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Supported employment versus traditional vocational rehabilitation for individuals with severe mental illness: a three-year study

Key Messages

1. We developed an innovative Integrated Supported Employment (ISE) service protocol, which amplifies the effect of the Individual Placement and Support (IPS) model by the addition of work-related social skills training.
2. Participants in the ISE outperformed those in the IPS and traditional vocational rehabilitation (TVR) with respect to employment rate, job tenure, and some psychological outcomes, when assessed 39 months after admission to such services.
3. Self-efficacy was improved in ISE and IPS (but not TVR) participants after receiving service for 18 months.
4. The long-term employment rate of participants was higher in the ISE than the IPS programme.
5. The ISE is potentially applicable to other Chinese communities including mainland China.

Introduction

Work has long been regarded as a potential contributor and a tool for the treatment of mental illness. Returning to work was regarded as a significant factor for recovery by health care professionals in Hong Kong.¹ However, only 20.3% (174 000 people) of those with mental illness in Hong Kong were actively employed or actively participated in economic activities.

Traditional vocational rehabilitation (TVR) adopts a step-wise approach, which offers pre-vocational training at the beginning. Participants are paid less than the minimum wage, and rates for competitive employment are usually less than 20%. Owing to the limitations of TVR, a supported employment service is recommended.

We developed an Integrated Supported Employment (ISE) programme, which amplifies the vocational outcomes of the Individual Placement and Support (IPS) model, by the addition of work-related social skills training (WSST). Other than the WSST module,² on-going support is also provided. After 15 months of service, ISE participants had significantly higher employment rates (78.8% vs 53.6%) and longer job tenure (23.84 vs 12.34 weeks) than those receiving IPS.³

Studies regarding the influence of such programmes on self-efficacy, psychiatric symptom control, quality of life, and psychosocial well being are limited, as are studies on long-term vocational outcomes of supported employment in a non-US culture. We therefore examined long-term vocational and psychological outcomes of ISE in Hong Kong for up to 3 years. To facilitate the understanding of both short- and long-term outcomes, data collected in the previously funded project HSRF-S121014 were included where necessary.

This study aimed to compare the long-term influence of ISE and IPS in terms of vocational (job satisfaction, job tenure, job stress coping, and job mobility) and psychological (symptom control, relapse rate, self-efficacy, and subjective personal well being) outcomes. The hypothesis was that the group receiving ISE would have better vocational and psychological outcomes than the groups receiving IPS or TVR.

Methods

This randomised controlled trial was conducted from September 2005 to August 2007. The subjects were randomly assigned to three different vocational services: TVR, IPS, and ISE.

Traditional vocational rehabilitation involves comprehensive vocational assessment and pre-vocational training carried out in vocational rehabilitation centres.

Individual Placement and Support represents a synthesis and standardisation of eight principles of support employment⁴: (1) a single-minded focus on

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competitive employment; (2) eligibility for services being based solely on client choice, with no exclusions related to work readiness, substance use problems, lack of motivation, treatment non-compliance, etc; (3) a rapid job search upon programme admission, using the 'place then train' approach; (4) attention to client preferences in the job search, rather than dependence on job availability; (5) close integration between employment services and the mental health treatment team; (6) ongoing, individualised support and job training after the clients obtain employment; (7) systematic benefits counselling; and (8) consultation with the employer or job supervisor including advocacy accommodations.

Integrated Supported Employment combined IPS and 10 sessions of WSST. Training of social skills was provided to ISE participants before they obtained employment. A problem-solving approach was used to help participants handle interpersonal conflicts throughout the follow-up period.

Between 2003 and 2006, 189 participants were randomly assigned to TVR (n=66), IPS (n=65), and ISE (n=58) [Table 1 and Fig]. The subjects were recruited from three community mental health service units and two day hospitals, based on the following selection criteria: (1) severe mental illness (schizophrenia, schizo-affective disorder, bipolar disorder, recurrent major depression, or borderline personality disorder), (2) at least 2 years of major role dysfunction, (3) medium-to-high functioning capacity and free from serious role dysfunction in the past 3 months, (4) unemployed, (5) willing and cognitively competent to give informed consent, (6) no memory impairment, learning disorder and neurological or medical illness that would preclude working or participating in research interviews, (7) completion of primary education, and (8) a desire to work. The diagnosis of the participants was based on medical records kept by certified psychiatrists in Hong Kong according to DSM-IV criteria. Informed consent was

obtained from each participant.

The outcome measures included the vocational (employment rate, job tenure, salary, and number of job terminations) and psychological aspects. The following psychometrically valid instruments were used: (1) medical history, work history, and demographic data, (2) Employment Outcome Checklist, (3) the 21-item Chinese Job Stress Coping Scale, (4) the Chinese Job Termination Checklist, (5) Personal Well Being Index, (6) the Chinese General Self-efficacy Scale, and (7) the Chinese Job Satisfaction Scale.

From the commencement of the 3-month initial service provision, both ISE and IPS programmes lasted 39 months, whereas the TVR programme lasted 15 months. Assessments were conducted at baseline and month 7, 11, 15, 21, 27, 33, and 39 by an independent, trained, and blinded registered occupational therapist (Fig).

Three registered occupational therapists as employment specialists implemented the ISE and IPS protocols. Social workers (who referred cases to our study) were also involved. Prior training for employment specialists was provided by Prof Gary Bond, Dr Robert Drake, Ms Debbie Becker, and the author. The 15-item supported employment fidelity scale was adopted to ensure the quality of our service. The PI met with the employment specialists at month 1, 4, 9, 15, 21, 27, and 33 and used the scale to check adherence of the two protocols to the principles of supported employment. The scores of IPS participants ranged from 66 to 68 out of 75 (88-91%) and those of ISE participants ranged from 65 to 68 out of 75 (87-91%). Both protocols demonstrated good fidelity to supported employment implementation. For TVR participants, services were provided by staff members of service centres that provided sheltered vocational training in the community. Employment specialists met with the participants mainly in their workplace or restaurants close to their workplace. If face-to-face meeting could not be

Table 1. Participant characteristics of Integrated Supported Employment (ISE), Individual Placement and Support (IPS), and traditional vocational rehabilitation (TVR) groups

Characteristics	No. (%) of participants			χ^2	df	P value
	ISE (n=58)	IPS (n=65)	TVR (n=66)			
Mean±SD age (years)	34.12±8.68	34.08±9.01	36.50±7.57	-	-	0.195; F-value, 1.647 (2, 186)
Gender				1.570	2	0.456
Male	26 (44.8)	36 (55.4)	31 (47.0)			
Female	32 (55.2)	29 (44.6)	35 (53.0)			
Education				15.272	6	0.018
Below primary	0 (0)	0 (0)	1 (1.5)			
Primary	4 (6.9)	3 (4.6)	12 (18.2)			
Secondary	47 (81.0)	49 (75.4)	50 (75.8)			
Post-secondary	7 (12.1)	13 (20.0)	3 (4.5)			
Diagnosis				1.207	2	0.547
Schizophrenia	45 (77.6)	47 (72.3)	53 (80.3)			
Others	13 (22.4)	18 (27.7)	13 (19.7)			
Employment history				1.576	2	0.455
Yes	53 (91.4)	57 (87.8)	62 (93.9)			
No	5 (8.6)	8 (12.3)	4 (6.1)			

arranged, discussion took place via phone calls.

Intention-to-treat analyses of the employment rates were conducted on the entire sample ($n=189$). As we aimed to compare the long-term outcomes of IPS and ISE, only these two groups were followed up at month 21, 27, 33, and 39. The demographic variables of the three groups were compared using the Chi-square statistic or one-way ANOVA. Independent sample t -tests were used to compare the number of contacts for the ISE and IPS groups by the employment specialists. The Chi-square statistic was used to compare the overall job nature, and the programme attrition rates and the cumulative employment rates of the three groups. Post-hoc testing of employment rates was implemented by exact logistic regression. Success in competitive employment was defined as having continuously worked in the job for ≥ 2 months for at least 20 hours per week. Repeated measures ANOVA with post hoc analysis was used to determine whether there were significant differences between groups in terms of job tenure, job satisfaction, and psychological outcomes. The job tenure referred to the longest duration (in weeks) a participant worked for the same job during the study.

In terms of salary and number of job terminations, comparisons were only made for ISE and IPS groups, because only a few TVR participants were employed. Missing data were prominent when the participants were

unemployed or their job was not terminated during the follow-up assessments. Thus, an independent sample t -test and Chi-square statistic were used to evaluate whether IPS or ISE participants experienced more workplace interpersonal difficulties resulting in job terminations.

Results

From the beginning to month 15 and from month 16 to 39, the number of telephone ($t = -1.34$, $P=0.19$) and face-to-face ($t = -0.89$, $P=0.38$) contacts in ISE and IPS groups not significantly different.

The attrition rates of the three groups did not differ significantly; 44 (75.9%) ISE and 41 (63.1%) IPS participants completed the final follow-up at month 39, whereas 54 (81.8%) TVR participants completed the final follow-up at month 15.

During the corresponding follow-up periods, 48 (82.8%) ISE and 40 (61.5%) IPS participants successfully obtained competitive employment, but only four (6.1%) TVR participants did so. Employment rates of the three groups were significantly different at month 7, 11 and 15.

There were 27 (57.4%) ISE, 21 (55.3%) IPS, and three (100%) TVR participants worked full-time, whereas 20 (42.6%) ISE and 17 (44.7%) IPS participants worked part-

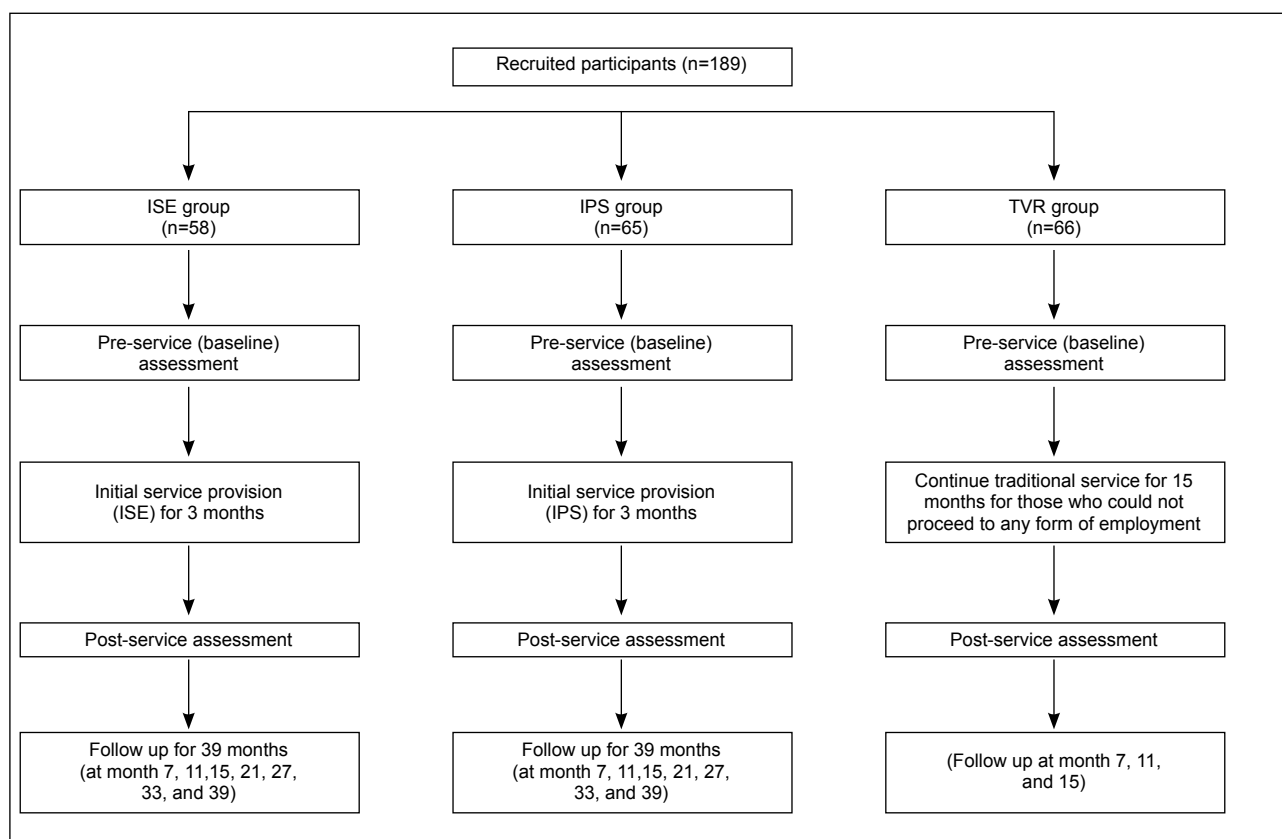


Fig. Data collection protocol of Integrated Supported Employment (ISE), Individual Placement and Support (IPS), and traditional vocational rehabilitation (TVR) groups

time. Data of four participants were missing. Job nature of the three groups was not significantly different ($\chi^2=2.294$, $df=1$, $P=0.318$, Table 2).

At the 7-, 11-, and 15-month follow-ups, ISE participants stayed longer in a job than IPS ($P<0.001$ to $P=0.008$) and TVR ($P<0.001$) participants. Job tenure of the three groups was significant different ($F=9.526$, $df=4,316$, $P<0.001$).

Data in the baseline and month 21 to 39 of the ISE and IPS groups were compared. Overall significance ($F=3.394$, $df=4,100$, $P=0.012$) on time x group interactions between the two groups was found. The results of post-hoc comparison indicated that job tenure of the ISE group was significantly longer than that of the IPS group at 21-month follow-up ($P<0.011$). Although no significant difference was noted between the two groups for the remaining follow-ups, the same trend was consistently noted at the 27-, 33- and 39-month follow-ups.

The two groups did not significantly differ in terms of salary at all follow-ups.

The mean number of unwanted job terminations for IPS participants was significantly higher than for ISE participants at the 7-month ($P=0.031$), 11-month ($P=0.004$) and 15-month ($P=0.001$) follow-ups. Although there was no significant difference at the 21-, 27-, 33-, and 39-month follow-ups, the number of job terminations in the IPS group was greater. Only 8.7% of ISE participants had faced interpersonal problems in quitting their jobs, compared to 24.2% in the IPS group.

Regarding the mean scores of the Chinese Job Satisfaction Scale, there was no significant difference between the ISE and IPS groups throughout the period nor between the three groups at 7-, 11-, and 15-month follow-ups. Nonetheless, there was a trend for the mean score of ISE participants to be higher than that of IPS participants.

The ISE ($P<0.001$) and IPS ($P=0.004$) participants obtained higher mean scores for the Chinese General Self-efficacy Scale than the TVR participants at the 15-month follow-up. Nonetheless, the mean scores of Job Stress Coping Scale, the Personal Well Being Index, and the Chinese General Self-efficacy Scale between the ISE and IPS groups were not significantly different.

Discussion

Numerous empirical reports from United State and other western countries have demonstrated the enhanced vocational outcomes of IPS among participants with severe mental illness. Based on a review on nine randomised controlled trials of IPS programmes,⁴ on average 56% of participants obtain competitive employment. The employment rate of our IPS participants (61.5%) and that reported in another Hong Kong study is similar. This indicates the superiority

of IPS over conventional vocational programmes. The employment rate of our ISE participants at 39-month follow-up was 82.8%, which was significantly higher than that for IPS participants (61.5%). This superiority was probably due to the efforts of the employment specialist who upgraded job interview skills of the participants. It may also be due to the WSST component; employers perceived more social skills in these job applicants when they made hiring decisions.⁵ The job interview skills of the participants would have played a crucial role in influencing the decision to hire. Our hypothesis that ISE programme would result in higher employment rate with a long-lasting effect was supported.

The mean job tenure of our ISE participants at 39-month follow-up was 47 weeks, which was 10 weeks longer than for IPS participants. Our hypothesis that ISE outperforms IPS in terms of ability to enhance job maintenance was therefore supported. The social competence of ISE participants was enhanced by the WSST module, which was then maintained throughout the follow-up period. Meanwhile, the employment specialists worked together with the participants to set and upgrade individualised behavioural goals, so as to help them solve interpersonal conflicts. When participants handled interpersonal difficulties successfully, encouragement would be given. Although IPS participants received similar services, they lacked the skills training element (WSST module), which was an important difference between IPS and ISE protocols.

Many problems leading to job termination pertained to interpersonal difficulties; ISE participants were less perplexed by interpersonal conflicts and were better able to resolve them than the IPS participants, despite not significantly. This suggests that social competence at the workplace may not be the only factor affecting job terminations. Other impairments such as neurocognitive and social cognition also play a role.

Vocational outcomes (including job titles, job nature,

Table 2. Types of jobs obtained by Integrated Supported Employment (ISE), Individual Placement and Support (IPS), and traditional vocational rehabilitation (TVR) participants

Job title	No. of participants		
	ISE	IPS	TVR
Office assistant	14	12	0
Cleaning worker	6	6	0
Construction worker	1	1	0
Delivery worker	4	2	0
Healthcare worker	1	1	0
Security guard	5	2	1
Sales or shop assistant	7	4	2
Tutor	1	3	0
Waiter	6	2	0
Questionnaire	1	0	0
Leaflet distributor	1	3	0
Library attendant	0	1	0
Car repair worker	0	1	0

salary, and job satisfaction) of the three groups were not significantly different, because our IPS and ISE participants shared similar socio-economic characteristics (low educational level, lack of professional qualifications), which are significant predictors of these aspects. In addition, demographic variables between the stayers and pre-mature leavers in these three groups were not significantly different.

Scores for general self-efficacy were significantly higher in both ISE and IPS participants than in TVR participants at the 15-month follow-up. Nonetheless, the difference in ISE and IPS groups was not significant, because of the small sample size. Vocational outcomes were positively associated with self-efficacy, as working facilitates self-efficacy of individuals.

Limitations

The samples were small and heterogeneous and may not be generalised. The methodology would have been more rigorous had we evaluated fidelity to the WSST by therapists and acquisition of skills by participants, and the use of those skills in the workplace. More local validation of data obtained from some of these instruments was needed. Improvement in the social skills of the ISE participants should have been demonstrated by a validated social skills assessment. The symptom control and relapse rate of the participants were not reported due to administrative and practical restraints. The reasons for attrition were not officially collected. The possible effects of allegiance should be noted, as our employment specialists were not blinded to the treatment assignment of the subjects.

Conclusions

The long-term effectiveness of the ISE programme in enhancing employment rates and job tenure among individuals with severe mental illness has been demonstrated. Further studies with larger sample sizes and

better control of confounding variables are needed. The ISE programme is a newly developed service protocol and needs to be promoted in various community-based mental health settings. Clinicians should be encouraged to adopt this model as the approach for vocational rehabilitation for people with severe mental illness.

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