

Consumer perspectives on reasons for unsuccessful VR case closure: An exploratory study

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Abstract. Unsuccessful case closure contributes not only to great financial loss for the federal/state vocational rehabilitation (VR) system but also to consumer disappointment. There is a lack of research on factors related to unsuccessful closure. In this mixed design study, VR consumers from eight states were randomly selected following the Longitudinal Study of the Vocational Rehabilitation Services (LSVRS) weighting schemes. Consumers ($n = 111$) and matched counselors ($n = 54$) were asked to identify factors they thought contributed to the unsuccessful closure. Consumer most commonly reported reasons were disability severity (48%), no jobs were available (37%), lack of additional services (33%), and missed appointments (30%). Counselors cited missed appointments (61%), followed by consumers' not being ready for work and disability severity (both 52%), and service refusal (41%). Contrary to our hypotheses, transportation, potential benefit loss, and substance use disorders were not among the most frequent factors cited in unsuccessful closure by either consumers or counselors. The results of this study can assist administrators and vocational counselors in addressing the needs of their consumers. The single most important factors identified by matched consumers and counselors ($n = 54$ each) were not significantly different and both parties identified disability severity as the most common primary factor in unsuccessful case closure.

Keywords: Vocational rehabilitation, outcomes, substance use disorders, substance abuse, disability, mixed methods, qualitative study

1. Introduction

Data from the 2008 Rehabilitation Services Administration (RSA) Annual Report [1] revealed that approximately 56% of the consumers from the federal/state Vocational Rehabilitation (VR) system were "successfully" closed, that is, ended with employment and classified as a status 26 closure. The remaining 44%

were closed without a successful employment outcome after receiving services and were classified as either status 28 or status 30 depending upon the initiation of an individualized employment plan. It was estimated that in total the 44% of 28 and 30 closures cost VR approximately \$411,428,138, with the average cost of each unemployed consumer being \$2,845 [1] (Status 28 is defined as no employment secured after individualized written rehabilitation program initiated and status 30 is defined as no employment after eligibility is determined but before individualized rehabilitation program is initiated [2]). Although there are other categories of closures within the VR system, such as *closed because of extended evaluation*, researchers typically examine status 26 versus status 28 and 30 [3–5].

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Unsuccessful closures not only lead to significant losses for the VR system but also lead to consumer losses, in particular disappointment in being unemployed after investing a significant amount of time attempting to work. Despite these losses, the 56% successful closure rate for persons with disabilities (PWD) in VR services compares favorably to the overall American PWD population: the American Community Survey (ACS) indicates that only 39% of all community-dwelling American PWD aged 16–64 were employed in 2008. Both of these figures for PWD pale in comparison with the ACS estimate of 77.7% employment among Americans without a disability [6].

Factors most associated with successful closure have been researched a number of times, but reviews of consumer-focused reasons for unsuccessful closure have not been conducted. Consumer voices are also underrepresented in the literature except in the form of federally-mandated satisfaction surveys. Factors that are associated with unsuccessful closure can provide VR with valuable information that may not be apparent by only focusing on successful closures [4, 5, 7–9]. The current study attempted to investigate and determine the reasons for lack of employment from the VR consumers' perspectives and compared them to matched counselors' responses.

1.1. The importance of increasing employment rates in VR

The importance of understanding the factors that contribute to unsuccessful closure was underscored by the demands for accountability and effectiveness of services congressionally mandated in Section 14 of the Rehabilitation Act amendments in 1992 [10]. As a result, the Secretary of the U.S. Department of Education initiated the "Longitudinal Study of the Vocational Rehabilitation Services" (LSVRS) program designed to examine the efficacy of the federal/state VR system over a ten year period [4, 11]. Specifically, the LSVRS assessed the ability of VR services to assist eligible PWD in achieving positive, sustainable economic and noneconomic outcomes. The study tracked a nationally representative sample of 8,500 VR applicants and current and former VR consumers. Data collection activities began in December 1994 and were completed in January 2000, with the majority of the 8,500 consumers tracked for three years [8]. The LSVRS was an important study in that it constituted the first independent and nationally representative study of VR employment outcomes. It helped to demonstrate gaps

between research and practice and identified long lag times in translating published results into employment interventions, resulting in delayed influence on employment rates among VR consumers [7, 12–14].

Researchers and policy makers have been vexed by the stasis of unemployment figures for VR consumers, despite sustained public investment in services at the federal and state levels, changes in civil rights legislation, and continued research on employment strategies [7]. While econometric and public policy analyses are important contributions, the knowledge base related to best practices and the consequences of operational and programmatic decisions remains limited [15]. This lack of well-documented best practices limits our ability to assure that VR is providing the most effective services to improve employment rates for people with significant disabilities.

1.2. Predictors of employment suggest predictors of unemployment

The LSVRS study, described above, was able to categorize three areas of predictors of employment: 1) the quality of the relationship between the consumer and the counselor; 2) the type of services received from VR (e.g. job development, job placement, and on-the-job training); and 3) mobility issues, which included assistance with independent living and transportation [16, 17]. In addition, Hayward & Schmidt-Davis [8] reported that consumers were more likely to achieve employment when they had higher gross motor function, higher cognitive function, higher earnings at their most recent job prior to VR application, higher education, higher literacy, child care if needed, and a greater knowledge of different jobs. Finally, consumers were more likely to become employed if they did not receive Social Security Disability Insurance (SSDI) at entry to VR services [18].

Similarly, other researchers report that employment is predicted by age; race/ethnicity; education; disability severity and type; length of receiving services; total service cost; work disincentives (SSDI); good consumer/counselor relationships; childcare; flexibility in one's individualized rehabilitation program during the course of services; on-the-job training; and receiving job placement or supported employment services [4, 5, 9, 19–23]. The employment picture becomes complicated when these predictors are considered in-depth and their interactions are considered [16, 17, 24]. For example, consumers with visual or hearing impairments were more likely than individuals with orthopedic disabilities

to achieve a positive employment outcome at closure, while consumers with mental illnesses and cognitive impairments were less likely to become employed than those with orthopedic disabilities. Younger white consumers without work disincentives (e.g., SSDI or other benefits) also had increased odds of successful employment outcomes [24]. Despite the complexity and the interactions among the predictors of employment, there appears to be an adequate amount of information available in the literature associated with predictors of successful employment.

On the other hand, there is a dearth of research investigating the factors that are associated with unsuccessful closures, especially from the consumers' point of view [25]. The factors that are reported to lead to unsuccessful closure include increased counselor caseloads [26], poor counselor-consumer relationships [8], lack of transportation [8, 17, 27], significant severity in consumer disability [3, 7, 27], lack of consumer education [5, 16, 19], type of disability [28-30], lack of work history [8, 31], and consumer dissatisfaction with VR services [17, 32]. Recent research in the VR system has provided evidence that suggests that substance abuse may be related to unsuccessful closures [33]. Using the LSVRS data, Hollar and colleagues [25] found that consumers with physical and mental disabilities, ADHD, learning disabilities, or substance use disorder (SUD) had the highest unsuccessful closure rates (43–51%). Further, VR consumers with SUD had a greater likelihood of unsuccessful case closures compared to those without SUD, despite the fact that VR services were comparable ($X^2_{2df} = 17.4, p = 0.000$). It is important to note that the influence of SUD extends beyond cases of current substance use. Persons with SUD often experience legal, medical, and psychological problems associated with their disability even during extended periods of sobriety. For example, dealing with the temptation of a return to substance use and concern for protecting a tenuous sobriety can introduce fear, frustration, and other emotional stressors [34], taking focus off other activities, including VR service participation.

In addition to the relationship between SUD and unsuccessful closure, the rate of PWD who have a SUD applying for VR services is more than twice the rate of the general population estimates which range from 8.9% (past-year) to 14.6% (lifetime) [35–37]. A recent study of 1,000 VR applicants in the mid-west found that 22% met the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-TR) criteria for SUD [38]. These rates alone provide a valid concern for VR pro-

fessionals to be aware of the volume of consumers who have either a diagnosed or undiagnosed SUD. It is clear that SUD affects closure status; however, it is not well understood and further investigation is warranted [5, 25, 39, 40].

Based on prior literature, we believed that some consumers who had a recent unsuccessful closure would report scenarios that indicated that alcohol or drug issues contributed to their unsuccessful closure. Second, we believed that consumers would report that their disability became more severe, that transportation and childcare were issues, and that a lack of education as well as age would be factors identified as issues that contributed to continued unemployment. We expected that counselors would be more likely than the consumers to implicate SUD in unsuccessful closure. We used a mixed design that included qualitative and quantitative questions to explore the meanings of and factors influencing unemployment. This design involved intensive descriptions and analyses to gain a detailed understanding what unemployment means to consumers. The qualitative elements of the study were designed to solicit more informative responses from VR consumers than just "yes/no" answers. A matched group of counselors were also interviewed for 54 VR consumers who received VR services and who were closed as "unsuccessful".

1.3. Research questions

Identifying the determinants of unemployment could potentially provide valuable information to determine the effectiveness of the VR system and more practically, it can inform VR counselors in determining what factors and services are least effective in helping their consumers. With this in mind, the following questions guided this inquiry:

1. What are the reasons identified by consumers for continued unemployment? Do they conform with previously identified predictors of successful employment (e.g., childcare or transportation issues)?
2. Can unsuccessful cases be meaningfully categorized by whether SUD may have been a factor in the closure? Do consumers identify substance abuse issues as a factor contributing to their unemployment?
3. Do reasons for closure differ between consumers and their counselors, especially with regard to the implication of SUD?

2. Methods

2.1. Sample

The sample consisted of 111 VR consumers from eight states who were recently closed unsuccessfully either status 28 or 30. Consumers were 18 years of age or older and were their own guardian. They received a \$40 gift card stipend for their participation in a phone interview lasting approximately 30 minutes.

2.2. Sampling protocol

Since substance abuse was the primary variable of interest, a wide range of states with varying rates of primary and secondary SUD diagnoses was needed. Thus, we ranked states from the RSA 2008 database [1] from highest to lowest rates of SUD. Because of the resources available, we were able to include eight states. Following the ranking, three states in the “low” range, two states in the “average”, and three states in the “high” range were chosen. States were recruited following a convention developed for this study by the National Opinion Research Center at the University of Chicago. VR administrators from ten states were invited to participate and those from eight states accepted: Alaska, Florida, Maryland, Michigan, Nebraska, New York, South Carolina, and Utah.

Following the LSVRS weighting strategy, we proportionally adjusted the number of consumers chosen within each state to reflect the total VR consumer population in that state VR program. Then each state’s data specialist randomly selected consumers with unsuccessful closure (status 28 or 30) within the prior three months (see Table 1).

For example, the state of Michigan served approximately 3.2% of the total percentage of consumers served by the entire federal VR system, thus the target for that state was 16 consumer interviews. We divided the total targeted number of interviews (approximately 100) by the proportion served by that state.

We sampled both individuals with unsuccessful closure status 28 with their assigned counselor and individuals with unsuccessful closure status 30 who had not worked with a counselor. Each state’s data specialist selected a random sample of the consumers with status 28 closure served by the counselors who were willing to be interviewed. The RRTC research staff provided recruitment information for the consumers to be sent out by each VR program. This information included a letter explaining the study, a return envelope, two copies of the informed consent, our toll-free telephone number, and our TTY number. Each state sent the study materials along with their state’s cover letter to the randomly selected consumers. Based on response rates from the LSVRS study, we tripled the number of invitations sent out to account for attrition. If selected consumers chose to participate in the study, they indicated by signing and returning one copy of the informed consent which included their two contact telephone numbers.

When staff received a signed consent form, the consumer was contacted to set up at time for the interview. At the beginning of each interview, the consumer was informed that the interview was going to be audio-taped for research purposes and confidentiality protection was explained. All interviewers were trained and participated in mock interviews to address potential responses and increase inter-rater fidelity regarding key terminology, VR codes, and possible responses. We developed a consensus about discrepancies in interview procedures, probing questions, and categorizations of responses.

2.3. Interview development

Structured consumer interviews were created using four primary sources of information: (a) all questions from the Substance Abuse in Vocational Rehabilitation Screener (SAVR-S) [41], a 46-item questionnaire that scores the probability of consumer SUD; (b) selected items from the LSVRS initial and follow-up surveys specific to consumers with 28 and 30 closure; (c) a literature review that indicated possible variables that affect successful and unsuccessful closure; and (d) information from two focus groups consisting of VR consumers with recent unsuccessful closures who were asked questions about why they were unsuccessfully closed.

2.4. Data analysis

The audio-taped interviews were transcribed and transferred to the N6 qualitative software (NUD*IST 6.0, QSR International Pty, Ltd, Cambridge, MA) to

Table 1
Representation of individual state VR consumers vs. proportion of federal VR consumers

State	AK	FL	MD	MI	NE	NY	SC	UT
Proportion of VR consumers (US)	0.27	5.5	1.5	3.2	0.76	7.2	2.9	1.5
Targeted number of interviews (N=100)	2	23	7	16	4	29	11	8
Number of interviews completed (N=111)	2	13	19	9	5	37	13	13

store, organize and retrieve data for assessment. Qualitative data were coded by three team members to identify key themes; two staff members conducted initial coding and all codes were checked by the Research Director (MH). We developed codes that represented content themes, highlighting areas of agreement and differences in perspectives on specific participation issues. Broad disability types (mental illness, cognitive disability, physical disability) were categorized based on information gathered from consumers, counselors, or both. However, not all consumers described their disability in enough detail to facilitate categorization ($n = 15$).

Data for individuals with positive responses to questions on the SAVR-S were submitted to the SASSI Institute (Springville, IN) for scoring using only consumer identification number. Reports were generated using the proprietary algorithms and results (“low”, “medium”, or “high” probability of having a substance use disorder) were generated. The SAVR-S has a robust sensitivity and specificity for SUD among VR applicants [38].

Coded data were categorized and descriptive statistics (frequencies, means, standard deviations, medians) were generated using the Statistical Analysis System for Windows, version 9 (SAS, Inc., Cary, NC). For each consumer that had a matching counselor interview ($n = 54$), we tabulated frequencies of factors that each consumer’s counselor identified in that consumer’s unsuccessful closure and summed the number of discordant responses. We compared the overall frequencies of responses between consumers and counselors using the two-tailed z -test for two proportions to calculate significance ($\alpha = 0.05$).

3. Results

3.1. Demographics and disability categories

The response rate for our mailings was approximately 28% (111 valid consumer responses from approximately 400 invitations). Roughly half of the sample self-identified as Caucasian (56%), about one-third as African-American (36%), and the remainder identified with other (6%) or did not report (3%). The sample was comprised of roughly equal numbers of males ($n = 49$, 44%) and females ($n = 62$, 56%). Although the sample included adult individuals from 18 to 65 years of age, the mean ages fell into a middle age range (male mean = $43.69 + 11.89$ years, female

mean $41.64 + 12.75$ years) and were not significantly different between genders (t -test $F = 1.15$, $p = 0.62$). Mean education levels were equivalent to high school graduation (male mean = $12.69 + 2.25$ years of education, female mean = $12.23 + 1.75$ years of education) and ranged from 8th grade through post-college graduate but were not significantly different for males and females (t -test $F = 1.66$, $p = 0.07$). The majority of individuals were never married or were currently unmarried (44%) and one quarter (25%) were currently married or partnered: smaller numbers of individuals were divorced (13%), separated (8%), widowed (7%), or did not report (3%). Demographic differences between status 28 and status 30 closures were not statistically tested due to widely different sample sizes (status 28 $n = 90$, status 30 $n = 21$).

3.2. Disability categories

Broad disability categorization was possible for 96 of the responding consumers. The majority ($n = 61$, 64%) had a physical disability, more than one third ($n = 38$, 40%) had a mental illness, and a smaller portion ($n = 19$, 20%) had a cognitive disability. Five individuals had both a mental illness and cognitive disability; 15 had both a mental illness and a physical disability; and 11 had both a cognitive and physical disability. Three individuals had all three types of disability.

One quarter ($n = 24$, 25%) of consumers had a past or present SUD. Only four individuals had positive responses to SAVR-S items that indicated a “high probability” of having an SUD. All were male, and three of the four had an SUD or a history of SUD reflected in either their interview or in their counselor’s interview (although not necessarily reflected as a factor in their case closure).

3.3. Consumer endorsed factors contributing to unsuccessful closure

Our questionnaire contained a list of potential reasons or factors which could contribute to unsuccessful closure. When consumers were asked to select all of the factors that applied to their situation, approximately half of all respondents (49%) endorsed the statement “My disability was too severe or my medical condition did not permit me to work” (Fig. 1). Roughly one-third of respondents agreed to statements indicating a lack of available jobs (34%), unmet needs for additional services (38%), or to missing enough appointments that their success was compromised (29%). Child care prob-

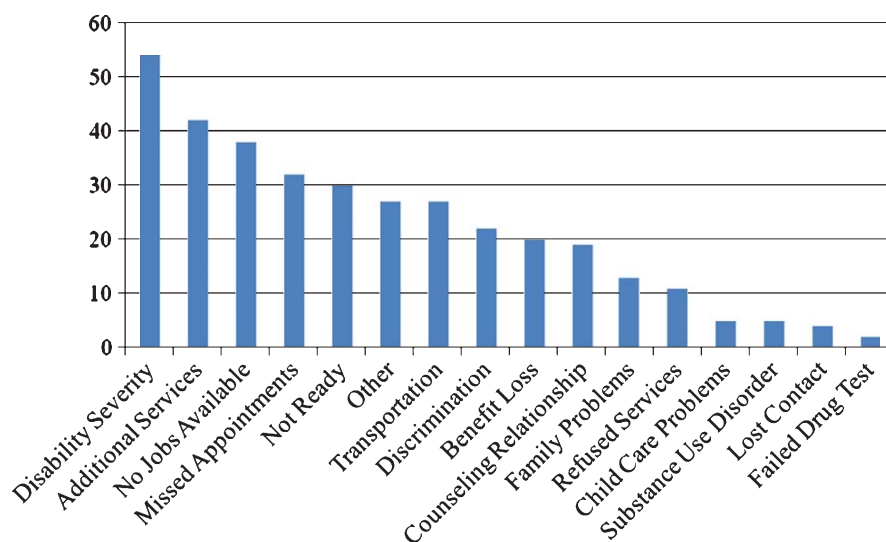


Fig. 1. Frequency of factor endorsement by consumers, “all that apply” (28/30 combined) ($N=111$).

lems (5%) and drug/alcohol issues including SUD (5%) and failed pre-employment drug test (2%) were the least frequently endorsed factors.

One quarter (24%) of respondents cited “other” factors in their unsuccessful case closure. While some of these reasons were vague or not easily explained by consumers, three consumers reported outcomes that would be considered positive employment outcomes (two were employed via alternative means and one chose to be a stay-at-home parent). Other factors that consumers cited include 1) general frustration with the range, type, or speed of VR services offered to them; 2) a desire or need to work for themselves or in a non-traditional environment that was not offered by VR employers; 3) incarceration; and 4) increased family responsibilities that did not fit within the factor called “family problems.”

3.4. Consumers’ most important factor in unsuccessful closure

Given the many potential reasons for unsuccessful closure (including *other*), participants were asked to identify the single factor they believed most important in their unsuccessful closure. Table 2 illustrates the frequency of factors endorsed by consumers as “most important” in the unsuccessful closure of their case. The severity of disability was identified as the single most important factor by one-third of all consumers (31%), distantly followed by unmet needs for addi-

tional services, feeling discriminated against, refusal of VR services offered, and “other” issues not listed (described above).

3.5. SUD as a factor in unsuccessful case closure

Of the four individuals categorized as having a “high probability” of SUD at time of interview, only one indicated substance use as a factor in unsuccessful case closure, and that consumer identified it as the most important factor (no counselor interview was conducted for that consumer). The second consumer identified as having a “high probability” of an SUD did not indicate any role of substance use in that closure, and the counselor was not interviewed. The remaining two consumers failed to indicate substance use as a factor in their unsuccessful case closures, and only one of their counselors identified substance use as a factor in the closure.

3.6. Counselor endorsed factors in unsuccessful closure

Analysis of the consumer subset with matching counselor interviews indicated several important differences in factors identified as contributing to the consumer’s lack of success. We observed statistically significant differences in opinion between consumer and counselors regarding the role of missed appointments (the factor most frequently cited by counselors), the avail-

Table 2
Single “Most important” factors in unsuccessful case closure endorsed by consumers (by closure status)

	Status 28 <i>n</i> (%)	Status 30 <i>n</i> (%)	Total <i>N</i> (%)
My disability was too severe or my medical condition did not permit me to work	26 (29)	10 (48)	36 (32)
Were there other reasons that VR did not work for you?	13 (14)	2 (10)	15 (14)
I needed additional services that were not provided to me	6 (7)	3 (14)	9 (8)
I was discriminated against	7 (8)	1 (5)	8 (7)
I refused the specific services that VR suggested me to complete	7 (8)	0	7 (6)
I didn't get along with my counselor, or we just didn't see eye to eye	5 (6)	NA	5 (5)
I found out that I wasn't really ready to work	4 (4)	0	4 (4)
I didn't have transportation to get to places that my VR plan called for me to go	3 (3)	2 (10)	5 (5)
I had an alcohol or drug problem that seemed to get in the way of completing VR	3 (3)	1 (5)	4 (4)
No child care	3 (3)	1 (5)	4 (4)
I missed a few appointments and things just didn't come back together	0	1 (5)	1 (1)
I had family problems/ My family was not in favor of my plan for VR	3 (3)	0	3 (3)
There were no jobs available to me	3 (3)	0	3 (3)
I would lose benefits (SSI/SSDI)	2 (2)	0	2 (2)
My counselor couldn't get in touch with me because my phone or address changed	0	NA	0
I failed the pre-employment drug test	0	0	0

*Note: Individuals with closure status 30 were assumed not to have counselors and were therefore not offered counselor-related questions.

ability of jobs, the consumers' refusal of services, consumers' readiness for work, and lost contact (Fig. 2). While only two consumers in this subset ($n = 54$) identified SUD as a factor in their closure, 10 counselors (18.52%) endorsed the statement indicating that the consumer “had an alcohol or drug problem that seemed to get in the way” of their VR success. This difference in response is statistically significant (Fig. 2). Counselors and consumers had similar rates of citing the remaining factors in their consumers' unsuccessful closures.

The majority of consumer/counselor pairs (42/54 = 78%) were concordant in their response to the role of SUD in the unsuccessful closure. The opposite is true for the concordance of the single “most important” factor for the closure, with only 18 consumer/counselor pairs (33%) agreeing. The average number of discordant answers between a consumer and matched counselor (for all factors that apply) was $4.63 + 2.17$ (median 4.5, mode 5.0), and ranged between a single disagreement to 11 discordant answers out of a possible 16 (69% difference). In the four cases with the most discordant answers (≥ 9), all four consumers stated a problem with the counselor/consumer relationship: none of their matched counselors endorsed that as a factor in the unsuccessful closure.

3.7. Counselors' most important factor in closure

Within the subset of matched consumers and counselors, no significant differences in frequency of single “most important” factor were found (all z tests $p > 0.05$). Both parties cited disability severity as the most common single factor contributing to the unsuccessful closures discussed (counselors $n = 22$, 40.74%; consumers $n = 19$, 35.19%). Counselors cited missed appointments as the second most common single factor ($n = 7$, 12.96%; consumers $n = 4$, 7.41%), closely followed by consumers' refusal of offered services (counselor $n = 5$, 9.26%; consumers $n = 6$, 11.11%). Both parties identified transportation issues, unavailability of jobs, and benefit loss at the same frequency (transportation $n = 2$, 3.70%; others each $n = 1$). No counselor cited consumer/counselor relationship problems as the most important factor in closure, compared with four consumers (7.41%). Two-thirds of the consumer/counselor pairs (33 of 54, 66.67%) had discordant factors identified as “most important” in their case closure. In three cases the discordant answer was due to one of the parties (in two cases the consumer, in the third, the counselor) identifying SUD as the most important reason for the closure. In two cases the counselor did not report SUD as either a reason for case

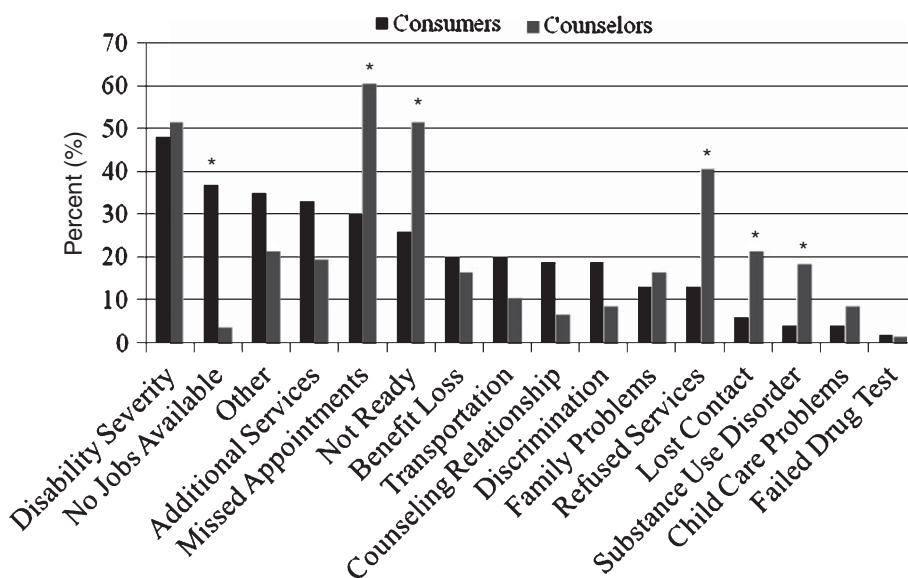


Fig. 2. Frequency of factors in unsuccessful closure identified by consumer vs. matched counselors (n = 54); *significantly different, z-values > 3.00, 95% CI.

closure (when choosing multiple factors) or as a disability (ever or current), the reverse was true in the third case.

4. Discussion

The implication of disability severity as the single most important factor in unsuccessful closure from both the consumer and counselor perspective indicates that further research into the relationship between extended medical needs and employment for PWD needs elaboration. More research is needed on models of employment that include part-time work and/or self-employment including at-home, on-line, and flexible hours in order to accommodate persons with physical or medical conditions that may change from week to week. It is interesting that traditionally assumed contributing factors of benefit loss, transportation, and child care were not among the most frequently cited single “most important” or most commonly endorsed contributors to unsuccessful case closure.

Evidence of active substance use was clearly indicated in three of the 10 cases where counselors indicated a role of SUD, and two of these consumers failed to identify any role of SUD in their case closure. In two cases, both counselors and consumers agreed that maintaining sobriety took priority over their focus on VR services. In three cases, the counselors indicated

a suspicion of SUD with two counselors claiming a lack of evidence in light of incomplete information and the third suspected SUD based upon evidence gathered during services. None of the three consumers implicated SUD as a factor in their case closure. One counselor reported that legal troubles stemming from SUD resulted in incarceration and led to the consumer’s case closure, but the details of the latest legal situation were unknown. This consumer cited “bad decisions” as the factor resulting in case closure and offered no further information. The tenth consumer discussed casual alcohol use with the counselor and in the study interview; however, the counselor suspected a greater role of SUD than the consumer disclosed.

Because consumer interviews took place at least a few months after VR case closure, there is no objective indicator of SUD at the time of service unless alcohol or other drug testing was conducted and reported by the VR counselor (this occurred in one case). This is especially problematic in the cases where counselors and consumer have contradictory opinions regarding the role of SUD in a consumer’s case closure. Staff was clear in asking counselors for their opinions, and they took the time to differentiate their suspicions from observations based on evidence. However, in the presence of missing information, counselors may interpret missed appointments and loss of contact as indicators of possible SUD, especially for consumers with a history of SUD [42, 43]. While one perspective would state

that consumers are not willing to disclose their SUD to interviewers, their statements cannot be given more weight than that of the counselors when objective evidence is not available. To mitigate this difficulty, we recommend a prospective longitudinal study of current VR consumers and counselors to properly elucidate this finding, comparing across cases with successful and unsuccessful closure.

4.1. Primary research questions not supported

The results of this study do not support our original research questions about the potential hidden role of SUD in unsuccessful closure. Possible reasons may include the following: 1) the VR system and consumers are not aware of the relationship between substance use and vocational impairment, and both sectors are reinforced to ignore it (e.g., VR counselors during training related to RRTC activities very frequently mentioned that they can't send someone with an acknowledged SUD to an employer, as failures at work by these consumers will hurt the relationship with the employer and result in a loss of this employment source for future placements); 2) consumers of VR with serious SUD problems disappear during their involvement in VR; thus they tend to not respond to studies where the informed consent specifically states that substance use or abuse is the area of study; 3) the potential for a hidden role of SUD in unsuccessful closure is not as prominent as hypothesized; or, 4) a prospective study might be more effective for elucidating this issue than the retrospective design used.

The fact that SUD is not well documented in VR is suggested by widely varying prevalence reported across states. Estimates for a primary or secondary SUD disability diagnosis varies across the 50 states ranging from 0.2% to 32% [33]. There is no other disability that has such a wide variation in the percentages of primary or secondary diagnosis across states [33]. This variation in SUD rates suggests diagnostic, screening, or coding issues within the VR disability eligibility process with respect to SUD diagnosis. The low rates of reported SUD for several states represented in this study [1] are highly unusual and unlikely, especially those that are lower than even population estimates for persons without disabilities, which range from 8.9% (past-year) to 14.6% (lifetime) [35–37]. This might be due to poor recognition of SUD by VR counselors and/or consumers, but it is possible that, for persons with multiple disabilities, listings of primary and secondary disabilities are prioritized by the less

stigmatizing and more easily documented physical or cognitive disabilities or more clearly presenting mental illnesses.

4.2. VR codes do not accurately reflect outcomes

Another concern that emerged from this study is the limitation of the VR coding system. Among our sample of individuals presumably closed unsuccessfully without employment, we identified three individuals who were employed at the time of VR entry who applied for job retention assistance and were closed as “unsuccessful” because retention services were not provided or contact was lost. In addition, three consumers chose to remain at-home as family caregivers, yet were categorized as ‘unsuccessful’ closures because they did not attain *paid* employment. This not only minimizes the importance of the work these consumers conduct, but also misapplies the theoretical goal of VR to help individuals in “actively pursuing the achievement of their employment aspirations and choices” and achieving “employment outcomes that are consistent with their aspirations and informed choices” [44]. Individuals who become self-employed or who work in sheltered workshops are also categorized as “unsuccessful” closures [44]. It is ironic that a system that was designed to address highly individualized needs does not recognize individualized successes as such. Further, in an economic and political climate where programs are funded based upon evidence-based outcomes, such inaccurate coding of outcomes is simply maladaptive. This is especially important for the federal VR system, as extended employment is no longer recognized as successful employment outcome has resulted in decreasing rates of VR success for consumers with significant disabilities since 2001 [44].

4.3. Limitations

There were several limitations of this study. As predicted by VR staff, persons with unsuccessful closure were very difficult to contact. Even persons initially indicating they were willing to participate were difficult to follow up with because of mutability in housing or phone contacts. This would realistically suggest that our results concerning loss of contact as a factor in unsuccessful closure is an underestimate of the true effect.

Ethical concerns regarding confidentiality of consumer information necessitated that the study method required double-response from participating consumers

first with a VR invitation and then with a phone contact by study staff. This might have introduced participation bias against individuals with active SUD or for whom these means of communications were difficult.

Our difficulty recruiting respondents caused us to issue several recruitment requests and iterations (i.e., oversampling) in order to fill the cohort. Despite the rigorous sampling design, the response rate of 28% and potential of bias against consumers with SUD are limitations to the generalizability of these results to the VR consumer population at large due to potential variation in responses that would be contributed by the non-responding consumers. The degree to which the response rate impacts variables other than SUD cannot be estimated in the absence of additional data, as the literature reports cases of high non-response where bias is negligible [45, 46] and cases with significant bias [47]. Additional study of a wider array of consumers would be helpful in evaluating our results, especially if conducted within a prospective design.

The consistent role of disability severity cited by both consumers and counselors as both the most important and the most common reason for unsuccessful case closure suggests a potential for current policy despite the exploratory nature of this study. We suggest that unsuccessful closure rates, program costs, and consumers might all be positively affected by reversing the recent trend of reducing potential categories of positive VR outcomes. This would potentially include recognizing part-time and self-employment as successful VR closures, as well as cases in which individuals knowingly choose to be stay-at-home caregivers or pursue volunteer work. More effective ways for individuals to self-assess their ability to physically tolerate standard workplaces during eligibility determination would empower consumers to judge the relative significance of their disability in the workplace earlier in the VR process, giving them the possible choice to discontinue services prior to receiving a potentially disappointing label of “unsuccessful.”

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