

An investigation of the outcomes achieved by individuals with intellectual disabilities and mental illnesses

Robert Evert Cimera^{a,*}, Lauren Avellone^b and Carol Feldman-Sparber^a

^a*Kent State University, Kent, OH, USA*

^b*Virginia Commonwealth University, Richmond, VA, USA*

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Abstract.

OBJECTIVE: The purpose of this study was to examine the vocational, educational, and residential outcomes achieved by adults with a Dual Diagnosis (DD) of Intellectual Disability (ID) and Mental Illness (MI).

RESULTS: Approximately, one out of five applicants to Vocational Rehabilitation (VR) who had ID met the criteria for DD in 2013. Individuals with DD were found to work fewer hours and earn less pay weekly than applicants with ID-only and MI-only. Regarding vocation, applicants with DD were less likely to be employed than applicants with ID-only, although the same was not observed in comparison to the MI-only group. Furthermore, individuals with DD were the least likely to achieve a high school diploma. Finally, results indicated that most applicants with DD resided in group homes and were the least likely of all comparison groups to live in private residences.

CONCLUSION: Individuals with DD comprise a significant portion of applicants seeking VR services, but more needs to be done to understand their prevalence, characteristics, and outcomes they achieve.

Keywords: Vocational Rehabilitation (VR), Dual Diagnosis (DD), Intellectual Disability (ID), Mental Illness (MI)

1. Introduction

Intellectual disability (ID) is a developmental condition characterized by sub-average intelligence and poor adaptive skills. It affects between 0.5% and 3.0% of the general population (Larson et al., 2001). Mental illnesses (MI), on the other hand, vary considerably in their manifestations and can involve conditions ranging from psychoses, depression, bipolar, and anxiety disorders. Although estimates differ greatly, it is believed approximately 20% of American adults have some form of MI (U.S. Department of Health and Human

Services, 1999). Moreover, recent research indicate that approximately 18.6% percent of individuals over the age of 18 met diagnosable criteria for MI, excluding substance use disorders (National Institute of Mental Health, 2012). When an individual has both ID and MI, they are said to have a “dual diagnosis” or DD (Werner & Stawski, 2012).

Rates of DD are far more common than once believed. Repeated studies have suggested that between 30% to 50% of adults with ID, and 2.8% to 4.5% of children with ID, also have MI (Deb, Thomas, & Bright, 2001; Einfeld, Ellis, & Emerson, 2011; Emerson, 2003; Emerson, Einfeld, & Stancliffe, 2010). In fact, individuals with ID have been found to be three times more likely to have schizophrenia than the general population (Welch, Lawrie, Muir, & Johnstone, 2011) and are

*Address for correspondence: Robert Evert Cimera, Associate Professor, Kent State University, 405 White Hall, Kent, OH 44242-0001, USA. Tel.: +1 330 672 5796; Fax: +1 330 672 2512; E-mail: rcimera@kent.edu.

significantly more likely to exhibit observable psychiatric symptoms than individuals with schizophrenia who do not have a comorbid ID diagnosis (Bouras et al., 2004). Further, one of the most common forms of early-onset dementia (i.e., prior to age 50), occurs in people with Down's Syndrome (Weksler et al., 2013).

The co-morbidity of ID and MI create challenges that are otherwise not typically present in either population on their own. For example, individuals with ID often have difficulty understanding and employing the cognitive therapies typically used to treat severe mental illness (Barrowcliff, 2007; Bennett, 2014; Dagnan & Jaboda, 2006). This is especially true in circumstances where an individual has more severe ID, has difficulty communicating, or cannot understand the cognitive process connecting thoughts and feelings (Hatton, 2002; Trollor, 2014). Additionally, while behavior problems have often been identified with individuals with ID, such problems (especially aggression) are even more prevalent with individuals who are DD (Antonacci, Manual, & Davis, 2008; Lehman et al., 2004).

As the result of the stigma attached to mental health issues, many parents and practitioners have expressed reluctance to accept both ID and MI diagnoses (Costello, Bouras, & Davis, 2007; Edwards, Lennox, & White, 2007; Lennox, Diggins, & Ugoni, 2000). Further, because of the presence of both conditions increases the complexity of the services and supports required for individuals with DD to succeed in the community, many teachers, families, and practitioners elect to only address issues perceived to be caused by ID (e.g., academic issues), and ignore issues arising from the individual's MI (Werner & Stawski, 2012). Such one-sided approaches have been found to be ineffective at promoting successful educational and vocational outcomes.

Despite an increased awareness of DD, it is still very unclear as to its prevalence, particularly in the United States (Emerson, 2003; Einfeld et al., 2011). Further, while much of the available research explores the clinical presentation and treatment of symptoms, little is known about the vocational, residential, and educational outcomes achieved by adults with DD. To this end, the present study sought to extend the literature by examining the characteristics of, and outcomes achieved by, all 9,747 individuals with DD served by the US's state-federal vocational rehabilitation (VR) system in 2013. Outcomes examined included rates of eligibility for services, reasons for case closure, rates of employment, wages earned, hours worked, living arrangement, and highest level of education attained.

2. Method

2.1. Source of data

The data for the present study originated from the Rehabilitation Services Administration's Case Service Report (RSA 911) database. Containing data on all applicants for VR services, the 911 data documents each applicant's demographics, services received, and outcomes achieved. Data are entered into the database by certified rehabilitation counselors and are checked by two computer programs for potential errors.

2.2. Selection of participants

In 2013, 589,402 applicants had their cases officially closed by VR throughout the United States and its territories. Of these, 9,747 (1.7%) were diagnosed with ID (i.e., listed as "mental retardation" in the database) and MI (i.e., anxiety disorders, bi-polar, depression, personality disorders, schizophrenia, and "mental illness not otherwise listed") as either their primary or secondary disabling conditions. Moreover, 23,824 individuals were diagnosed with only ID and 48,762 with only MI. These two additional cohorts served as comparison groups to the DD applicants. Demographics for all three groups can be found in Table 1.

2.3. Variables

2.3.1. Rate of acceptance for services

Rates of acceptance for VR services were calculated by dividing the number of individuals closed in Statuses 26, 28, or 30 by the total number of applicants. In VR coding, Status 26 occurs when an individual's case was closed because an employment outcome had been achieved. Status 28 indicates that an applicant was determined to be eligible for services, an Individual Plan for Employment (IPE) was signed, but an employment outcome was not achieved. Status 30 indicates an applicant was found to be eligible for VR services, but the case was closed prior to an IPE being signed.

2.3.2. Rate of employment

An individual was said to be employed if his or her case was officially closed because an employment outcome had been achieved (Status 26). An employment outcome was defined by RSA as acquiring an integrated

Table 1
Demographics of individuals with ID-only, MI-only, and dual diagnosed

	ID-Only	Dual Diagnosed	MI-Only
N	23,824	9,747	48,762
MI-Diagnosis			
Anxiety Disorders	n/a	15.3%	9.7%
Depression and Mood Disorders	n/a	51.8%	54.6%
Personality Disorders	n/a	8.2%	5.5%
Schizophrenia and Other Psychotic Disorders	n/a	12.6%	19.8%
Other Mental Illnesses	n/a	12.1%	10.4%
Age (in years)	25.2	31.4	36.4
Gender			
Male	56.7%	53.2%	50.6%
Female	43.3%	46.8%	49.4%
Ethnicity			
White	58.4%	62.8%	66.1%
African American	39.4%	36.1%	31.5%
Native American	1.5%	1.9%	2.1%
Asian	1.8%	0.9%	2.1%
Pacific Islander	0.5%	0.4%	0.6%
Hispanic or Latino/a	9.5%	7.0%	10.1%
Source of Referral to VR			
Educational Institution (Secondary)	41.9%	13.0%	6.1%
Educational Institution (Post-Secondary)	2.0%	1.4%	2.0%
Medical Personnel	2.4%	7.7%	13.1%
Welfare Agency	1.4%	3.1%	2.4%
Community Rehabilitation Program	10.3%	13.1%	11.0%
Social Security Administration	0.5%	0.9%	1.6%
One-Stop Employment Center	1.0%	2.0%	2.4%
Self-Referral	21.7%	30.5%	34.5%
Other	18.9%	28.3%	26.9%

position within the community paying minimum wage or higher.

2.3.3. Wages earned and hours worked

Vocational rehabilitation counselors documented each employed participant's average wages earned and hours worked in a week at the time of case closure. Wages earned were gross wages, prior to the deduction of any taxes or other withholdings.

2.3.4. Level of education

The individual's level of education was also recorded at the time of case closure. Possible options included: (a) no formal schooling, (b) elementary education, (c) secondary education without a diploma, (d) special education certificate of participation, (e) high school graduate (or GED), (f) post-secondary education without a degree, (g) associates degree, (h) bachelor's degree, and (i) master's degree or higher.

2.3.5. Source of referral

RSA provided nine options for source of referral. These included: (a) educational institutions

(elementary or secondary), (b) educational institutions (post-secondary), (c) physician or other medical personnel or medical institutions, (d) welfare agency, (e) community rehabilitation programs, (f) Social Security Administration, (g) one-stop employment/training centers, (h) self-referral, and (i) other sources.

2.3.6. Living arrangement

The living arrangement for each applicant for services was entered at the time of application. Options for this variable included: (a) private residence (which could indicate living independently in one's own home or living with family or friends), (b) group home, (c) rehabilitation facility, (d) mental health facility, (e) nursing home, (f) correctional facility, (g) halfway house, (h) substance abuse treatment center, (i) homeless, and (j) other.

2.3.7. Reason for case closure

There were 15 reasons why a VR counselor might close an applicant's case. These include, but are not limited to: (a) achieved employment outcome, (b) unable

to locate, (c) disability too significant to benefit from VR services, and (d) failure to cooperate.

2.4. Research questions

The present study explored three research questions: (a) What is the prevalence of individuals with DD among applicants to VR services throughout the U.S. in 2013? (b) How do their demographic characteristics differ from those of applicants with only ID or only MI? and (c) Are the outcomes they achieve (e.g., VR acceptance rate, reasons for case closure, rate of employment, level of education, living arrangement) similar to those obtained by individuals who have only ID or only MI?

3. Results

3.1. Question 1: What is the prevalence of individuals with DD among applicants to VR services across the U.S.?

In 2013, 589,402 individuals applied for VR services throughout the US. Of these, 49,249 were diagnosed with ID and 9,747 were diagnosed with both ID and MI. Therefore, from the overall population of VR applicants, 1.7% were DD. When examining only individuals with ID, however, it was found that 19.8% also had some form of mental illness.

3.2. Question 2: How do the demographics of individuals with DD differ from individuals with only ID or MI?

As can be seen in Table 1, VR service applicants across the three comparison groups were similar regarding their ethnicity and gender, with the majority being white males. However, there were noticeable differences regarding age and source of referral. Specifically, individuals with DD and MI-only tended to be older (average ages 31.4 and 36.4 years old, respectively) than individuals with only ID (average age of 25.2 years). Moreover, individuals with ID only tended to be referred to VR by their secondary schools (41.9% of the cases compared to 13.0% for DD and 6.1% MI-only). Individuals with DD and MI-only, on the other hand, were more likely to refer themselves to VR (28.3% and 26.9%, respectively; compared to 18.9% for individuals with ID-only) or by medical personnel (7.7%, 13.1%, 2.4%).

3.3. Question 3: How do the outcomes achieved by individuals with DD differ from those achieved by individuals with only ID or MI?

Of the individuals with DD who applied to VR, 65.2% were determined to be eligible for services. For individuals with only ID or MI, these figures were 72.1% and 59.9% respectively. Although comparable to individuals with MI-only, individuals with DD were far less likely to have their cases closed because an employment outcome had been achieved (27.8%) than individuals with ID-only (36.0%). Moreover, when employed, individuals with DD worked fewer hours (22.7) and earned less wages (\$193.89) per week than did both the ID-only (24.2 hours and \$202.55) and MI-only (29.6 and \$317.15) groups.

Individuals with DD were also more likely to have their cases closed because their VR counselors deemed them to be too disabled to benefit from services (2.7%) than applicants with only ID (1.6%) or only MI (1.9%). Similarly, they were also more likely to be put in an institution (1.4% compared to 0.4% for individuals with only ID and 1.2% for individuals with only MI).

Of the three groups, individuals with DD were the least likely to be living in a private residence (82.1% compared to 93.6% for ID-only and 86.8% for MI-only) and more likely to be living in group homes (11.2% compared to 4.1% for ID-only and 4.3% for MI-only). Lastly, individuals with DD were the least likely to obtain a high school diploma. Specifically, 29.8% of individuals with DD did not complete high school compared to 22.5% for individuals with ID-only, and 17.6% for individuals with MI-only (see Tables 2 and 3).

4. Discussion

Individuals with ID who also have mental illnesses are far from being uncommon. In fact, estimates of their prevalence range up to 50% of the ID population (Einfeld et al., 2011). However, despite their pervasiveness, little is known about the vocational, residential, and educational outcomes these individuals achieve. By examining data provided by RSA for 2013, this preliminary investigation sought to explore this issue. In doing so, we identified several significant findings.

First, nearly 1 out of 5 individuals with ID (i.e., 19.8%) who apply for services from VR throughout

Table 2
Reasons for case closure for applicants with ID-only, MI-only, and dual diagnoses

	ID-Only	Dual Diagnosis	MI-Only
Acceptance Rate by VR	72.1%	65.2%	59.9%
Reasons for Case Closure			
Achieved an Employment Outcome	36.0%	27.8%	26.6%
Unable to Locate or Contact	17.2%	17.5%	22.3%
Disability Too Significant to Benefit from Services	1.6%	2.7%	1.9%
Refused Services	16.7%	19.8%	18.8%
Death	0.2%	0.3%	0.5%
Individual in Institution	0.4%	1.4%	1.2%
Transferred to Another Agency	2.4%	2.8%	0.5%
Failure to Cooperate	13.9%	14.5%	15.6%
No Disabling Condition	0.2%	0.0%	0.2%
No Impediment to Employment	0.2%	0.0%	0.6%
Transportation Not Feasible or Available	0.4%	0.5%	0.2%
Does Not Require VR Services	0.2%	0.1%	0.3%
Extended Services Not Available	0.2%	0.3%	0.1%
All Other Reasons	10.4%	12.1%	11.2%
Placed in Facility-Based Program (e.g. workshop)	0.1%	0.1%	0.0%

Table 3
Outcomes achieved by individuals with ID-only, MI-only, and dual diagnosed

	ID-Only	Dual Diagnosis	MI-Only
Employed	36.0%	27.8%	26.6%
Hours Worked Per Week	24.2 (11.0)	22.7 (11.0)	29.6 (10.7)
Earnings per Week	\$202.55 (118.70)	\$193.89 (119.81)	\$317.15 (217.03)
Level of Education Obtained			
No Formal Education	0.3%	0.4%	0.2%
Elementary School	1.9%	4.9%	1.9%
High School, No Diploma	20.3%	24.5%	15.5%
Special Education Certificate	32.0%	22.4%	2.2%
High School Diploma/GED	40.6%	40.4%	37.3%
Some Post-Secondary Education, No Degree	2.9%	4.5%	19.9%
Associates Degree	1.8%	2.5%	12.3%
Bachelor's Degree or Higher	0.2%	0.3%	10.7%
Place of Residence			
Private Residence	93.6%	82.1%	86.8%
Group Home	4.1%	11.2%	4.3%
Rehabilitation Facility	0.1%	0.2%	0.4%
Mental Health Facility	0.1%	0.3%	0.5%
Nursing Home	0.0%	0.1%	0.1%
Adult Correctional Facility	0.3%	0.8%	1.4%
Halfway House	0.2%	0.6%	1.1%
Substance Abuse Treatment Center	0.0%	0.1%	0.3%
Homeless/Shelter	0.3%	1.4%	2.8%
Other	1.4%	3.1%	2.2%

Notes. Standard deviations presented in parentheses. Private Residence could involve living independently, with family members, or other individuals.

the United States also had an MI. Although not within the 30% to 50% range identified by Einfeld and colleagues (2011), this represents a substantial proportion of the overall ID population. Still, the question arises, "Why is there a discrepancy between prevalence rates identified here and those by other studies?"

One explanation may be that schools simply don't refer many people with DD to VR; as a result, the population explored here is artificially truncated. This possibility is substantiated by research indicating the lack of knowledge and unease many teachers have regarding mental illnesses (Werner & Stawski, 2012).

Many teachers may also believe that individuals with DD and MI simply wouldn't benefit from services. This is borne out by two pieces of data offered within the present study.

The first is very few individuals in the DD and MI-only groups were referred to VR by their high schools (13.0% and 6.1%, compared to 41.9% for individuals who only had ID). As with the MI-only group, self-referral was the most common way individuals with DD applied for VR services. Second, more individuals from the DD group had their cases closed by VR because counselors deemed their conditions to be too severe to benefit from services than either of the comparison groups (2.7% compared to 1.6% for individuals with ID-only and 1.9% for individuals with MI-only). These findings seem to suggest the need to educate practitioners and parents regarding not only treatments and support needs for individuals with DD, but also the vocational outcomes individuals with disabilities are capable of attaining within their communities.

Of the individuals who applied to VR, 65.2% were found to be eligible for service, compared to 72.1% for applicants with only ID and 59.9% for applicants with only MI. The fact that fewer people with both ID and MI were found to be eligible than individuals who had only ID is puzzling. It would seem likely that the comorbidity of ID and MI would increase the probability of eligibility than having just ID. Closer examination for the reasons for case closure appears to explain this difference. Specifically, in addition to being deemed too disabled to benefit from services, applicants with DD were more likely to have their cases closed because they were placed in an institution (1.4%) or for refusing services (19.8%) than individuals with only ID (0.4% and 16.7%, respectively).

With regard to outcomes attained, individuals with DD mirrored the least desirable aspects from both comparison groups. For instance, individuals with DD were employed at a rate similar to individuals with only MI (27.8% and 26.6%, compared to 36.0% for individuals with ID-only); however, they worked fewer hours per week than individual with only ID (22.7 versus 24.2 hours, compared to 29.6 hours for the MI-only cohort). Further, individuals with DD were the least educated of the three groups. Specifically, 29.8% of individuals with DD failed to complete high school. This is compared to 22.5% for individuals with ID-only and 17.6% for individuals with MI-only.

These poor outcomes again seem to point to a lack of understanding of the unique educational and vocational

support needs of the DD population and the services they require to become successful. For example, as indicated by prior research (Bennett, 2014; Lennox et al., 2000; Warnke & Greenhill, 2014), practitioners must address issues arising from both conditions, rather than only the academic difficulties perceived to be caused by ID. Moreover, they need to be trained in the cognitive behavioral interventions found to be effective in mitigating anxiety, aggression, and other symptoms common among individuals with MI (Barrowcliff, 2007; Costello et al., 2007; Dagnan & Jahoda, 2006). Finally, practitioners must be aware of the potential side-effects psychotropic medications used to treat MI often create. Without better preparation of teachers and practitioners who work with individuals who have both ID and MI, the outcomes presented here will be unlikely to improve.

Certain limitations must be kept in mind when evaluating the data presented here. First, the prevalence of individuals with DD in the U.S. VR system may not be indicative of their actual prevalence throughout the country. It is very likely, given what we found regarding rates of referral from secondary schools that many adults with DD simply do not apply for VR services. However, even at 19.8%, applicants with DD represent a significant proportion of the ID VR population and cannot simply be ignored.

Secondly, the data presented here does not account for the interests and desires of individuals applying for VR services. Therefore, it may be that people with DD work and earn less than the ID-only and MI-only groups because they do not desire to work or earn more. Perhaps they are afraid of losing their government benefits. Future research will have to investigate this possibility.

More importantly, future research will need to investigate ways of improving the vocational, residential, and educational outcomes achieved by individuals with DD. Clearly, individuals with DD have support needs that are different than individuals with only ID or MI. As a result, strategies and services that work for applicants with ID or MI will not automatically work for individuals who have both conditions. Future research must identify and disseminate new methods of serving this very distinctive population.

5. Conclusions

Individuals with DD comprise a significant portion of applicants seeking VR services. However,

many questions linger regarding their prevalence, characteristics, and the outcomes they achieve. This preliminary study sought to explore these issues as well as lay the framework for future studies that may improve the services provided to this very distinctive population.

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