

Does type of provider organization affect fidelity to evidence-based supported employment?

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Abstract. *Objective:* To compare fidelity of implementation of supported employment in different types of provider organizations. *Methods:* Using opportunity sampling, a multi-state survey yielded a sample of 106 supported employment programs, including 33 located in community mental health centers (CMHCs), 18 located in psychosocial rehabilitation centers, 31 located in comprehensive rehabilitation centers, and 24 housed in other social service agencies. Program directors completed a telephone interview on the Quality of Supported Employment Implementation Scale (QSEIS), a 33-item supported employment fidelity scale.

Results: CMHC-based programs rated significantly higher on fidelity than programs housed in psychosocial rehabilitation or comprehensive rehabilitation centers. Integration with mental health treatment was the key factor differentiating the types of provider organizations.

Conclusions: Type of provider organization is an important factor in facilitating implementation of evidence-based principles of supported employment.

Keywords: Mental illness, supported employment, fidelity scale

1. Introduction

Supported employment is now well established as an evidence-based practice for people with severe mental illness (SMI) [5,13,37] on the strength of 9 randomized controlled trials and 4 quasi-experimental studies [5]. Furthermore, there has been increasing consensus among experts and practitioners on the principles of supported employment for people with SMI [18], as well as growing empirical support for these specific

principles [4,5]. Seven widely agreed-upon and empirically supported principles of supported employment are *eligibility based on consumer choice, integration with treatment, competitive employment as the goal, rapid job search, time-unlimited follow-along supports, attention to consumer preferences, and provision of benefits counseling* [1,5].

As an evidence-based practice gains popularity, it is crucial to have a method for identifying programs that are implementing it according to its key principles. This has given rise to the development of *fidelity scales*, defined as instruments measuring degree of implementation of a practice [7,30]. Fidelity scales have many practical and research uses, providing: a) documentation of the dissemination of a defined practice, b) op-

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erational guidelines to agencies seeking to implement a new practice, c) standards by which programs may monitor their progress, d) criteria for state agencies (e.g., mental health, vocational rehabilitation) to assess multisite projects to reward high performers and identify outliers needing technical assistance, and e) a tool for consumers and family members in making service choices and advocating for better services. The utility of fidelity scales is indicated by studies suggesting that programs implementing evidence-based practices with high fidelity generally have better outcomes [2,3, 24–26].

The current study examines the influence of *type of provider organization* on supported employment fidelity. Provider organization is important in that some types of organization may be more compatible with implementing high fidelity supported employment. Historical reasons, such as separate funding streams for mental health and vocational rehabilitation and ideologies about separation of these two service systems, help explain why many agencies continue to provide brokered supported employment services, despite converging evidence that provision of employment services through a separate agency from the mental health provider is not optimal [15]. Originally, supported employment was almost exclusively offered through comprehensive rehabilitation agencies operating independently of state mental health systems [39,40]. Following the Rehabilitation Act Amendments of 1986, freestanding psychiatric rehabilitation centers [14] began adapting their vocational services in order to receive newly available supported employment funding [28, 36]. In many states, community mental health centers (CMHCs) have become the primary providers of supported employment services for people with SMI [9]. All three types of provider organizations currently offer supported employment for people with SMI in various regions of the US.

The Quality of Supported Employment Implementation Scale (QSEIS) is a 33-item telephone-administered instrument measuring fidelity of supported employment for people with SMI. Its psychometric properties and factor structure have been examined with a five-state database [6]. McGrew and Griss [24] found higher competitive employment rates for programs rating higher on the QSEIS. The current report extends this earlier work by examining the variation in implementation of supported employment among different types of provider organizations.

2. Method

2.1. Sample description

Between 1998 and 2001, a national survey of 144 vocational programs for people with SMI was conducted. The sampling strategy consisted of a series of opportunity samples, yielding a range of geographically dispersed study sites, including 16 from Kansas, 20 from New Jersey, 17 from Maryland, 21 from North Carolina, 68 from New York, and 2 from other states. The methods used for identifying and contacting sites varied by state, as detailed elsewhere [6]. We obtained a 67% overall response rate: 59% for Kansas, 95% for New Jersey, 57% for Maryland, 54% for North Carolina, and 69% from New York. From the first four states, 72 (97%) of the programs indicated that they provided supported employment. Among the New York sites, 34 (50%) described their programs as supported employment, while 34 (50%) indicated that they offered some other form of vocational services. The 38 vocational programs in our sample not providing supported employment were excluded from the current report.

Among the 106 supported employment programs, 75 offered services exclusively to persons with SMI, while 31 were housed in comprehensive rehabilitation centers serving persons with a range of disabilities. The 75 SMI-specific programs were further divided into 33 CMHC-based and 42 non-CMHC-based supported employment programs. The parent organizations for the non-CMHC-based programs included 18 psychosocial rehabilitation (PSR) agencies, 15 general social services agencies, 4 freestanding programs, and 5 hospitals.

2.2. Survey instrument

The QSEIS¹ was developed in collaboration with a national advisory panel of supported employment experts, starting with a list of critical ingredients that centered on the principles noted above [8]. The resulting instrument included items borrowed from existing fidelity checklists, as well as newly developed items. The QSEIS includes 33 items, each rated on a five-point behaviorally-anchored scale, with a score of 5 indicating full implementation, 4 indicating moderate implementation, and the remaining scale points indi-

¹ A copy of the current version of the QSEIS, along with an interview guide, is available from the second author.

cating increasingly larger departures from the standards of supported employment. For example, S5 (*Rapid job search*) is scored “5” if first job application typically takes place within a month after program entry, and “1” if first job application typically takes place over a year after program entry. Scoring for the QSEIS consists of a simple linear summative scale, computing the mean for all 33 items. The QSEIS distinguishes well between supported employment and other vocational services and has demonstrated an adequate overall internal consistency (Cronbach’s $\alpha = 0.72$) [6].

For the purposes of interviewing, the QSEIS is organized into three sections: *Vocational Staffing* (6 items: VS1–VS6) is designed to assess the commitment of the agency to staffing supported employment programs at levels appropriate for providing quality services; *Organization* (11 items: O1–O11) measures the organizational features of the vocational program and its relationship to mental health treatment services; *Services* (16 items: S1–S14, IPS1, and IPS2) assesses the type of services offered by employment specialists and the way in which they are offered.

The QSEIS factor structure, however, does not follow the 3-component interview protocol.

Bond et al. [6] identified a five-factor structure of the QSEIS shown on Table 2: *Job Placement* consists of 7 items reflecting an exclusive focus on supported employment, avoiding lengthy pre-placement interventions, rapid search for permanent (rather than temporary) jobs commensurate with consumer preferences and skills, diversity of jobs, and staff time spent in the community; *Integration with Mental Health Treatment* consists of 4 items related to the integration of vocational services with mental health treatment, including shared location and integrated treatment team meetings and records; *Long-Term Support* consists of 5 items concerning availability of time-unlimited follow-along support, benefits counseling, job support planning, and long-term career development; *Teamwork* consists of 4 items reflecting the structure of the vocational program and caseload size; *Engagement/Enrollment* consists of 4 items concerning assertive outreach and rapid referral and admission to the program.

2.3. Interview procedures

This study was approved by the IUPUI Institutional Review Board. The general procedures were similar for all surveys. The vocational program directors at potential sites were notified by mail or at a state meeting about the opportunity to participate in a survey. Each

director then was contacted by telephone and asked to participate in the study. Upon receiving consent, surveys were conducted via telephone interviews with the vocational program director (or occasionally another knowledgeable staff member) using the QSEIS.

The QSEIS is administered in a semi-structured format, using an interview guide. Two fidelity assessors trained on the standard administration procedures for the QSEIS were present for each interview and independently rated the items. During the telephone call, one assessor conducted the interview, while the second recorded information and asked supplemental questions, as appropriate. On average, each interview took approximately 90 minutes to complete. Each assessor independently scored the QSEIS. Subsequently, the assessors discussed each item rating and reached consensus. A high level of interrater agreement is obtained using these procedures [8].

2.4. Data analysis

Data analyses were conducted at the item, factor score, and total scale levels. The total score was calculated as the mean of all 33 items, and the factor scores calculated in similar fashion. For the item analyses, missing item ratings were excluded; for the total scale and factor score levels, within-site mean substitution was used for missing data. The missing data rate was 2.5%; most of the missing values were attributable to 3 items added during pilot work.

To examine variation according to type of provider agency among supported employment programs, we defined four groups: CMHC-based programs (“CMHC”: $n = 33$), programs located in psychosocial rehabilitation centers (“PSR”: $n = 18$), comprehensive rehabilitation center-based programs (“Comp Rehab”: $n = 31$), and other non-CMHC-based programs (“Other”: $n = 24$). We compared these four groups on the QSEIS measures using univariate one-way analyses of variance with Tukey’s post hoc t tests. For significant differences on the total and factor scores we also report effect sizes measured by the d statistic [23]. As further aid to interpretation, we used factor scores of 4.0 or higher as the minimum threshold for “moderate implementation.”

3. Results

Among all programs, 62%, 14%, and 24% identified themselves as serving only urban areas, only rural areas,

and both urban and rural areas, respectively. Programs had been in operation an average of 5.8 years ($SD = 3.8$). The median number of full-time equivalent staff was 3 and the median number of consumers served was 41. Overall, programs averaged 13 clients per staff worker (median = 12).

Average per-staff caseload sizes varied somewhat according to type of provider. As shown in Table 1, the mean staff caseload size was less than 19 for 73% of **CMHC**, 86% of **PSR**, 89% of **Comp Rehab**, and 100% of **Other** programs. The caseload size averaged 16.1 ($SD = 8.2$) for **CMHC**, 12.4 ($SD = 7.5$) for **PSR**, 9.5 ($SD = 8.8$) for **Comp Rehab**, and 12.1 ($SD = 5.3$) for **Other**. One of the **CMHC** programs had an average caseload above 40. Even excluding this outlier, **Comp Rehab** had lower caseloads than **CMHC** ($F(3, 86) = 2.96, p < 0.05$; Tukey's post hoc test, $p < 0.05$).

As shown in Table 2, **CMHC** programs were rated significantly higher than **PSR** and **Comp Rehab** programs on the total QSEIS ($d = 0.89$ and $.96$, respectively). Significant differences were found between groups on 4 of the 5 factors (Job Placement, Integration with Mental Health Treatment, Long-Term Support, and Engagement/Enrollment) and on 13 items. At the factor level, the **CMHC** programs were significantly higher than **Comp Rehab** programs on Integration with Mental Health Treatment ($d = 1.14$).

CMHC programs, on average, achieved at least moderate implementation (> 4.0) on Job Placement (4.12), Long-Term Support (4.32), and Teamwork (4.26), while falling a little short on Integration with Mental Health Treatment (3.87) and Engagement/Enrollment (3.98). **CMHC** programs were rated consistently high on items relating to an emphasis on permanent jobs, provision for multiple jobs, diversity of job options, benefits counseling, individualized follow-along support, and exclusive vocational focus by employment specialists. Conversely, most **CMHC** programs failed to achieve full implementation on items related to providing vocational services in community settings, avoiding prevocational work readiness activities, attendance at treatment team meetings, assertive outreach, and integration of vocational and treatment records.

PSR programs, on average, achieved at least moderate implementation on Long-Term Support (4.40), and Teamwork (4.10), while falling far below the norm on Job Placement (3.68), Integration with Mental Health Treatment (3.10) and Engagement/Enrollment (3.36). At the item level, **PSR** programs rated especially low

(< 3.0) in avoiding prevocational work activities, maintaining "zero exclusion" for program admission, not requiring case manager approval for admission, and maintaining a single employment specialist for the duration of services, in addition to 3 of the 4 Integration with Mental Health Treatment factor items.

Comp Rehab programs, on average, achieved close to or above moderate implementation on Job Placement (3.99), Long-Term Support (3.92), and Teamwork (4.31), while falling far below the norm on Integration with Mental Health Treatment (2.68) and Engagement/Enrollment (3.41). At the item level, **Comp Rehab** programs rated especially low (< 3.0) in avoiding prevocational work activities, providing long-term career planning, and not requiring case manager approval for admission, in addition to 3 of the 4 Integration with Mental Health Treatment factor items.

Figure 1 reports a gradient of implementation of supported employment as measured by the QSEIS, based on the a priori global cutoff scores [6]. While 33% of the **CMHC** programs were classified as "approaching full implementation" of supported employment, 6% of **PSR**, 3% of **Comp Rehab**, and 13% of **Other** programs achieved that level. The first two of the 3 pairwise comparisons with **CMHC** were statistically significant ($X^2 = 4.99, p < 0.05$, $X^2 = 9.51, p < 0.01$, $X^2 = 3.25$, n.s., respectively). Using a criterion of 4.0, 61% of the **CMHC**, 28% of the **PSR**, 23% of **Comp Rehab**, and 46% of **Other** programs achieved "moderate" implementation. The comparison was significant for **CMHC** vs. **PSR** ($X^2 = 5.02, p < 0.05$) and for **CMHC** vs. **Comp Rehab** ($X^2 = 9.48, p < 0.01$).

4. Discussion

CMHC-based supported employment programs clearly achieved the highest overall fidelity. Although the differences were sharpest for integration with mental health treatment, all of the non-CMHC-based programs had notable weaknesses on other fidelity dimensions as well. These weaknesses appear to follow from their respective organizational structures and program philosophies. Thus, the findings suggest that type of provider organization influences the capacity for implementing high fidelity supported employment programs. Thus, type of provider organization is a crucial factor in implementing high-fidelity supported employment programs, but other factors also are important [34].

The finding that CMHCs more often achieve integration of supported employment with mental health

Table 1
Frequency (%) of Mean Caseload Size

Mean Caseload	Supported Employment			
	CMHC <i>n</i> = 0	PSR <i>n</i> = 14	Comp Rehab <i>n</i> = 28	Other <i>n</i> = 19
<10	6 (20.0%)	5 (35.7%)	16 (57.1%)	5 (26.3%)
10–12.9	5 (16.7%)	3 (21.4%)	6 (21.4%)	3 (15.8%)
13–15.9	7 (23.3%)	3 (21.4%)	3 (10.7%)	5 (26.3%)
16–18.9	4 (13.3%)	1 (7.1%)	—	6 (31.6%)
19–21.9	4 (13.3%)	1 (7.1%)	—	—
22–24.9	1 (3.3%)	—	1 (3.6%)	—
≥ 25	3 (10.0%)	1 (7.1%)	2 (7.2%)	—

treatment is not surprising, although we are unaware of any prior study that documents this point. There are important implications. The lack of such integration severely compromises the effectiveness of vocational services [17,21,31]. Integration with mental health treatment has been the supported employment principle for which adoption has been the slowest [9,19,40, 41]. The problem is clearly not limited to the US; if anything, mental health and rehabilitation is even more separated in other countries [12,27,43]. These survey results suggest that one likely reason for slow implementation of this principle is the influence of funding agencies in encouraging or requiring separate agencies and brokered services. In particular, the dictates of fee-for-service funding on comprehensive rehabilitation programs [40] can constrict flexibility in how employment support staff manages authorized time. Thus, attending meetings of the mental health support team can be viewed as a lower priority compared to providing direct employment supports. For decades, mental health planners have noted the inherent ineffectiveness resulting from the fragmentation and compartmentalization of the social service system [33]; the current study's findings are consistent with this observation.

PSR programs rated low in job placement activities, reflecting their emphasis on job readiness activities and use of transition employment and agency-operated businesses. These emphases are antithetical to the rapid job search approach stressing individualized job search, which is a hallmark of supported employment [4]. Historically, PSR agencies have organized their services around center-based activities, despite the evidence that such a culture is contrary to high rates of competitive employment [10,11,31].

In addition to the structural barriers to integration inherent in the provision of supported employment programs through comprehensive rehabilitation agencies, other areas of low fidelity may reflect the type of funding on which these agencies depend. Comprehensive rehabilitation programs have fidelity scores in the area

of job placement comparable to CMHC-based programs, reflective of the primary employment services mission of these agencies. However, comprehensive rehabilitation programs generally had low fidelity scores in engagement/enrollment. The rules governing the primary funding sources on which comprehensive rehabilitation centers depend may have unintended consequences on service provision in key engagement areas, such as by discouraging sufficient attention to consumer choice [42] and also discouraging the reopening cases after job loss [32].

It should be noted that even in CMHC-based programs, only 33% of programs achieved high fidelity. Clearly, funding is not sufficient to achieve high fidelity. Systematic training and monitoring in evidence-based practice and state-level standards for program implementation are two other factors that are hypothesized to contribute to higher fidelity [29,35].

Whatever the reason for lower fidelity, the key question concerns the implications for helping clients achieve competitive employment. Randomized controlled trials strongly favor competitive employment rates for CMHC-based supported employment to supported employment provided by comprehensive rehabilitation centers [16,20].

The descriptive data regarding average caseload size are noteworthy in light of the strong association between caseload size and costs of supported employ-

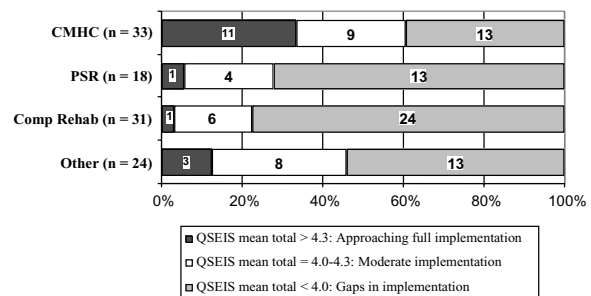


Fig. 1. Number (%) of Programs Achieving SE Implementation.

Table 2
QSEIS Mean Comparison between SE Programs

QSEIS Factor and Item	CMHC $\bar{n} = 33$ Mean (SD)	PSR $\bar{n} = 18$ Mean (SD)	Comp Rehab $\bar{n} = 31$ Mean (SD)	Other $\bar{n} = 24$ Mean (SD)	F
Job Placement	^c4.12 (0.62)	3.68 (0.76)	^c3.99 (0.63)	3.46 (0.79)	5.14 **
VS1: Supported employment is the only voc program offered	^c 3.79 (1.32)	3.35 (1.66)	3.00 (1.80)	2.38 (1.36)	3.85 *
S1: Vocational services are provided in natural community setting	^b 3.70 (1.29)	3.61 (1.38)	^a 4.55 (0.85)	3.21 (1.38)	6.02 **
S3: Prevocational work-readiness activities are not part of the program	3.48 (1.50)	2.47 (1.33)	2.97 (1.79)	2.92 (1.69)	1.36
S5: Search for competitive jobs occurs rapidly after program entry	^a 4.19 (0.93)	3.78 (0.81)	^a 4.32 (0.79)	3.39 (1.16)	5.30 **
S6: Employer contacts begin with a focus on consumer job preferences and needs	4.18 (1.18)	3.72 (1.49)	3.81 (1.35)	3.87 (1.39)	0.64
S7: Employment Specialists (ES s) provide diverse job options in multiple settings	4.76 (0.66)	4.35 (1.11)	4.43 (0.86)	4.52 (0.75)	1.22
IPS1: ES s offer competitive jobs with permanent status	4.66 (0.77)	4.47 (1.07)	4.71 (0.69)	4.19 (1.17)	1.61
Integration with Mental Health Treatment	^b3.87 (1.22)	3.10 (1.14)	2.68 (0.82)	3.13 (1.19)	6.58 ***
O1: Single agency provides treatment and vocational services at the same location	^a ^b 4.27 (1.38)	2.50 (1.79)	^c 1.87 (1.36)	3.26 (1.71)	14.17 ***
O2: ES s attend regular clinical treatment team meetings at least weekly	3.42 (1.64)	2.94 (1.63)	2.58 (0.96)	2.91 (1.50)	1.87
O3: ES s have frequent contact with consumer s treatment team	4.33 (1.27)	4.11 (1.18)	3.55 (1.21)	3.50 (1.29)	3.17 *
O11: Vocational records are kept in same files as treatment records	3.45 (1.52)	2.83 (1.34)	2.71 (1.42)	2.92 (1.35)	1.66
Long-Term Support	4.32 (0.67)	4.40 (0.50)	^c3.92 (0.82)	4.48 (0.56)	3.85 *
S4: Program provides individualized benefits/entitlement counseling to consumer	^b 4.82 (0.46)	^b 4.78 (0.65)	4.00 (1.39)	4.63 (1.01)	4.54 **
S8: All consumers are invited to consider long-term career planning	^b 3.91 (1.31)	3.78 (1.56)	^c 2.77 (1.61)	4.17 (1.09)	5.52 **
S9: An explicit support plan is designed for each employed consumer	3.97 (1.45)	4.39 (1.20)	4.17 (1.37)	4.35 (1.15)	0.55
S10: Individualized follow-along supports are available to consumer and employer	4.64 (0.70)	4.50 (0.86)	4.26 (0.96)	4.48 (0.79)	1.12
S11: All consumers receive comprehensive follow-along support for >1 year	4.27 (1.35)	4.56 (0.70)	4.42 (1.29)	4.79 (0.83)	1.02
Teamwork	4.26 (0.98)	4.10 (1.17)	4.31 (0.72)	4.76 (0.27)	2.63
VS3: ES s caseloads do not exceed 16 consumers	4.58 (0.61)	4.67 (0.59)	4.81 (0.54)	4.70 (0.47)	0.91
VS6: Program has at least 3 vocational staff members to function as a team	4.18 (1.31)	3.89 (1.53)	4.65 (1.02)	4.74 (0.54)	2.74 *
O4: ES s function as a team, rather than a group of individual practitioners	4.18 (1.55)	4.06 (1.51)	4.06 (1.44)	4.67 (0.76)	1.08
O5: Team members meet with their supervisor at least weekly	4.09 (1.49)	3.78 (1.80)	^c 3.71 (1.62)	4.92 (0.28)	3.73 *

Table 2, continued

<i>Engagement/Enrollment</i>	<i>3.98 (0.73)</i>	<i>3.36 (0.81)</i>	<i>3.41 (1.17)</i>	<i>3.38 (1.07)</i>	<i>2.87 *</i>
O7: Program has "zero exclusion" criteria for admission	^a 3.97 (1.40)	2.67 (1.68)	3.55 (1.59)	3.42 (1.59)	2.78 *
O10: Approval from case manager is not required for referral to the program	3.56 (1.71)	2.35 (1.84)	2.47 (1.80)	2.87 (1.69)	2.29
S12: ES s help consumers end jobs when appropriate and then find new jobs	^a 4.58 (0.71)	4.44 (0.86)	4.03 (1.30)	3.58 (1.44)	4.19 **
S13: Assertive outreach is used to engage/re-engage consumers	3.70 (1.26)	3.83 (0.99)	3.74 (1.51)	3.67 (0.92)	0.07
Non-Factor Items					
VS2: Vocational team currently operates at full staffing	4.64 (0.86)	4.33 (0.91)	4.61 (0.72)	4.75 (0.61)	1.03
VS4: Single ES is assigned to each consumer for the duration of services	^a 4.03 (0.98)	2.94 (1.59)	3.29 (1.53)	3.17 (1.40)	3.30 *
VS5: ES s focus on vocational services only	4.52 (0.71)	4.39 (0.61)	4.10 (0.90)	4.50 (0.59)	1.98
O6: All prospective clients are given information on SE	3.67 (1.27)	3.44 (1.62)	3.61 (1.45)	4.04 (1.16)	0.76
O8: Consumers can receive immediate services upon their interest in the program	3.70 (1.63)	3.94 (1.43)	3.74 (1.67)	4.13 (1.26)	0.44
O9: VR approval for SE services is given within 2 weeks or is not required	4.64 (1.04)	4.65 (0.70)	4.63 (0.76)	4.67 (0.76)	0.01
S2: Initial vocational assessment is completed within 1 week	3.56 (1.23)	3.35 (1.32)	3.52 (1.15)	3.46 (1.35)	0.10
S14: Job support groups are offered	2.48 (1.73)	2.33 (1.81)	^c 2.23 (1.69)	3.58 (1.59)	3.36 *
IPS2: All employed consumers receive individualized follow-along support	4.79 (0.60)	4.82 (0.73)	4.65 (1.05)	4.83 (0.38)	0.38
QSEIS Total Score	^{a,b} 4.09 (0.38)	3.76 (0.35)	3.74 (0.35)	3.91 (0.40)	5.68 **

CMHC: CMHC-based SE programs for consumers with SMI

PSR: Psychosocial rehabilitation center-based supported employment programs for consumers with SMI

CompRehab: SE programs for persons with all types of disabilities

Other: Other non-CMHC-based supported employment programs for consumers with SMI

^aDifferent from PSR^bDifferent from Comp Rehab^cDifferent from Other^{*}p < .05; ^{**}p < .01; ^{***}p < .001

ment [22]. The very low client-staff ratio found in comprehensive rehabilitation programs, less than 60% that for CMHC-based programs, suggests correspondingly high per-client costs, despite the low fidelity to evidence-based supported employment. Regardless of organizational type, most programs report a substantially lower client-staff ratio than the 25:1 ratio recommended by Becker and Drake [1]. From a cost perspective, the optimal ratio (including the circumstances under which this ratio is appropriate) is an important empirical question.

Study limitations. A major limitation of this survey was the lack of independent confirmation of the ratings obtained through telephone interviews with vocational program directors. The variability in responses provides indirect evidence that program directors were giving differential responses and consequently not uniformly socially desirable responses. Nevertheless, the validity of responses remains an issue requiring further study. Based on extensive experience with on-site fidelity assessments and self-reported fidelity, we assume that any bias in fidelity reported by the program directors was in the direction of a more favorable image of their program services [38].

A second set of limitations owes to the opportunity sampling methods used. Sampling bias may have occurred at both stages of sampling. At the first stage, the sampling of states was not random. The sites we surveyed may not be "typical" supported employment programs in that these particular states that may have been especially committed to improving their vocational services. Within states, we sought to interview all programs within the lists provided. However, volunteer bias is likely in the 4 states in which we obtained less than 70% of the identified programs.

5. Conclusion

If we are to succeed in implementing evidence-based practices such as supported employment, it is critical that organizational structures support these practices. CMHCs appear to be best suited to implementing evidence-based supported employment. Programs providing supported employment services to persons with SMI should carefully evaluate their service design in terms of its fidelity to evidenced-based principles of supported employment. It is critically important particularly that comprehensive rehabilitation centers and PSR programs attempting to provide supported employment recognize the challenges their program de-

signs present in serving persons with SMI. Corrective actions to ensure fidelity to identified supported employment principles, such as fully integrating their employment services with needed mental health services, must be taken.

Acknowledgements

Work on this paper was partly supported by Rehabilitation Services Administration Grant H128U70003 to Virginia Commonwealth University Rehabilitation Research and Training Center.

References

- [1] D.R. Becker and R.E. Drake, *A Working Life for People with Severe Mental Illness*, New York: Oxford Press, 2003.
- [2] D.R. Becker, J. Smith, B. Tanzman, R.E. Drake and T. Tremblay, Fidelity of supported employment programs and employment outcomes, *Psychiatric Services* **52** (2001), 834–836.
- [3] D.R. Becker, H. Xie, G.J. McHugo, J. Halliday and R.A. Martinez, What predicts supported employment program outcomes? *Community Mental Health Journal* **42** (2006), 303–313.
- [4] G.R. Bond, Principles of the Individual Placement and Support model: Empirical support, *Psychiatric Rehabilitation Journal* **22**(1) (1998), 11–23.
- [5] G.R. Bond, Supported employment: Evidence for an evidence-based practice, *Psychiatric Rehabilitation Journal* (2004), 345–359.
- [6] G.R. Bond, K. Campbell, L.J. Evans, R. Gervery, A. Pascaris, S. Tice et al., A scale to measure quality of supported employment for persons with severe mental illness, *Journal of Vocational Rehabilitation* **17** (2002), 1–12.
- [7] G.R. Bond, L. Evans, M.P. Salyers, J. Williams and H.K. Kim, (2000). Measurement of fidelity in psychiatric rehabilitation, *Mental Health Services Research* **2**(2) (2000), 75–87.
- [8] G.R. Bond, J. Picone, B. Mauer, S. Fishbein and R. Stout, The Quality of Supported Employment Implementation Scale, *Journal of Vocational Rehabilitation* **14** (2000), 201–212.
- [9] G.R. Bond, K.M. Vogler, S.G. Resnick, L.J. Evans, R.E. Drake and D.R. Becker, Dimensions of supported employment: Factor structure of the IPS Fidelity Scale, *Journal of Mental Health* **10** (2001), 383–393.
- [10] K.A. Connors, R.S. Graham and R. Pulso, Playing the store: Where is the vocational in psychiatric rehabilitation? *Psychosocial Rehabilitation Journal* **10**(3) (1987), 21–33.
- [11] J.A. Cook and L. Razzano, Discriminant function analysis of competitive employment outcomes in a transitional employment program for persons with severe mental illness, *Journal of Vocational Rehabilitation* **5** (1995), 127–140.
- [12] M. Corbière, G.R. Bond, E. Goldner and T. Ptasiński, The fidelity of supported employment implementation in Canada and the United States, *Psychiatric Services* **56** (2005), 1444–1447.
- [13] R.E. Crowther, M. Marshall, G.R. Bond and P. Huxley, Helping people with severe mental illness to obtain work: Systematic review, *British Medical Journal* **322** (2001), 204–208.

- [14] J. Dincin, Psychiatric rehabilitation, *Schizophrenia Bulletin* **1** (1975), 131–147.
- [15] R.E. Drake, D.R. Becker, G.R. Bond and K.T. Mueser, A process analysis of integrated and non-integrated approaches to supported employment, *Journal of Vocational Rehabilitation* **18** (2003), 51–58.
- [16] R.E. Drake, G.J. McHugo, R.R. Bebout, D.R. Becker, M. Harris, G.R. Bond et al., A randomized clinical trial of supported employment for inner-city patients with severe mental illness, *Archives of General Psychiatry* **56** (1999), 627–633.
- [17] R.E. Drake, G.J. McHugo, D.R. Becker, W.A. Anthony and R.E. Clark, The New Hampshire study of supported employment for people with severe mental illness: Vocational outcomes, *Journal of Consulting and Clinical Psychology* **64** (1996), 391–399.
- [18] L.J. Evans and G.R. Bond, Expert ratings on the critical ingredients of supported employment for people with severe mental illness, *Psychiatric Rehabilitation Journal* (in press).
- [19] R. Gurvey, A. Parrish and G.R. Bond, Survey of exemplary supported employment programs for persons with psychiatric disabilities, *Journal of Vocational Rehabilitation* **5** (1995), 115–125.
- [20] P.B. Gold, N. Meisler, A.B. Santos, M.A. Carnemolla, O.H. Williams and J. Kelleher, Randomized trial of supported employment integrated with assertive community treatment for rural adults with severe mental illness, *Schizophrenia Bulletin* **32** (2006), 378–395.
- [21] E.A. Gowdy, L.S. Carlson and C.A. Rapp, Practices differentiating high-performing from low-performing supported employment programs, *Psychiatric Rehabilitation Journal* **26** (2003), 232–239.
- [22] E. Latimer, P. Bush, D.R. Becker, R.E. Drake and G.R. Bond, How much does supported employment for the severely mentally ill cost? An exploratory survey of high-fidelity programs, *Psychiatric Services* **55** (2004), 401–406.
- [23] M.W. Lipsey, *Design sensitivity*, Newbury Park, CA: Sage, 1990.
- [24] J. McGrew and M. Griss, Concurrent and predictive validity of two scales to assess the fidelity of implementation of supported employment, *Psychiatric Rehabilitation Journal* **29** (2005), 41–47.
- [25] J.H. McGrew, G.R. Bond, L.L. Dietzen and M.P. Salyers, Measuring the fidelity of implementation of a mental health program model, *Journal of Consulting and Clinical Psychology* **62** (1994), 670–678.
- [26] G.J. McHugo, R.E. Drake, G.B. Teague and H. Xie, Fidelity to assertive community treatment and client outcomes in the New Hampshire Dual Disorders Study, *Psychiatric Services* **50** (1999), 818–824.
- [27] K. McLaren, *Work in Practice*. Wellington, NZ: Platform, 2004.
- [28] V. Mellen and S. Cobb, The social center for psychiatric rehabilitation: Adapting to change, *American Rehabilitation* **21** (1995), 24–31.
- [29] L.L. Moser, N.L. DeLuca, G.R. Bond and A.L. Rollins, Implementing evidence based psychosocial practices: Lessons learned from statewide implementation of two practices, *CNS Spectrums* **9** (2004), 926–936.
- [30] C.T. Mowbray, M. Holder, G.B. Teague and D. Bybee, Fidelity criteria: Development, measurement, and validation, *American Journal of Evaluation* **24** (2003), 315–340.
- [31] K.T. Mueser, R.E. Clark, M. Haines, R.E. Drake, G.J. McHugo, G.R. Bond et al., The Hartford study of supported employment for persons with severe mental illness, *Journal of Consulting and Clinical Psychology* **72** (2004).
- [32] G. Revell, M. West and Y. Cheng, Funding supported employment: Are there better ways? *Journal of Disability Policy Analysis* **9** (1998), 59–79.
- [33] L.I. Stein and M.A. Test, An alternative to mental health treatment. I: Conceptual model, treatment program, and clinical evaluation, *Archives of General Psychiatry* **37** (1980), 392–397.
- [34] W.C. Torrey, R.E. Drake, L. Dixon, B.J. Burns, A.J. Rush, R.E. Clark et al., Implementing evidence-based practices for persons with severe mental illness, *Psychiatric Services* **52** (2001), 45–50.
- [35] W.C. Torrey, D.W. Lynde and P. Gorman, Promoting the implementation of practices that are supported by research: The National Implementing Evidence-Based Practice Project, *Child and Adolescent Psychiatric Clinics of North America* **14** (2005), 297–306.
- [36] W.M. Trochim, J.A. Cook and R.J. Setze, Using concept mapping to develop a conceptual framework of staff's views of a supported employment program for individuals with severe mental illness, *Journal of Consulting and Clinical Psychology* **62** (1994), 766–775.
- [37] E.W. Twamley, D.V. Jeste and A.F. Lehman, Vocational rehabilitation in schizophrenia and other psychotic disorders: A literature review and meta-analysis of randomized controlled trials, *Journal of Nervous and Mental Disease* **191** (2003), 515–523.
- [38] K.M. Vogler, *A Fidelity Study of the Indiana Supported Employment Model for Individuals with Severe Mental Illness*, Unpublished dissertation, Indiana University-Purdue University Indianapolis, Indianapolis, IN, 1998.
- [39] P. Wehman and M.S. Moon, eds, *Vocational Rehabilitation and Supported Employment*, Baltimore: Paul Brookes, 1988.
- [40] P. Wehman and G. Revell, Supported employment: A decade of rapid growth and impact, *American Rehabilitation* **24**(1) (1998), 31–43.
- [41] P. Weinstock and L. Toms-Barker, Mental health and vocational rehabilitation collaboration: Local strategies that work, *Psychosocial Rehabilitation Journal* **18**(4) (1998), 35–50.
- [42] M. West, A. Johnson, A. Cone, A. Hernandez and G. Revell, Extended employment support: Analysis of implementation and funding issues, *Education and Training of the Mentally Retarded/Developmentally Disabled* **33** (1997), 357–366.
- [43] K. Wong, L.P. Chiu, S.W. Tang, H.K. Kan, C.L. Kong, H.W. Chu et al., Vocational outcomes of individuals with psychiatric disabilities participating in a supported competitive employment program, *Work* **14** (2000), 247–255.