Vocational rehabilitation service delivery: Technical assistance needs of vocational rehabilitation professionals

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Abstract.
BACKGROUND: Americans with disabilities have historically faced substantial barriers to employment participation. The state-federal vocational rehabilitation (VR) program has played an important role in increasing the employment opportunities of Americans with disabilities through the provision of services and supports designed to lead to high-quality employment, independence, self-sufficiency, and full integration into the community.
OBJECTIVE: The Vocational Rehabilitation Technical Assistance Center for Quality Employment (VRTAC–QE) was designed to bring together the broad range of existing quality employment strategies and supporting practices, identify and implement new ones, and incorporate them into an integrated training and technical assistance plan, consistent with the circumstances and priorities of each State VR agency that requests technical assistance.
METHOD: In the present paper, we present the results of a needs assessment survey conducted among State VR rehabilitation counselors and professionals in cooperating rehabilitation agencies and services.
RESULTS: The purpose of the present study was to determine technical assistance and training needs of State VR counselors in four practice domains: (a) outreach services, (b) pre-employment transition services, (c) vocational rehabilitation services, and (d) employment services.
CONCLUSION: Implications and future directions are also discussed.

Keywords: Disability, vocational rehabilitation, employment, service delivery

1. Introduction

Americans with disabilities have historically faced substantial barriers to employment participation. The consequences of this historic reality are significant and lasting. Participation in employment is a fundamental human right, associated with financial,

psychological, social, and health benefits (Chan et al., 2020; Dean et al., 2018; Reichard et al., 2019; Repke & Ipsen, 2020). Work provides opportunities for community participation, access to independence, health care, income, social connection, and engagement in meaningful and productive activity (National Institute on Disability, Independent Living, and Rehabilitation Research [NIDILRR], 2018). Conversely, the unemployment, income inequality, and poverty, for which persons with disabilities remain at significantly increased risk, are associated

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with poor physical and mental health, reduced access to health care, stigma, social isolation, psychological distress, and lower levels of self-esteem and life satisfaction (Chan et al., 2020).

Despite the implementation of such consequential civil rights and employment legislation as the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, the Olmstead Decision in 1999, and the Americans with Disabilities Amendments Act (ADAA) of 2008, over the course of the past four decades the employment, earnings, and economic well-being of persons with disabilities have declined (Maroto & Pettiniccio, 2015). This pattern has been maintained even through periods of broad economic expansion (Houtenville & Adler, 2001; Maroto & Pettiniccio, 2015). Indeed, in the recent decade of economic growth between the Great Recession (2007-2009) and the Fall of 2019, approximately 80% of Americans with disabilities remained outside the labor force, compared with 30% of people without a disability (U.S. Department of Labor [USDOL], 2019a, b; Houtenville & Boege, 2019). The multifactorial and compounding nature of the employment barriers faced by persons with disabilities (PWD) are reflected, though not fully represented, in U.S. Bureau of Labor Statistics data from July 2019, which suggested that 47.5% of PWD age 16 + who were not employed reported at least one barrier to employment including: lack of education or training (14.3%), lack of transportation (12.1%), the need for special features at the job (12.5%), employer or coworker attitudes (9.1%), lack of job counseling (6.4%), loss of government assistance (5.3%), and effects of a person's own disability (81.6%; Bureau of Labor Statistics, 2020). Persons with the most significant disabilities, youth with disabilities, and traditionally underserved populations face the greatest barriers to employment.

For over a century, the state-federal vocational rehabilitation (VR) program has played an important role in increasing the employment opportunities of Americans with disabilities through the provision of a range of services and supports designed to lead to high-quality employment, independence, self-sufficiency, and full integration into community life (Rehabilitation Services Administration [RSA], 2020). With an annual budget of over $3 billion, the program provides employment services to more than one million individuals each year. These VR services include career counseling, work-based learning experiences, financial support for vocational training and postsecondary education, rehabilitation

technology and training, post-secondary transition and pre-employment transition services, supported employment services, transportation, and other services and supports (RSA, 2020). Currently authorized by Title I of the 1973 Rehabilitation Act, as amended in 2014 by Title IV of WIOA (29 U.S.C. §720 et seq.) and administered by 78 VR agencies in the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands, the VR program is an integral part of the broader national workforce development system (RSA, 2020).

As emphasized in WIOA, addressing the chronic and persistent unemployment and underemployment of Americans with disabilities requires effective and innovative employment and rehabilitation practices. Policy and budgetary priorities in WIOA, and the attendant amendments to the Rehabilitation Act, reflect shifting and increased emphasis on services and practices that prioritize employer engagement, customized training, postsecondary education, pre-employment transition services, youth with disabilities, interagency collaboration, and accountability. Although the state-federal VR program is recognized as a highly successful and effective employment program in terms of multiple metrics, including employment rate of participants, return on investment, efficiency, and consumer satisfaction (Chan et al., 2017; Pruett et al., 2008; RSA, 2020; Tansey et al., 2008), the goal of reducing the chronic unemployment and underemployment of Americans with disabilities remains a fluid, complex, and persistent challenge. In order to maintain and improve its effectiveness, it is necessary that the program foresees and adapts to changes in the labor market and employer needs, effectively outreaches to and serves an increasingly diverse population, and that VR counselors continue to learn and develop skills in new or updated employment and rehabilitation approaches and interventions.

In response to the rapidly evolving nature of employment structures, needs, and processes, the Rehabilitation Act of 1973, as amended by WIOA provides for the RSA to make grants to provide State VR agency personnel with training and technical assistance (TA) designed to increase the skills of rehabilitation counselors and other qualified personnel engaged in providing vocational, medical, social, and psychological rehabilitation services to individuals with disabilities. The VR Technical Assistance Center on Quality Employment (VRTAC-QE) and

the VRTAC on Quality Management (VRTAC-QM) are two such projects. These TAC Centers have been developed to increase the number and quality of employment outcomes for individuals with disabilities through training and TA to State VR agency personnel. The VRTAC–QM assists VR agency personnel to manage available resources better and improve service delivery, and the VRTAC–QE supports State VR agency personnel in implementing innovative and effective employment strategies and supporting practices (U.S. Department of Education [USDOE], 2020).

The VRTAC–QE was designed to bring together the broad range of existing quality employment strategies and supporting practices, identify and implement new ones, and incorporate them into an integrated training and technical assistance plan, consistent with the circumstances and priorities of each State that requests technical assistance. In order to effectively identify and prioritize training and TA needs, it is necessary to consider the relevant issues from multiple stakeholder perspectives, including that of the VR counselors and other personnel, consumers and potential consumers and their families, employers, cooperating rehabilitation professionals, relevant state and federal agencies, and others. In the present paper, we describe one of several efforts aimed at gaining such perspectives. Specifically, we present the results of a needs assessment survey conducted among State VR rehabilitation counselors and professionals in cooperating rehabilitation agencies and services. The purpose of the present study was to determine technical assistance and training needs of State VR counselors in four practice domains: (a) outreach services, (b) pre-employment transition services, (c) vocational rehabilitation services, and (d) employment services. The results of this study represent one component in the development and delivery of VRTAC-QE and VRTAC-QM TA and training, and, more broadly, provide important information on the needs of State VR in responding to the needs of consumers in achieving competitive integrated employment.

2. Method

2.1. Participants

Participants in this study included 229 VR professionals recruited from State VR general agencies ($n = 149$), blind agencies ($n = 29$), combined agencies

($n = 48$), and American Indian VR services ($n = 3$). Due to the focus of the survey, limited demographic information was collected from the participants. Sixty-nine participants (41.1%) identified as living in suburban areas, 57 participants (33.9%) in rural areas, and 42 participants (25%) in urban areas. More than half of the participants ($n = 138$, 60.3%) reported holding the CRC credential.

2.2. Measures

2.2.1. Technical assistance needs of vocational rehabilitation professionals

The VRTAC-QE Needs Assessment was developed to assess technical assistance needs of State VR professionals. The questionnaire was composed of 69 items addressing four technical assistance and training (TAT) need domains: (1) outreach services (24 items), (2) pre-employment services (5 items), (3) VR services (23 items), and (4) employment services (17 items). For each item, or specific area of TAT, participants were asked to make two ratings. First, they rated the importance of each item to the success of State VR agencies in helping individuals with disabilities to become or remain in competitive integrated employment on a five-point Likert-type scale (1=*"Not important"*, 2=*"Somewhat important"*, 3=*"Neutral"*, 4=*"Important"*, 5=*"Very important"*). Participants then rated the level of need for State VR to increase capacity on the item's focus in order to assist consumers to achieve quality employment outcomes, again based on a five-point Likert-type scale (1=*"None, no need for TAT"*, 2=*"A little need for TAT"*, 3=*"Some need for TAT"*, 4=*"Moderate need for TAT"*, and 5=*"High need for TAT"*).

Items in each TAT domain were scored using the following steps: (1) sum the importance score of each TAT item to yield a *total TAT importance score* (e.g., in the outreach domain; scores ranged from 24 to 120); (2) divide the importance score for each TAT item by the *total TAT importance score* to obtain the *relative TAT importance score* for each item; (3) multiply the *relative TAT importance score* with the *TAT need score*, yielding a *weighted TAT need score* for each item; and (4) sum each of the *weighted TAT need scores* to yield a *total TAT need score* that ranged from 1 to 5, with higher scores indicating higher levels of TAT needs taking into account of perceived importance.

2.3. Procedures

The VRTAC-QE Needs Assessment was developed using a modified Delphi process. First, an initial draft of the questionnaire was developed based on the results of a recent national needs assessment, conducted by the VRTAC-Targeted Communities (VRTAC-TC) in 2016. In that assessment, 47 State VR agencies participated, with participants identifying TA needs in multiple areas. Next, the VRTAC-QE conducted a comprehensive review of VR policies, practices, services, and potential barriers as well as best practices from the available literature based on over 20 scoping reviews conducted by Rehabilitation Research and Training Centers and other TAC Centers between 2015 and 2020. These reviews provided a framework for supplementing the initial draft of the questionnaire in areas such as employer practices in recruitment and hiring, employment of individuals with various disabilities, and demographic factors. Once a draft of the questionnaire had been completed, the VRTAC-QE reached out to a national group of experts and stakeholders to build consensus regarding the items on current needs and emerging opportunities related to increasing quality employment outcomes. Participants included 18 professionals who were invited to review and express agreement or disagreement with the importance and relevance of specific items and, through the iterative Delphi process, achieve broad consensus is reached on their final composition. Among the participants were affiliates of SVRAs ($n = 7$; includes community rehabilitation providers, national organizations for community providers, professional organizations; and SVRA professional organizations), faculty of rehabilitation counseling programs ($n = 6$), leadership of state vocational rehabilitation agencies (SVRA; $n = 3$), persons with disabilities ($n = 3$), technical assistance providers ($n = 3$), and employers ($n = 2$). Participants were asked to rate the initial survey items in terms of importance to the field of rehabilitation counseling using a Likert-type scale ($1 = $ Not important to $5 = $ Very important) and if the item should be kept, modified, or deleted. Ratings were aggregated and presented to the participants for discussion regarding the initial findings and to provide direction to the subsequent version of the survey. Modifications were made based on participant feedback and then participants were asked to conduct a similar rating to the second version of the survey. The ratings from the second version were presented to the participants and the ratings and comments from the follow up meeting were used to develop the final version of the VRTAC-QE Needs Assessment.

The questionnaire was hosted at the University of Wisconsin-Madison, using the Qualtrics Survey Hosting Service (2020; Qualtrics, Provo, UT) for distribution. The recruitment process for the present survey involved several stages. First, in cooperation with the VRTAC-QM and the National Technical Assistance Center on Transition: The Collaborative (NTACT:C), VRTAC-QE completed a comprehensive national needs assessment survey among State VR Agencies. This survey was distributed between December 2020 and January 2021 in collaboration with the Council of State Administrators of Vocational Rehabilitation (CSAVR), which distributed information about the survey to each of the State Vocational Rehabilitation Agencies. This initial recruitment approach resulted in 85 participants completing questionnaire. VRTAC-QE then recruited additional participants through several additional distributions of the survey to multiple disability, professional, advocacy, and employer groups. These included distribution to a random sample of 2,000 Certified Rehabilitation Counselors and announcements of the survey through emails, listservs, social media, and website postings with cooperation from the Association of People Supporting Employment First, the Association of University Centers on Disabilities (AUCD), Social Security Administration Ticket to Work Employer Networks, and other consumer and disability advocacy groups. Through these subsequent recruitment efforts, completed between February and May, 2021, VRAC-QE received completed surveys from a total of 229 SVRA professionals, including directors, staff, and VR counselors. An additional 92 personnel who worked in community-based rehabilitation agencies and provided support services for VR also completed the survey and their responses are discussed below in the context of comparing the relative importance ratings of the two groups. Participants were offered a 1-hour CRCC CEU for reviewing a journal article on promising and evidence-based practices in vocational rehabilitation (Leahy et al., 2017) and completing the survey.

2.4. Data analysis

Descriptive statistics and correlational analyses were computed using the IBM SPSS Statistics (Version 27). Missing values were estimated using the simple imputation method provided by SPSS.

3. Results

3.1. Outreach services

Table 1 presents the descriptive statistics for the TAT importance scores, the relative TAT importance scores, the TAT needs scores, the weighted TAT needs scores for each outreach area, and the ranking of the weighted TAT needs scores.

Of the 24 items in the outreach services domain, the top five groups with high weighted TAT need scores were ranked as: (1) "Outreach to youth with disabilities in foster care," (2) "Outreach to residents of rural and remote communities," (3) "Outreach to youth with disabilities," (4) "Outreach to African American communities," and (5) "Outreach to Hispanic/Latin(x) communities." Conversely, "Outreach to persons with cases closed by VR", and "Outreach to banks or financial institutions" were rated as low importance and low TAT needs. The total weighted needs score for outreach services was computed to

be 3.54 (SD = .765; range from 1 to 5), indicating that VR professionals in this study rated their TAT needs for outreach services at between some need and moderate-need levels.

3.2. Pre-employment transition services (Pre-ETS)

Table 2 presents the descriptive statistics for the TAT importance scores, the relative TAT importance scores, the TAT needs scores, the weighted TAT needs scores for each Pre-ETS service, and the ranking of the weighted TAT needs scores.

The rankings of the weighted TAT need scores of the five TAT in Pre-ETS are: (1) "Work-based learning experiences," (2) "Self-advocacy," (3) "Workplace readiness training," (4) "Job exploration counseling," and (5) "Counseling on opportunities for enrollment in transition or post-secondary programs." The total weighted needs score for pre-employment services TAT was computed to be 3.71 (SD = .95;

Table 1
Outreach services technical assistance and training needs (N = 229)

	Importance M (SD)	Relative importance M (SD)	TAT needs M (SD)	Weighted TAT needs M (SD)	Rank
1. Youth with disabilities in foster care	4.46 (0.819)	.05 (.008)	4.04 (1.152)	.189 (.067)	1
2. Residents of rural and remote communities	4.42 (0.783)	.05 (.007)	3.92 (1.072)	.181 (.06)	2
3. Youth with disabilities	4.55 (0.684)	.05 (.007)	3.75 (1.122)	.178 (.061)	3
4. African American communities	4.44 (0.806)	.05 (.008)	3.75 (1.213)	.175 (.067)	4
5. Hispanic/Latin communities	4.42 (0.804)	.05 (.007)	3.76 (1.208)	.174 (.065)	5
6. Persons involved in the criminal justice system	4.27 (0.885)	.04 (.007)	3.82 (1.151)	.172 (.066)	6
7. Native American communities	4.25 (0.978)	.04 (.009)	3.73 (1.250)	.168 (.071)	7
8. High school services (e.g., special educators; guidance counselors)	4.49 (0.77)	.05 (.008)	3.57 (1.192)	.168 (.067)	8
9. Immigrants	4.07 (0.982)	.04 (.009)	3.69 (1.227)	.16 (.07)	9
10. Veterans	4.29 (0.780)	.04 (.007)	3.57 (1.084)	.159 (.058)	10
11. Asian American communities	4.17 (0.929)	.04 (.008)	3.6 (1.122)	.158 (.064)	11
12. Social services agencies (e.g., mental health, intellectual and developmental disabilities)	4.42 (0.711)	.05 (.007)	3.46 (1.188)	.158 (.06)	12
13. SSI and SSDI recipients	4.34 (0.808)	.04 (.007)	3.43 (1.229)	.154 (.063)	13
14. Persons experiencing chronic health conditions/ individuals with disabilities receiving TANF or SNAP	4.10 (0.808)	.04 (.007)	3.49 (1.126)	.15 (.059)	14
15. State education agencies	4.14 (0.889)	.04 (.008)	3.24 (1.159)	.141 (.061)	15
16. Centers for Independent Living (CILs)	4.07 (0.990)	.04 (.009)	3.28 (1.182)	.14 (.064)	16
17. COVID-19 survivors	3.73 (1.073)	.04 (.009)	3.4 (1.32)	.137 (.072)	17
18. College or University Disability Resource Centers	4.08 (0.900)	.04 (.008)	3.16 (1.157)	.137 (.063)	18
19. Veterans administration	3.89 (0.884)	.04 (.007)	3.20 (1.110)	.131 (.057)	19
20. Group or residential programs	3.69 (1.038)	.04 (.009)	3.20 (1.182)	.126 (.065)	20
21. State health agencies	3.80 (0.981)	.04 (.008)	3.06 (1.205)	.123 (.061)	21
22. State/local Chamber of Commerce	3.44 (1.144)	.04 (.012)	2.74 (1.236)	.103 (.062)	22
23. Persons with cases closed by VR (e.g., former service recipients)	3.30 (1.113)	.03 (.011)	2.69 (1.189)	.099 (.065)	23
24. Banks or financial institutions	2.61 (1.081)	.03 (.010)	2.22 (1.107)	.065 (.048)	24
Total TAT needs				3.54 (.765)	

Table 2
Pre-transition employment services technical assistance and training needs (N = 229)

	Importance M (SD)	Relative importance M (SD)	TAT needs M (SD)	Weighted TAT needs M (SD)	Rank
1. Work-based learning experiences	4.69 (0.645)	.21 (.026)	3.79 (1.107)	.780 (.250)	1
2. Self-advocacy	4.59 (0.692)	.20 (.028)	3.69 (1.142)	.745 (.260)	2
3. Workplace readiness training	4.58 (0.706)	.20 (.024)	3.69 (1.142)	.744 (.261)	3
4. Job exploration counseling	4.60 (0.728)	.20 (.025)	3.66 (1.162)	.739 (.259)	4
5. Counseling on opportunities for enrollment in transition or post-secondary programs	4.45 (0.721)	.19 (.026)	3.57 (1.108)	.702 (.254)	5
Total TAT needs				3.71 (.950)	

Table 3
Vocational rehabilitation services technical assistance and training needs (N = 229)

	Importance M (SD)	Relative importance M (SD)	TAT needs M (SD)	Weighted TAT needs M (SD)	Rank
1. Customized training in high demand occupations	4.43 (0.761)	.05 (.007)	4.05 (1.077)	.186 (.060)	1
2. Distance or remote rehabilitation counseling services	4.41 (0.760)	.05 (.008)	3.99 (1.134)	.184 (.068)	2
3. Work-based learning experiences	4.64 (0.658)	.05 (.007)	3.77 (1.107)	.181 (.062)	3
4. Apprenticeships/pre-apprenticeships	4.40 (0.835)	.04 (.008)	3.94 (1.023)	.180 (.062)	4
5. Maintaining continuity of services during natural or human-caused disasters	4.29 (0.914)	.04 (.008)	3.84 (1.194)	.173 (.069)	5
6. Preparation for transition to competitive integrated employment	4.56 (0.735)	.05 (.007)	3.66 (1.185)	.172 (.064)	6
7. Internships	4.40 (0.791)	.04 (.007)	3.79 (1.155)	.172 (.062)	7
8. Family involvement and supports	4.41 (0.742)	.05 (.007)	3.63 (1.167)	.166 (.064)	8
9. Career counseling/development	4.52 (0.680)	.05 (.007)	3.57 (1.135)	.166 (.060)	9
10. Assistive technology	4.43 (0.688)	.05 (.007)	3.59 (1.178)	.164 (.063)	10
11. Interventions to increase self-determination or self-advocacy	4.31 (0.835)	.04 (.007)	3.65 (1.132)	.163 (.061)	11
12. Services to increase career pathways in science, technology, engineering, or math (STEM) fields	4.16 (0.862)	.04 (.008)	3.76 (1.096)	.163 (.060)	12
13. Work incentive benefits counseling	4.56 (0.664)	.05 (.007)	3.42 (1.287)	.161 (.068)	13
14. Preparation for transition to post-secondary education	4.34 (0.775)	.04 (.007)	3.52 (1.137)	.158 (.061)	14
15. Community collaborations and coordination	4.28 (0.833)	.04 (.007)	3.39 (1.219)	.150 (.064)	15
16. Motivational interviewing	4.15 (0.913)	.04 (.009)	3.42 (1.227)	.149 (.067)	16
17. Financial literacy	4.16 (0.919)	.04 (.008)	3.45 (1.118)	.149 (.061)	17
18. Post-secondary education support services	4.21 (0.765)	.04 (.006)	3.38 (1.143)	.147 (.058)	18
19. Local labor market analysis	4.16 (0.871)	.04 (.008)	3.38 (1.206)	.146 (.064)	19
20. School-based preparatory experiences	4.09 (0.942)	.04 (.008)	3.33 (1.189)	.143 (.065)	20
21. Achieving a Better Life Experience (ABLE) accounts	3.70 (1.005)	.04 (.009)	3.12 (1.261)	.123 (.065)	21
22. Youth development and leadership (e.g., Youth Leadership Forum)	3.80 (0.978)	.04 (.008)	3.06 (1.173)	.122 (.059)	22
23. Health literacy or health promotion	3.71 (1.068)	.04 (.009)	3.05 (1.158)	.120 (.062)	23
Total TAT needs				3.28 (0.725)	

range from 1 to 5), indicating that VR professionals in this study rated their TAT needs for pre-employment services at the moderate-need level.

3.3. VR services

Table 3 presents the descriptive statistics for the TAT importance scores, the relative TAT importance scores, the TAT needs scores, the weighted TAT needs scores for each of 23 VR services, and the ranking of the weighted TAT needs scores.

Of the 23 practices in the VR services domain, the top five practices with high weighted TAT need scores were ranked as: (1) "Customized training in high demand occupations," (2) "Distance or remote rehabilitation counseling services," (3) "Work-based

Table 4
Employment services technical assistance and training needs (N = 229)

	Importance M (SD)	Relative importance M (SD)	TAT needs M (SD)	Weighted TAT needs M (SD)	Rank
1. Business outreach (making business contacts to market VR services)	4.58 (0.655)	.06 (.008)	3.77 (1.193)	.237 (.085)	1
2. Job accommodations (i.e., modifications to the workplace)	4.52 (0.582)	.06 (.008)	3.66 (1.200)	.227 (.083)	2
3. Business engagement (services or activities to support business needs)	4.38 (0.790)	.06 (.010)	3.71 (1.167)	.225 (.084)	3
4. Supported employment	4.59 (0.650)	.06 (.009)	3.57 (1.184)	.224 (.082)	4
5. Dual-customer approaches (both businesses and consumers with disabilities are customers)	4.34 (0.834)	.06 (.010)	3.66 (1.212)	.22 (.086)	5
6. Competitive employment	4.74 (0.563)	.06 (.009)	3.38 (1.337)	.218 (.088)	6
7. On-the-job training	4.40 (0.746)	.06 (.009)	3.55 (1.172)	.215 (.083)	7
8. Disability inclusion policies, procedures, or practices	4.39 (0.763)	.06 (.008)	3.55 (1.183)	.215 (.083)	8
9. Customized employment	4.13 (0.987)	.06 (.012)	3.69 (1.149)	.212 (.087)	9
10. Discrimination or disability rights legislation	4.35 (0.823)	.06 (.009)	3.51 (1.279)	.211 (.089)	10
11. Employer diversity policies	4.26 (0.867)	.06 (.009)	3.57 (1.180)	.21 (.083)	11
12. Job coaching	4.53 (0.662)	.06 (.010)	3.37 (1.268)	.209 (.087)	12
13. Disability inclusion training workshops	4.22 (0.869)	.06 (.009)	3.45 (1.236)	.201 (.085)	13
14. Self-employment	3.73 (1.083)	.05 (.015)	3.74 (1.211)	.199 (.098)	14
15. Employer workplace climate	4.23 (0.867)	.06 (.011)	3.41 (1.219)	.199 (.085)	15
16. Employee supports (e.g., EAP, disability leave, etc.)	4.15 (0.877)	.06 (.010)	3.32 (1.189)	.191 (.083)	16
17. Reducing the use of subminimum wage employment (Section 511)	4.06 (1.147)	.05 (.014)	3.06 (1.426)	.176 (.100)	17
Total TAT needs				3.58 (.847)	

learning experiences," (4) "Apprenticeships/pre-apprenticeships," and (5) "Maintaining continuity of services during natural or human-caused disasters." Conversely, "Health literacy or health promotion" and "Youth development and leadership (e.g., Youth Leadership Forum)" were rated as relatively low importance and low TAT needs. The total weighted needs score for VR services was computed to be 3.28 (SD = .725; range from 1 to 5), indicating that VR professionals in this study rated their TAT needs for VR services at the some-needs levels.

3.4. Employment services

Table 4 presents the descriptive statistics for the TAT importance scores, the relative TAT importance scores, the TAT needs scores, the weighted TAT needs each VR services, and the ranking of the weighted TAT needs scores.

Of the 17 practices in the employment services domain, the top five practices with high weighted TAT need scores were ranked as: (1) "Business outreach (making business contacts to market VR services)," (2) "Job accommodations (i.e., modifications to the workplace)," (3) "Business engagement (services or activities to support business needs)," (4)

"Supported employment," and (5) "Dual-customer approaches (both businesses and consumers with disabilities are customers)." Conversely, "Reducing the use of subminimum wage employment (Section 511)" and "Employee supports (e.g., EAP, disability leave, etc.)" were rated of relatively low importance and low TAT needs. The total weighted needs score for employment services was computed to be 3.58 (SD = .847; range from 1 to 5), indicating that VR professionals in this study rated their TAT needs for employment services at between some needs to moderate needs levels.

3.5. Comparison between state VR and VR affiliate group

Although the purpose of this study was to identify the perspectives of SVRA personnel, we also surveyed personnel who work in community-based rehabilitation agencies that provide support services for VR (n = 92) and completed the analyses above for this group in order to compare the groups' perspectives on the relative need for the TAT items and domains. The results are provided in Table 5.

For outreach services, both state VR agencies personnel and VR affiliate agencies personnel rated

Table 5
Comparative technical assistance and training needs rankings

	VR group rank (N = 229)	VR affiliates rank (N = 92)
Outreach services		
1. Youth with disabilities in foster care	1	1
2. Residents of rural and remote communities	2	4
3. Youth with disabilities	3	2
4. African American communities	4	6
5. Hispanic/Latin communities	5	5
6. Persons involved in the criminal justice system	6	3
7. Native American communities	7	8
8. High school services (e.g., special educators; guidance counselors)	8	7
9. Immigrants	9	10
10. Veterans	10	12
11. Asian American communities	11	11
12. Social services agencies (e.g., mental health, intellectual and developmental disabilities)	12	9
13. SSI and SSDI recipients	13	13
14. Persons experiencing chronic health conditions/individuals with disabilities receiving TANF or SNAP	14	15
15. State education agencies	15	18
16. Centers for Independent Living (CILs)	16	14
17. COVID-19 survivors	17	21
18. College or University Disability Resource Centers	18	19
19. Veterans administration	19	17
20. Group or residential programs	20	16
21. State health agencies	21	20
22. State/local Chamber of Commerce	22	23
23. Persons with cases closed by VR (e.g., former service recipients)	23	22
24. Banks or financial institutions	24	24
Pre-transition employment services		
1. Work-based learning experiences	1	1
2. Self-advocacy	2	3
3. Workplace readiness training	3	2
4. Job exploration counseling	4	3
5. Counseling on opportunities for enrollment in transition or post-secondary programs	5	5
Vocational rehabilitation services		
1. Customized training in high demand occupations	1	3
2. Distance or remote rehabilitation counseling services	2	7
3. Work-based learning experiences	3	2
4. Apprenticeships/pre-apprenticeships	4	14
5. Maintaining continuity of services during natural or human-caused disasters	5	5
6. Preparation for transition to competitive integrated employment	6	1
7. Internships	7	12
8. Family involvement and supports	8	4
9. Career counseling/development	9	8
10. Assistive technology	10	6
11. Interventions to increase self-determination or self-advocacy	11	13
12. Services to increase career pathways in science, technology, engineering, or math (STEM) fields	12	16
13. Work incentive benefits counseling	13	9
14. Preparation for transition to post-secondary education	14	15
15. Community collaborations and coordination	15	10
16. Motivational interviewing	16	17
17. Financial literacy	17	11
18. Post-secondary education support services	18	20
19. Local labor market analysis	19	23
20. School-based preparatory experiences	20	18
21. Achieving a Better Life Experience (ABLE) accounts	21	19
22. Youth development and leadership (e.g., Youth Leadership Forum)	22	21
23. Health literacy or health promotion	23	22
Employment services		
1. Business outreach (making business contacts to market VR services)	1	11
2. Job accommodations (i.e., modifications to the workplace)	2	1
3. Business engagement (services or activities to support business needs)	3	10

(*Continued*)

Table 5
(*Continued*)

	VR group rank ($N = 229$)	VR affiliates rank ($N = 92$)
4. Supported employment	4	8
5. Dual-customer approaches (both businesses and consumers with disabilities are customers)	5	12
6. Competitive employment	6	3
7. On-the-job training	7	7
8. Disability inclusion policies, procedures, or practices	8	6
9. Customized employment	9	13
10. Discrimination or disability rights legislation	10	4
11. Employer diversity policies	11	9
12. Job coaching	12	5
13. Disability inclusion training workshops	13	2
14. Self-employment	14	17
15. Employer workplace climate	15	15
16. Employee supports (e.g., EAP, disability leave, etc.)	16	14
17. Reducing the use of subminimum wage employment (Section 511)	17	16

"Youth with disabilities in foster care," "Residents of rural and remote communities," "Youth with disabilities," "African American communities," and "Hispanic/Latin(x) communities" as the groups to which outreach and TAT to increase capacity to assist consumers to achieve quality employment outcomes were highly needed. Both groups rated outreach to "Banks or financial institutions," "State/local Chamber of Commerce," "Persons with cases closed by VR (e.g., former service recipients)," and "State health agencies" as having relatively lower need for TAT. Interestingly, State VR agency personnel rated the need for TAT on outreach to "COVID-19 survivors" somewhat higher than did VR affiliate personnel (ranking #17 for the SVRA group vs #21 for the VR affiliates group). On the other hand, the VR affiliates group rated TAT on outreach to "group or residential programs" as greater (#20 for the SVRA agencies group) than did the VR affiliates group (#16 for VR affiliates group).

For Pre-ETS services, personnel in both the SVRA group and the VR affiliates group rated needs for TAT similarly, with "Work-based learning experiences" being the highest and "Counseling on opportunities for enrollment in transition or post-secondary programs" being the lowest.

For VR services, personnel in both the SVRA group and VR affiliates group rated the need for "Customized training in high demand occupations," "Work-based learning experiences," and "Maintaining continuity of services during natural or human-caused disasters" as being high. On the other hand, personnel in both the SVRA group and VR affiliates group rated the need for TAT on "Health Literacy or Health Promo-

tion," "Youth Development and Leadership (e.g., Youth Leadership Forum)," and "Achieving a Better Life Experience (ABLE) accounts" as relatively lower. The SVRA group rated the need for TAT on "Apprenticeships/Pre-apprenticeships" and "Distance or remote rehabilitation counseling services," higher (#4 and #2, respectively), than the VR affiliate group (#14 and #7, respectively). On the other hand, the VR affiliates group rated TAT on "preparation for transition to competitive integrated employment" as most needed (#1), while the SVRA group rated this TAT as being of relatively lower need (#6).

With respect to employment services, personnel in both the SVRA group and the VR affiliates group rated the need for TAT on "Job accommodations (i.e., modifications to the workplace)" higher, and on "Employer workplace climate," "Employee supports (e.g., EAP, disability leave, etc.)," and "Reducing the use of subminimum wage employment (Section 511)" relatively lower. There was a significant difference in the ratings between groups with respect to several TAT items. For example, the SVRA group rated the "Business outreach (making business contacts to market VR services)" as being of the greatest need, while the VR affiliates group rated this TAT relatively lower (#11). Moreover, the need for TAT on "Business engagement (services or activities to support business needs)" was ranked #3 by the SVRA group, and #10 by VR affiliates group. "Dual-customer approaches (both businesses and consumers with disabilities are customers)" was ranked #5 by the SVRA group, while it was ranked #12 by the VR affiliates group. Another large difference was found in the ratings of the need for "Disability inclusion training workshops", ranked #2 by the VR affiliates group,

and #13 by the SVRA group. The need for TAT on "Discrimination or disability rights legislation" and "Job coaching" was ranked relatively high by the VR affiliates group (#4 and #5 respectively), and lower by the SVRA group (#10 and #12 respectively).

4. Discussion

The purpose of this study was to determine and prioritize the TAT needs of state VR counselors in four practice domains: (a) outreach services, (b) pre-employment transition services, (c) vocational rehabilitation services, and (d) employment services. In this section we discuss the results with respect to each of these practice domains. The results provide important information about both the perceived importance of, and need for, training and technical assistance on a wide variety of services and supports among SVRA rehabilitation counselors.

4.1. Outreach services

In terms of outreach services, technical assistance, and training needs, several points are of note. First, the large number of items ranked as highly important suggests that the participants recognize the importance of expanded outreach generally. Second, and more specifically, the results reflect awareness of the importance of more effective community outreach strategies to expand the pool of potential VR applicants and referral sources among traditionally underserved populations. Individuals from historically underserved and marginalized demographic groups experience multiple barriers to VR participation related to a number of factors, including environmental stressors, poverty, lack of access, and the traditional design of public programs for traditional consumers (Anderson et al., 2021; Iceland, 2013; Nord et al., 2014). Structural inequities in VR outreach and service to underserved groups race, disability, and poverty have only recently begun to receive research attention (Anderson et al., 2021) yet, as noted by Sevak et al. (2018), consumers of VR services are increasingly diverse and heterogeneous in terms of their cultural and ethnic background, education, skills, and other personal characteristics, and face increasingly complex barriers to employment (Sevak et al., 2018). Awareness of this reality is reflected in the SVRA participants' prioritizing of outreach to African American, Hispanic/Latin, Native American, and Asian American communities, and immigrants.

Third, the WIOA amendments to the Rehabilitation Act emphasized the provision of services to students and youth with disabilities, thus expanding the population of students with disabilities who may receive VR services and the number of services that the VR agencies provide to youth and students with disabilities transitioning to postsecondary education and employment (USDOE, 2020). The results reflect this increased emphasis on outreach to youth with disabilities, with three of the ten highest ranked items, in terms of item importance, addressing youth with disabilities or those working with high school students. The identified need for TAT with these groups was also relatively high.

The importance of effective outreach to residents of rural and remote communities was also as an area of high importance and high need for TAT, as was the case for military veterans, and those involved in the criminal justice system. Effective outreach to COVID-19 survivors was also identified as relatively important and an area in the SVRA personnel identified a moderate need for TAT. The need for TAT on effective outreach to this group has unfortunately continued to grow since the completion of the survey.

4.2. Pre-transition employment services

As indicated in the results section, the rankings for each of the five items addressing Pre-ETS reflected the high importance of TAT related to youth with disabilities and post-secondary transition. This is consistent with the increased emphasis and funding reflected in WIOA. There was relatively little differentiation between the importance ratings. The need for continued TAT related to Pre-ETS was moderate. This suggests an ongoing need for the highly important and relatively new related legislative emphasis and policy changes, but likely also the fact that a transition-focused TAC, the National Technical Assistance Center on Transition (NTACT) was funded by the Office of Special Education Programs (OSERS) and RSA in 2015 and has been providing technical assistance to State Educational Agencies (SEAs), Local Educational Agencies (LEAs), SVRAs, and VR service providers for several years, and now the National Technical Assistance Center on Transition: The Collaborative (NTACT:C) continues to provide TAT on transition to post-secondary education and employment. The consistency in ratings terms of the importance of the items was consistent for personnel in both the SVRA group and the VR affiliates group, and in both groups the relative importance of transition-related TAT was confirmed.

4.3. Vocational rehabilitation services

Of the 23-items addressing VR services, the items with the highest weighted ranking include several that reflect VR's increased emphasis on the dual-customer approach, in which VR services are designed to lead to competitive integrated employment outcomes for VR consumers, while also meeting the needs of employers. These items include customized training in high demand occupations, apprenticeships, internships, and work-based learning experiences. Customized training is defined in WIOA as training designed to meet the requirements of an employer or group of employers that is conducted with a commitment by the employer to employ an individual upon successful completion of the training and for which training the employer pays a significant portion of the cost of the training (USDOL, 2021). These items are, as reflected in the weighted-ranking, also areas where there is a relatively high need for TAT.

Also represented as items of high importance and high TAT need were issues influenced directly and indirectly by the coronavirus disease 2019 (COVID-19) pandemic and the need to adapt VR services to respond to the needs of consumers and employees. In this section of the questionnaire, these direct influences include (a) distance or remote rehabilitation counseling services and (b) maintaining continuity of services during natural or human-caused disasters. Throughout the participants' responses to the questionnaire, including the outreach and employment services, are additional direct and indirect, and likely enduring, influences of the pandemic on both employment and VR services. Thus, we review the final section of the survey before discussing the COVID-19 impact more broadly.

4.4. Employment services

In the area of employment services, TAT on services that promote competitive integrated employment, such as supported and customized employment, and those aligning with the emphasis of WIOA and the Rehabilitation Act Amendments on demand-side and dual-customer (e.g., business outreach and engagement) approaches were prioritized both in terms of importance and need for TAT. Also highly ranked were items describing opportunities for VR to educate employers about and advocate for greater inclusion of workers with disabilities in the workforce, including such items as job accommodations (i.e., modifications to the workplace); disability

inclusion policies and training; discrimination or disability rights legislation; employer diversity policies; and disability inclusion training workshops.

4.5. Broad impact of the pandemic

The COVID-19 pandemic remains a global health crisis and has had a profound effect on governments and businesses (Hartmans, 2021; Lund et al., 2021). The most significant impact of the pandemic on the world of work is the dramatic increase in number of employees working remotely. A McKinsey & Company study (2021) indicated that 20 to 25 percent of the workforces in advanced economies could work from home between three and five days a week. Fortune 500 companies like Salesforce now offers their employees three options to do their work (Hartmans, 2021). Employees who choose the "flex" option will work in the office between one and three days each week for tasks that are more challenging to do over video calls, such as team collaboration, customer meetings, and presentations. The "fully remote" option will be reserved for those who do not live near one of the company's offices or work in roles that do not require being in a physical office. The "office-based" option is for a subset of employees who must work in the office four to five days per week (Hartmans, 2021). Lund et al. (2021) indicated that jobs in work arenas traditionally requiring higher levels of physical proximity, such as medical care (e.g., doctors, nurses, and other health professionals including rehabilitation counselors) are likely to see greater transformation after the pandemic. Telemedicine has been used to reduce face-to-face meetings with patients at a time of mandated social distancing and self-isolation. Digital transformation in healthcare may profoundly change how health professionals interact with their patients.

For governments, digital public services are an imperative. The private sector has raised expectations on the customer experience, and people expect governments to keep pace with innovative business practices in the digital economy. The most compelling features of digital governments include ability to serve efficiently, scale cheaply, and adapt quickly.

Leaders of state vocational rehabilitation (VR) agencies must allocate funding and resources to improve their CIT infrastructure to provide effective digital public rehabilitation services to people with disabilities during and after the pandemic. The improved CIT structures must include an inventory of smart devices (e.g., laptop computers and tablets) that

can be accessed by counselors to provide virtual services, and VR consumers to receive remote, blended, and in-person VR services. State VR agencies must work cooperatively with each other, and with national technical assistance centers funded by the RSA, such as the VRTAC-QE, to develop virtual interventions that can be used by counselors to provide effective virtual rehabilitation services. Examples of virtual services that can be provided to help VR consumers achieve their employment goals include psychological and vocational assessment, psychological and career counseling, workplace socialization skills training, job seeking skills training, self-advocacy training, job shadowing and virtual field trips to visit companies, motivational speakers, mentoring, positive psychology interventions, and health promotion interventions.

The pandemic, the Black Lives Matter movement, and the passage of the COVID-19 Hate Crimes Act (May 2021) also exposed and magnified existing racial inequalities in the United States. Systemic discrimination against African Americans and other underrepresented groups, including people with disabilities, permeates every aspect of society, including government, healthcare, education, and the workplace. In 2020, the Council of State Administrators of Vocational Rehabilitation (CSAVR) issued a strong statement condemning and rejecting racism and inequities in all forms and the systemic way it is used to oppress individuals with disabilities, especially those from racial minority backgrounds (CSAVR, 2020). To reduce racial inequality, RSA has recently announced a funding opportunity (Notice Inviting Applications for Activities for Underserved Populations, Assistance Listing Number 84.315 C, published in the Federal Register, 2021) to improve employment outcomes of individuals with disabilities from racial minority backgrounds through multicultural competency training for VR leadership and staff, collecting and analyzing relevant data, evaluating effectiveness of multicultural competency training, and disseminating evidence-based practices. Leaders and staff in VR agencies must redouble their efforts to reach out to leaders of minority and disability communities to help improve access to VR services and increase the delivery of culturally sensitive services to improve employment and independent living outcomes.

Corporate America has also pledged to narrow racial inequality in the workplace (Computer Networks, 2020; Feiner, 2021). However, Corporate America will not be able to fulfill their promises without a sufficient supply of individuals from marginalized groups in their talent pools. This presents a golden opportunity for VR professionals to intensify their efforts to connect and cooperate with employers to promote diverse, skilled, underrepresented workers for job positions and provide skills training for VR clients to fill these in-demand occupations. Leadership and district managers in state VR agencies must build relationships with senior executives of companies who are committed to increasing the representation of people with disabilities, especially persons with disabilities from diverse and underrepresented backgrounds in the workplace. WIOA provides a blueprint for state VR agencies to conduct local labor market analysis, connect with employers to identify their needs for skilled workers, collaborate with employers and local educational agencies to develop customized training, apprenticeship programs, training certificates, and college and university training for qualified VR consumers to fill in-demand jobs in the local job economy.

4.6. Limitations

Several important limitations should be considered in evaluating and applying the results of this study. Although multiple recruitment avenues were used to identify and invite SVRA and other vocational rehabilitation agency personnel to participate, the current sample of 229 participants provides a population that is diverse in terms of geography and SVRA agencies, it represents a relatively small percentage of the target population. The perspectives of a larger sample may suggest different priorities in terms of prioritizing TAT needs. Similarly, the present sample does not include employers or VR consumers, or the responses of persons with disabilities more generally. The research team has, and continues to, recruit samples from both of these groups, the perspectives and priorities of both being critically important in the present context. These will be evaluated and reported elsewhere. Finally, the methodology of the study provides a broad range of VR services and activities, but limited opportunities to seek additional, and potentially absent, priorities from the participants.

5. Conclusion

The VRTAC-QE Needs Assessment was designed to assess current technical assistance and training needs of state VR agencies, their staff, and their affil-

iates. The areas, and relative importance of each, identified through this survey will support the development and implementation of technical assistance activities that are responsive to the needs of SVRA professionals providing vocational rehabilitation to persons with disabilities and increasing the capacity of these agencies to promote quality employment outcomes. The findings offer a framework to identify and implement supports to these agencies among the many contemporary challenges, and opportunities, that affect persons with disabilities' full inclusion in work and society.

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