IPS) model evidence-based supported employment	3.36 (1.18)	.44	.51
99. Diversity training related to disability issues for employers	3.66 (1.11)	.39	.62

Note. PTSD = posttraumatic stress disorder.

RQ4: Do CRCs With the LPC Credential Vary in Their Perceptions of the Relative Importance of Knowledge Domains Required for Rehabilitation Counseling Practice Compared With CRCs Without Counsel or Licensure?

Hotelling's T^2 was used to analyze the data to answer this research question. Hotelling's T^2 test revealed a significant

multivariate effect, Hotelling's $T^2 = .055$, $F(6, 310) = 2.85$, $p < .05$, $\eta^2 = .052$; the partial η^2 of .052 indicates that the effect for group differences accounted for 5.2% of the group differences. A follow-up univariate t test was computed for each dependent variable. The results indicated significant differences on one of the six knowledge domains related to rehabilitation counseling practice. CRCs with the LPC credential rated group and family counseling as significantly

Table 4. Means, Standard Deviations, and Factor Loadings for Subdomains in Factor 2.

Item number	M (SD)	Factor loading	h^2
Subdomain A—Job placement and job development (Cronbach's $\alpha = .91$)			
41. Employer development for job placement	3.86 (1.06)	.83	.77
39. Supported employment strategies and services	3.86 (1.09)	.77	.59
38. Job placement and job development strategies	4.18 (0.95)	.73	.75
42. Job readiness including seeking and retention skills development	4.03 (1.00)	.65	.66
51. School-to-work transition for students with disabilities	4.01 (1.08)	.51	.43
40. Consultation process with employers related to management of disability issues in the workplace	4.00 (1.01)	.47	.62
64. Work conditioning or work hardening resources and strategies	3.44 (1.09)	.46	.48
Subdomain B—Occupational analysis (Cronbach's $\alpha = .91$)			
23. Vocational implications of functional limitations associated with disabilities	4.46 (0.78)	.80	.55
33. The functional capacities of individuals with disabilities	4.41 (0.75)	.73	.53
24. Occupational and labor market information	4.16 (0.90)	.69	.47
35. Job analysis	3.84 (1.07)	.67	.73
30. Interpretation of assessment results for rehabilitation planning purposes	4.22 (0.88)	.59	.47
36. Job modification and restructuring techniques	3.99 (1.00)	.56	.66
52. Transferable skills analysis	4.05 (0.97)	.54	.61
37. Ergonomics, job accommodations, and assistive technology	4.09 (1.00)	.53	.69
Subdomain C—Demand-side employment (Cronbach's $\alpha = .86$)			
100. Assisting employers with job accommodation issues for their employees with disabilities	4.01 (1.03)	.72	.73
80. Educating employers on disability-related issues (e.g., ADA, job accommodation, compliance, disability law)	3.89 (1.06)	.68	.68
107. Assistive technology to reduce or eliminate barriers and functional limitations	4.08 (0.95)	.63	.45
87. Demand-side employment issues related to hiring, return to work, and retention	3.55 (1.06)	.38	.51
75. Computer-based job matching systems.	3.39 (1.11)	.31	.42

Note. ADA = Americans with Disabilities Act.

Table 5. Means, Standard Deviations, and Factor Loadings for Subdomains in Factor 3.

Item number	M (SD)	Factor loading	h^2
Subdomain A—Health care and disability management (Cronbach's $\alpha = .91$)			
85. Managed care concepts (e.g., PPO, HMO, POS, evidence-based practice, and provincial/territorial health insurance programs)	3.04 (1.14)	.81	.64
62. Health promotion and wellness concepts and strategies for people with chronic illness and disability	3.48 (1.08)	.81	.57
61. Health care benefits and delivery systems	3.50 (0.98)	.69	.56
86. Insurance programs (e.g., Medicare, Medicaid, group and individual, short- and long-term disability, personal injury no-fault liability)	3.44 (1.09)	.65	.60
57. Techniques for working with individuals with limited English proficiency	3.41 (1.08)	.56	.50
78. Individual and family adjustment to disability	3.93 (0.95)	.55	.44
68. Advocacy processes needed to address institutional and social barriers that impede access, equity, and success for clients	3.69 (1.12)	.50	.57
56. Techniques for working effectively in teams and across disciplines	3.79 (1.06)	.49	.55
60. Negotiation, mediation, and conflict resolution strategies	4.02 (0.98)	.45	.35
46. Disability prevention and management strategies	3.43 (1.09)	.36	.47
34. Appropriate medical intervention resources	3.97 (0.90)	.35	.34
Subdomain B—Caseload management (Cronbach's $\alpha = .77$)			
65. Principles of caseload management	3.83 (1.03)	.71	.55
58. Case recording and documentation	4.09 (0.91)	.62	.47
93. Use technology to manage caseload and related documentation	3.81 (0.98)	.47	.45
67. Professional roles, functions, and relationships with other human service providers	3.67 (0.99)	.44	.50
Subdomain C—Community resources (Cronbach's $\alpha = .87$)			
17. The services available for a variety of rehabilitation populations, including persons with multiple disabilities	4.41 (0.79)	.75	.52

(continued)

Table 5. (continued)

Item number	<i>M</i> (<i>SD</i>)	Factor loading	<i>h</i> ²
20. Community resources and services for rehabilitation planning	4.26 (0.83)	.71	.51
19. Independent living services	3.65 (1.02)	.68	.54
31. Financial resources for rehabilitation services	3.92 (0.97)	.63	.49
48. Social Security programs, benefits, work incentives, and disincentives	4.08 (0.96)	.54	.42
84. Programs and services for specialty populations (e.g., school-to-work transition, spinal cord injury, traumatic brain injury, mental health, developmental disability, substance abuse, corrections)	3.91 (1.00)	.50	.53
83. Services available through client advocacy programs (e.g., Client Assistance Program [CAP], legal aid).	3.33 (1.05)	.44	.49

Note. HMO = Health Maintenance Organization; POS = Point of Service; PPO = Preferred Provider Organization.

Table 6. The Mean Importance Rating for Each Knowledge Domain and Subdomain.

Knowledge domains/subdomains	<i>M</i> (<i>SD</i>)
Factor 1—Rehabilitation and mental health counseling	3.60 (0.77)
Subdomain A—Rehabilitation and mental health counseling theories and techniques	3.80 (0.73)
Subdomain B—Crisis and trauma counseling	3.31 (0.89)
Subdomain C—Employment counseling	3.61 (0.95)
Factor 2—Employer engagement and job placement	4.01 (0.73)
Subdomain A—Job placement and job development	3.91 (0.84)
Subdomain B—Occupational analysis	4.15 (0.73)
Subdomain C—Demand-side employment	3.79 (0.84)
Factor 3—Case management	3.76 (0.68)
Subdomain A—Health care and disability management	3.61 (0.76)
Subdomain B—Caseload management	3.86 (0.76)
Subdomain C—Community resources	3.94 (0.72)
Factor 4—Medical and psychosocial aspects of chronic illness and disability	4.18 (0.57)
Factor 5—Research methodology and evidence-based practice	3.10 (0.85)
Factor 6—Group and family counseling	3.11 (0.94)

more important ($M = 3.35$, $SD = 0.91$) than CRCs without counselor licensure ($M = 3.02$, $SD = 0.94$).

Discussion

The results of this study provide a new empirical evidence of the knowledge base underlying the professional practice of rehabilitation counseling for CRCs across all clinical practice settings. These findings are intended for use by the CRCC to examine and develop the new test and item specifications for future versions of the CRCE.

The sample randomly drawn from the CRCC database for the KVI-R study was carefully constructed to ensure that the sample was reflective of the overall CRC population characteristics ($N = 16,259$). This was especially important because we anticipated that we would achieve a response rate, based on other studies using an electronic survey platform (e.g., Leahy et al., 2013; Phillips & Leahy, 2012), of somewhere around 20%. As can be observed, the response rate for the KVI-R study was 21.8%. The research sample was clearly similar to the current overall population demographics for CRCs.

In the process of conducting this study, the KVI-R was revised to include content that reflects new knowledge requirements for rehabilitation counselors in today's complex human service delivery environments. These newer areas were developed based on expert opinion of the Delphi panelists (subject matter experts) and a review of contemporary literature in these areas. As a result of the Delphi study, we were able to confirm and validate the items in KVI-R and modify and revise a number of the items based on panelist recommendations, eliminate any dated or redundant items, and create new items based on their recommendations of what appeared missing in the instrument.

These results also provide further validation of the importance of those more traditional knowledge areas (e.g., job development and job placement, personal and group counseling, and case management) associated with the role of the rehabilitation counselors that have been empirically described in previous studies (e.g., Leahy, Chan, & Saunders, 2003; Leahy, Muenzen, Saunders, & Strauser, 2009; Leahy, Szymanski, & Linkowski, 1993; Rubin et al., 1984). The results of this study differ somewhat in organizational structure from the current knowledge domain solution (Leahy et al., 2013) that CRCC

uses to guide the test specifications for the CRCE. These differences, however, are primarily related to a greater degree of parsimony achieved in the overall description and additional depth and range within each of the knowledge domains that were identified.

An analysis on the impact of employment settings on the perceived importance of knowledge domains was also performed. The results of this analysis provided additional evidence that the instruments performed as one would have anticipated in relation to clinical setting differences. The results, for the most part, are also very consistent with previous research (Leahy et al., 2003; Leahy et al., 2013; Leahy et al., 2009; Leahy et al., 1993) related to differences in relation to the practice setting of respondents. Although differences exist in importance level of a few knowledge domains (e.g., rehabilitation and mental health counseling and group and family counseling), there is significant agreement about the commonality of the knowledge domains across employment settings (e.g., case management, and medical and psychosocial aspects of chronic illness and disability), which further supports the use of these findings in setting the new test specifications.

One of the research questions asked whether CRCs with counselor licensure (LPC) varied in their perceptions of the relative importance of different rehabilitation counseling knowledge areas required for rehabilitation counseling practice compared with CRCs without counselor licensure. The analysis of the data for this question indicated that there was only one statistically significant difference in relation to knowledge importance (group and family counseling), indicating that these two subgroups are highly similar.

Over the years, empirical findings on the role, function, and knowledge requirements were systematically utilized by the CORE to assist in establishing their curriculum standards for academic program accreditation in rehabilitation counseling at the master's degree level. As indicated earlier in the article, with the merger of CORE and CACREP and the emergence of rehabilitation counseling among the specialty areas now accredited by CACREP, it is highly recommended that these studies continue to be used to provide empirically validated knowledge requirements in the specialty standards for rehabilitation counseling within CACREP accreditation process.

Mapping the Blueprint of the New CRCE Test Specifications From the Empirical Findings

The findings from the final version of the KVI-R that identified the knowledge domains and subdomains, along with individual knowledge areas were selected as the primary data to establish the new organizational structure, and map out the new blueprint, of test specifications for the CRCE. In terms of organizational schema, the CRCC Standards and Examination Committee (the Committee) and the research

team decided to use the new structure from the KVI-R for the knowledge domains. They also decided that the knowledge items would be organized under a combination of factors and subdomains (as was done in 2013) to increase the homogeneity of the individual knowledge areas included, and to improve the interpretability of the blueprint of test specifications.

For the most part, the original structure of the KVI-R findings reported earlier in this article was used in the design of the new CRCE test specifications. The Committee reviewed each of the factors from the study and decided to utilize a 12-domain structure of the specifications. In addition, during this part of the review, some of the knowledge domains were relabeled to better reflect domain content. The Committee also carefully examined each of the knowledge items within the 12 domains. Two items were subsequently eliminated from the blueprint as a result of low mean importance ratings and 13 items were added to the blueprint. These additional items were originally part of the KVI-R but did not load high enough ($<.35$) on any of the factors to be included in the final structure. These items were also rated relatively high in terms of importance ratings (>3.0), and the Committee felt they should be included in the blueprint. It should also be noted that four of these items were excluded during this part of the analysis as a result of redundancy of content. Finally, there were a number of knowledge items that were moved by Committee consensus to alternative domains within the structure to better reflect homogeneity of content within domains and improve interpretability of the blueprint. As part of this process, four additional items were removed from the specification due to the specificity of population and practice setting. It was also believed that the content of these more specific items was already reflected in the specifications. Once these changes were made, the research team and the Committee agreed that each of the knowledge domains and subdomain items attained a level of empirical importance sufficient to be included in the test specifications for future versions of the CRCE. See Table 7 for the final layout of the final test specifications, including the percentage of items selected for each examination in each knowledge domain. Finally, the Committee voted to approve these specifications for future examinations. The new test specifications were then presented to the CRCC Board that approved and adopted the new examination structure for implementation in October 2017.

Limitations

The findings from this study should be viewed and applied within the context of several limitations. Although random selection of participants strengthened the generalizability of these findings, only individuals who were currently credentialed by CRCC were selected for the sample, and no further

Table 7. Test Specification for the CRC Examination.

Test Specification

-
1. Professional orientation and ethical practice (9% of questions)
 - Risk management and professional ethical standards for rehabilitation counselors
 - Laws and public policy affecting individuals with disabilities
 - Ethical decision-making models and processes
 - Diversity and multicultural counseling issues
 - Rehabilitation terminology and concepts
 - Professional roles, functions, and relationships with other human service providers
 - Credentialing issues related to the rehabilitation counseling profession
 - Organizational structure of rehabilitation counseling practice settings (e.g., public, private-for-profit, and not-for-profit service delivery systems)
 - Historical and philosophical foundations of rehabilitation counseling
 2. Counseling theories, techniques, and evidence-based practice (16% of questions)
 - Clinical problem-solving and critical-thinking skills
 - Rehabilitation techniques for individuals with psychological disabilities
 - Individual counseling practices and interventions
 - Establishing and maintaining effective working alliances with the clients we serve
 - Individual counseling theories
 - Behavior and personality theory
 - Substance use and treatment
 - Counseling/training to help clients develop workplace socialization skills
 - Motivational interviewing
 - Treatment planning for clinical problems (e.g., depression and anxiety)
 - Human growth and development
 - Evidence-based psychosocial and vocational interventions in rehabilitation counseling practice
 - Evidence-based psychiatric rehabilitation practices
 - Evidence-based counseling/therapy for clients with PTSD
 - Evidence-based counseling/therapy for clients with alcohol and other drug use problems
 - Theories and techniques of clinical supervision
 - Evidence-based practice and research utilization
 3. Group and family counseling (3% of questions)
 - Family counseling practices and interventions
 - Family counseling theories
 - Group counseling practices and interventions
 - Group counseling theories
 4. Crisis and trauma counseling and interventions (4% of questions)
 - Assessment of client dangerousness and development of a safety plan
 - Effective rehabilitation counseling services for individuals with polytrauma injuries
 - Impact of crises, disasters, and other trauma-causing events on people with disabilities
 - Use of principles of crisis intervention for people with disabilities during crises, disasters, and other trauma-causing events
 - The emergency management system within rehabilitation agencies and in the community
 5. Medical and psychosocial aspects of chronic illness and disability (11% of questions)
 - The psychosocial and cultural impact of disability on the individual
 - Medical aspects and implications of various disabilities
 - Environmental and attitudinal barriers for individuals with disabilities
 - Medical terminology
 - Implications of medications as they apply to individuals with disabilities
 - The psychosocial and cultural impact of disability on the family
 - Individual and family adjustment to disability
 - Human sexuality and disability issues
 6. Assessment, occupational analysis, and service implementation (15% of questions)
 - Vocational implications of functional limitations associated with disabilities
 - The functional capacities of individuals with disabilities
 - Interpretation of assessment results for rehabilitation planning purposes
 - Occupational and labor market information
 - The tests and evaluation techniques available for assessing clients' needs
 - Ergonomics, job accommodations, and assistive technology
-

(continued)

Table 7. (continued)

Test Specification

-
- Transferable skills analysis
 - Job modification and restructuring techniques
 - Job analysis
 - Diagnostic and Statistical Manual of Mental Disorders* (5th ed., DSM-5; American Psychiatric Association, 2013)
 - Computer-based job matching systems
 - Methods and techniques used to conduct labor market surveys
 - 7. Career development and job placement (9% of questions)
 - Career development and job placement strategies
 - Job readiness including seeking and retention skills development
 - School-to-work transition for students with disabilities
 - Employer development for job placement
 - Supported employment strategies and services
 - Dual diagnosis and the workplace
 - Theories of career development and work adjustment
 - Work conditioning or work hardening resources and strategies
 - Individual Placement and Support (IPS) model—evidence-based supported employment
 - Social media as a networking tool
 - 8. Demand-side employer engagement (6% of questions)
 - Assisting employers with job accommodation issues for their employees with disabilities (e.g., assistive technology, workspace modifications)
 - Consultation process with employers related to management of disability issues in the workplace
 - Educating employers on disability-related issues (e.g., ADA, compliance, disability law)
 - Human resource practices, diversity in the workplace, and workplace supports for people with disabilities
 - Diversity training related to disability issues for employers
 - Demand-side employment issues related to hiring, return to work, and retention
 - Marketing strategies and techniques for rehabilitation services
 - 9. Community resources and partnerships (9% of questions)
 - The services available for a variety of rehabilitation populations, including persons with multiple disabilities
 - Community resources and services for rehabilitation planning
 - Social Security programs, benefits, work incentives, and disincentives
 - Financial resources for rehabilitation services
 - Programs and services for specialty populations (e.g., school-to-work transition, spinal cord injury, traumatic brain injury, mental health, developmental disability, substance abuse, corrections)
 - Independent living services
 - Financial literacy and benefits counseling and linkages to asset development resources
 - Services available through client advocacy programs (e.g., Client Assistance Program [CAP], legal aid)
 - Services available from one-stop career centers
 - Life-care planning and life-care planning services
 - 10. Case management (7% of questions)
 - The case management process, including case finding, planning, service coordination, referral to and utilization of other disciplines, and client advocacy
 - Case recording and documentation
 - Negotiation, mediation, and conflict resolution strategies
 - Principles of caseload management
 - Techniques for working effectively in teams and across disciplines
 - Advocacy processes needed to address institutional and social barriers that impede access, equity, and success for clients
 - Techniques for working with individuals with limited English proficiency
 - Principles, models, and documentation formats for biopsychosocial case conceptualization and treatment planning
 - 11. Health care and disability management (5% of questions)
 - Appropriate medical intervention resources
 - Health care benefits and delivery systems
 - Health promotion and wellness concepts and strategies for people with chronic illness and disability
 - Insurance programs (e.g., Medicare, Medicaid, group and individual, short- and long-term disability, personal injury no-fault liability)
 - Disability prevention and management strategies
 - Workers' compensation laws and practices
 - Managed care concepts
-

(continued)

Table 7. (continued)

Test Specification

12. Research, methodology, and performance management (6% of questions)

- Program evaluation procedures for assessing the effectiveness of rehabilitation services and outcomes
- Rehabilitation research literature related to evidence-based practice
- Effective management of rehabilitation services and programs, including areas such as administration, finance, benefit systems, and accountability
- Psychometric concepts related to measurement (e.g., reliability, validity, standard error of measurement)
- Strategic planning techniques and budget planning
- Research methods and statistics
- Systematic review, meta-analysis
- Research databases (e.g., Cochrane Collaboration, PsylINFO, MEDLINE)
- Concepts and principles of organizational development and stakeholder management

Note. ADA = Americans with Disabilities Act; CRC = certified rehabilitation counselor; PTSD = posttraumatic stress disorder.

information was available related to how effective these practitioners were in relation to practice other than certification/licensure status. In addition, about one third of the participants worked in state Vocational Rehabilitation (VR) agency settings and less than 10% worked for community-based rehabilitation organizations. The overrepresentation of state VR counselors may affect the generalizability of the results. Although the response rate would be viewed as generally acceptable in relation to these types of survey research applications, a limitation is nevertheless noted. Another classic limitation imposed by the research methods employed in this study relates to the reliance on self-report in assessing the importance of various knowledge domains associated with effective practice. Finally, another limitation of the study is noted in relation to the time between data collection and article preparation, which was the result of the time required to analyze the data, prepare a final report, and have the CRCC Standards and Examination Committee examine the findings to officially set and approve the new test specifications for the CRCC examination.

Conclusion

The results of this study provide empirical support for the description of the knowledge base underlying the professional practice of rehabilitation counseling, and contribute further empirical evidence in relation to the content and

construct validity of the knowledge domains identified in this replication and extension of the most recent study completed in 2012 (Leahy et al., 2013). The focus of this study was to identify and examine the major knowledge domains required for effective rehabilitation counseling practice to revise and update the test specifications for the CRCE. These findings can also be used to empirically validate the specialty standards for rehabilitation counseling within the current CACREP accreditation requirements.

Over the past 25 years, including the present study, there have been five, large-scale national research initiatives (Leahy et al., 2003; Leahy et al., 2013; Leahy et al., 2009; Leahy et al., 1993) that have identified and defined the specific competencies important to the professional practice of rehabilitation counseling and the achievement of positive outcomes with the consumers they serve. These last five national studies have sampled the same population of interest and used parallel definitions of variables, research questions, and research instruments. Each successive replication and extension of this line of inquiry has added to the evidence-based (DePalma, 2002) foundation of underlying knowledge dimensions essential for rehabilitation counseling practice. These studies and prior research have provided the discipline with consistent empirically based evidence of an established and mature discipline that is able to respond appropriately to the evolutionary demands and pressures of a dynamic human service field.

Appendix

Means, Standard Deviations of Top 10 Items.

Item number		M (SD)
23.	Vocational implications of functional limitations associated with disabilities	4.46 (0.78)
17.	The services available for a variety of rehabilitation populations, including persons with multiple disabilities	4.41 (0.79)
33.	The functional capacities of individuals with disabilities	4.41 (0.75)
27.	The psychosocial and cultural impact of disability on the individual	4.40 (0.74)
26.	Medical aspects and implications of various disabilities	4.39 (0.77)
59.	Clinical problem-solving and critical-thinking skills	4.35 (0.83)

(continued)

Appendix (continued)

Item number		M (SD)
18.	The case management process, including case finding, planning, service coordination, referral to and utilization of other disciplines, and client advocacy	4.34 (0.85)
5.	Risk management and professional ethical standards for rehabilitation counselors	4.34 (0.84)
16.	Environmental and attitudinal barriers for individuals with disabilities	4.31 (0.85)
50.	Rehabilitation techniques for individuals with psychological disabilities	4.27 (0.82)
20.	Community resources and services for rehabilitation planning	4.26 (0.83)

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