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Original article

Implementing individual and placement support for patients with severe mental illness: findings from the real world

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SUMMARY

Objective

Individual Placement and Support (IPS) is a psychosocial intervention with a considerable body of evidence for its effectiveness in helping people with Severe Mental Illness (SMI) to obtain and maintain competitive job. However, little is known about IPS model in Italy, a country with a different socioeconomic climate than the USA and the UK. Aim of this study was to investigate the effect of IPS in Italian patients with SMI, assessing the main competitive employment outcomes and drop-out rates during a 3-year follow-up period.

Methods

Participants (n = 46) were recruited from the 7 adult Community Mental Health Centers (CMHCs) of the Reggio Emilia Department of Mental Health. Together with drop-out rates, we examined job acquisition (employment in the labor market for at least 1 day during the follow-up), job duration (total number of days worked), job tenure (weeks worked on the longest-held competitive job), and total hours per week worked.

Results

A crude competitive employment rate of 50% and a crude drop-out rate of 34.8 over the 3-year follow-up period were found. Using a Kaplan-Meyer survival analysis, the cumulative employment rate reached a 73% percentage at 36 months.

Conclusions

This study shows the feasibility and the utility of an implementation strategy for applying the IPS approach in the public mental health care system in Italy.

Key words: supported employment, individual placement and support, vocational rehabilitation, psychiatric rehabilitation, mental health services, outcomes

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Conflict of interest
The Authors declare no conflict of interest

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Introduction

Despite most individuals suffering from Severe Mental Illness (SMI) (i.e. schizophrenia and bipolar disorder) would actually like to work in the competitive labor market, this condition induces a significantly higher risk of unemployment in adults of working age than other disabilities [1]. Indeed, only 15% of people affected by SMI are regularly employed in the competitive employment world [2].

Individual Placement and Support (IPS) is a psychosocial intervention to help people with SMI in achieving and maintaining competitive jobs in the labor market[3]. IPS has proven to be an evidence-based practice,

showing a higher effectiveness over other vocational rehabilitation approaches [4]. In this respect, a selective meta-analysis of 15 randomized controlled trials found an overall employment rate of 55% for people receiving IPS compared to 23% for controls [5].

IPS in Italy

Since the seminal work of Basaglia in the sixties, programs aimed at employment have always been considered hallmarks of good practice in Italian community psychiatry [6]. They mostly include traditional "train and place" approaches provided in different settings, such as sheltered workshops and/or training stages by public/private employers or by social enterprises, known as cooperatives [4].

The Italian system also incorporates the statutory provision of law 68/1999, establishing a "quota of working places" for disabled citizens by private or public employers. Usually, all these activities are associated with temporary employment grants (generally a sum of approximately 4 euro/hour) that are flexible and sometimes rapid instruments, but they are overprotective and quite stigmatizing, leave little choice to users in the type of occupation or work, and often keep clients out of competitive employment for a long time [7].

The pervasive economic crisis and a clearer awareness of personal rights have boosted the demand for employment services by people with SMI. During the past ten years, the number of individuals who entered traditional vocational rehabilitation programs in Italy almost doubled, despite the rate of people entering competitive jobs halved from 10 to 5% [4]. Thus, Italian mental health services became interested in innovative interventions, such as IPS.

After the EQOLISE trial (that was the first European trial on effectiveness of IPS [in which Rimini was one of the six European sites involved] confirming the excellent findings of US researches, despite ample differences in culture of psychiatric services and in labor market regulations), Emilia-Romagna Region put IPS in its policy and financed a program for its implementation in all regional department of mental health. In 2014, 20 of out 41 Community Mental Health Centers (CMHC) in the region began offering IPS to their users [4]. Among them, there were all of the 7 adult CMHCs of the Reggio Emilia Department of Mental Health.

Because the EQOLISE study was not powered to test the IPS effectiveness for the separate countries, new evidence is needed, particularly in European countries as Italy, where, differently to the US socioeconomic climate, labor market is less flexible, there is a stronger social security system (for which labor and disability policies can impede returns to work) [8], and the employment opportunities are rather limited [4]. Indeed, it has been widely reported that IPS effectiveness was restrained in those countries where unemployment benefits offer a more secure income than potential jobs [7].

Starting to this background, *aim* of the current study was two-fold: (1) to assess the effect of IPS in patients with SMI, examining the main competitive employment outcomes (i.e. days to first job, job acquisition, and job duration) and drop-out rates during a 3-year follow-up period; and (2) to explore any relevant association of these outcomes with working history, sociodemographic and clinical characteristics. To the best of our knowledge, this is the first, entirely Italian study in the literature addressed to replicate the IPS effectiveness in the "real world" and to shed more light on its long-term effects, using a 36-month follow-up design.

Methods

Participants

Participants (n = 46) were recruited from clients receiving treatment for SMI in one of the 7 adult CMHCs of the Reggio Emilia Department of Mental Health, a semi-urban catchment area of approximately 550.000 inhabitants, in the northern Italy [9]. Enrollment started on 1 January 2015 and ended on 30 June 2018.

For the purpose of this study, inclusion criteria were: (a) working age (18-60 years), (b) presence of a SMI (i.e. schizophrenia and bipolar disorder as defined in the Diagnostic and Statistical Manual of mental disorders, IV Edition, Text Revised [DSM-IV-TR]) [10] with a major role dysfunction in the previous 12 months, (c) to be in contact with CMHC for a minimum of 6 months and expected to remain in outpatient follow-up, (d) unemployment status at the time of study admission and in the preceding year, (e) expressed desire for competitive job in the open market, (f) at least a 3-month stabilization period before study entry, (g) ability and willingness to give informed consent, and (h) residence in the catchment area. Specifically, all the participants underwent an extensive diagnostic assessment using the Structured Clinical Interview for axis I mental disorders (SCID-I) [11].

Exclusion criteria were: (a) absence of a primary diagnosis of mental retardation (known Intelligence Quotient < 70), dementia or other organic mental disorders, or substance/alcohol abuse, (b) absence of significant medical conditions (such as end-stage cancer) that would preclude working during the follow-up period, (c) full-time hospitalization, and (d) engagement in another traditional vocational rehabilitation trajectory.

All adults entering the study protocol agreed to participate to the research and gave their informed consent before interview engagement. Relevant local ethical approvals were sought for the study. The current research has been carried-out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) for experimental protocols including humans.

Procedures

Clients of the participating CMHCs were informed about the study in various ways (e.g. directly by mental health team members or through local information meetings). To assess eligibility, each client interested in participation and expressing a wish for paid employment was interviewed by IPS independent local coordinators, who were trained to evaluate eligibility. Clients who met the study criteria were accepted as participants of the study and referred for baseline assessment.

All the participants were trained by job coaches in accordance with the IPS supported employment model, which is based on the following key principles: (a) focus on competitive employment in work settings integrated into a community's economy and the open job market, (b) support in rapid job search (i.e. clients are expected to obtain job directly, without lengthy pre-employment training), (c) integration of vocational services with psychiatric services (i.e. rehabilitation is considered as an integral component of mental health intervention rather than a separate service), (d) attention to client's job preferences and choices, (e) individualized job support with employment specialists' engagement in systematic and active job development, (f) continuous assessment based on real work experiences, (g) time-unlimited support, (h) no exclusion criteria (i.e. motivation for obtaining competitive employment is the only necessary and sufficient condition for IPS enrollment), and (i) financial counselling about social security benefits [12].

All the participants were assigned to an IPS employment specialist, added to multidisciplinary community mental health team, and were followed-up during a 3-year period. Data were collected through interview on vocational outcomes at baseline and every 6 months to compare with previous IPS studies. Prior to start-up of the IPS program, IPS specialists received at least 4-month internal training and supervision on the IPS model and its "place-and-train" approach to job rehabilitation from a team of IPS trainers consisting of expert on supported employment that collaborated with IPS model developers in the "IPS Employment Center" at Lebanon, New Hampshire [3]. Each IPS specialist met regularly with his allocated CMHC to raise awareness of the service, and relied on CHMC staff members to refer potential patients. Referred patients were assessed by the IPS specialist for their motivation for obtaining employment before being offered the service, as well as for their work preferences, past work experiences, past experiences of traditional vocational rehabilitation, duration of taking charge at CMHC (i.e. before IPS enrollment), social benefits (e.g. disability pension, unemployment insurance), current skills, and tolerance for type and intensity of job demands.

Similarly to the EQOLISE trial, in each CMHC, the IPS model followed the structured and manualized approach focused on the immediate support of a job coach and a direct integration into competitive employment. IPS specialist supported the client by searching for vacant jobs, assisting applications, as well as coaching the client in working situations[8]. In some cases, participants accepted newly created competitive jobs developed in collaboration between the specialist and local employers. Once employed, "on the job" training and follow-along support were provided to help the individual in retaining the job for as long as possible. IPS specialists provided time-unlimited support before, during, and after periods of employment, operating in close collaboration with the other community mental health team members.

To assess the quality of the IPS implementation, we also conducted a *fidelity* assessment using the IPS-25 Fidelity Scale [13]. This scale measures adherence to the IPS principles and has shown good pr1edictive and discriminative validity in previous US studies. It has also been used in Italy [14] and the older version of the scale was applied in EQOLISE trial, supporting its predictive validity even in the European context [15]. In this regards, it has been widely reported that the lack of adequate technical assistance and training for staff members leads to IPS substandard implementation, attenuated effectiveness of the IPS program, and relevant impairment of the quality of the resulting evaluation [5]. Total score of the IPS-25 Fidelity Scale ranges from 25-125. According to Reme and co-workers [16], the critical cut-off point for being recognized as IPS was > 74. Each CMHC was assessed at three time points during the follow-up period (i.e. at baseline and after 3 and 6 months). Teams of trained evaluators followed detailed instructions, and the ratings were done based on interviews, team meeting observations, and document reviews. At the initial evaluation, two of the seven CMHC teams were just below the critical cut-off, but on the second and third assessment, all teams scored fair (> 85) on the fidelity scale. Therefore, all of the 7 teams improved their fidelity scores steadily throughout the follow-up period.

According to Bond and colleagues [17], competitive employment was defined as paid jobs in work settings integrated into the open job market. In the present research, we examined the following five competitive employment *outcomes*: (a) job acquisition (i.e. employment in the labor market for at least 1 day during the 36-month follow-up period), (b) job duration (i.e. total number of days worked), (c) job tenure (defined as weeks worked on the longest-held competitive job), (d) total hours per week worked, (e) days to first job (defined as the number of days from IPS admission to first competitive job), and (f) ever working ≥ 20 hours per week (defined as working at least 20 hours per week at some time during the follow-up period). The measure of days to first job is a negative indicator of successful employment: that is,

the longer the duration, the poorer the outcome [17]. Job acquisition and ever working ≥ 20 hours per week were dichotomous measures; the others were continuous parameters. All employment outcomes were prospectively assessed during the 36-month follow-up period at baseline and every 6 months. Self-reported information was derived from interviews and cross-checked through chart records, which were maintained by support center staff having every week contact with all the participants. Finally, we also determined drop-out rates during the 3-year follow-up period.
In the total sample, we firstly observed crude competitive employment rate (i.e. employment at any time during the follow-up period) and crude drop-out rate (i.e. number of participants who discontinued IPS service during the follow-up period). Secondly, we calculated competitive employment rates and drop-out rates every 6 months throughout the follow-up period, using a survival analysis method. Finally, we examined any relevant association of both job acquisition and drop-out rate with working history (i.e. years of previous work, presence of past work experiences, presence of past experiences in traditional rehabilitation, presence of social benefits), sociodemographic and clinical characteristics (i.e. gender, age, years of education, and duration of taking charge at CMHC).

Statistical analysis

Data were analyzed using the Statistical Package for Social Science (SPSS) for Windows, version 15.0 [18]. Descriptive data included mean value ± standard deviation, median and interquartile range for quantitative variables, as well as absolute frequencies and percentages for categorical variables. There were no missing data. All tests were two-tailed with level of significance set at 0.05. Due to non-normality in all explorations (Kolmogorov-Smirnov test, with Lilliefors significance correction: $p < 0.05$), non-parametric statistics were used [18]. Categorical data in between-group comparisons were analyzed with Chi-square or Fisher's exact test, as appropriate (i.e. when any expected frequency was < 1 or 20% of expected frequency was ≤ 5). The Mann-Whitney U test was used to compare ordinal variables. Finally, we performed a Kaplan-Meier survival analysis to take into account the different duration of follow-ups and individuals who dropped-out. The primary aim of survival analysis is the modeling and analysis of "time-to-event" data: that is, data that have as end-point the time when an event occurs [19]. In this regards, events are not limited to death, but may include other significant events for the research such as job acquisition and participants who dropped-out. We specifically calculated cumulative survival and cumulative proportion of job acquisition and subjects who dropped-out (i.e. 1 - cumulative survival) every 6 months during the 36-month follow-up period.

Results

Over the course of the study, 46 individuals (26 [56.5%] males, 40 [95.2%] white Caucasians, median age = 32.56 years [interquartile range = 17.54 years]) were consecutively provided with the IPS service in one of the CMHCs of the Reggio Emilia Department of Mental Health. Clinical and sociodemographic characteristics of the total sample are reported in the Table I.
At the baseline, SCID-I[11] showed that 78.3% (n = 36) of the participants fulfilled the DSM-IV-TR diagnostic criteria for schizophrenia, while 21.7% (n = 10) were categorized as bipolar disorder. Forty-one (89.1%) patients reported having at least one previous competitive work experience (median of years worked = 7.50 [interquartile range = 15.75 years]), 14 (30.4%) at least one past experience of traditional vocational rehabilitation, and 20 (43.5%) a social benefit at IPS enrollment (Tab. I).

Employment outcomes

The crude competitive employment rate along the 36-month follow-up period (i.e. job acquisition) was 50% (n = 23) (Tab. I). Using a Kaplan-Meier survival analysis, cumulative employment rates were 41% at 6 months, 48% at 12 months, 60% at 18 months, 66% at 24 months, and 73% at 36 months (Tab. II).
The other main employment outcomes of IPS participants obtaining job during the 3 years of follow-up (i.e. IPS worker subgroup [n = 23]) are shown in the Table I. In details, median of days to first job was 102 (interquartile range = 135 days), median of total days employed was 215 (interquartile range = 278 days), median of weeks worked on the longest-held competitive job (i.e. job tenure) was 28 (interquartile range = 37 weeks), and median of hours per week worked was 20 (interquartile range = 10 hour/week). Moreover, 15 (65.2%) of the 23 IPS participants obtaining job were ever working ≥ 20 hours per week at some time during 36-month follow-up period (Table I). Finally, no significant association of job acquisition with working history, sociodemographic and clinical characteristics was found (Tab. III).

Drop-out rate

The crude drop-out rate across the 3-year follow-up period was 34.8% (n = 16) (Tab. I). Using a Kaplan-Meier survival analysis, cumulative drop-out rates were 18% at 6 months, 36% at 12, 18 and 24 months, and 52% at 36 months (Tabs. IV-V). No significant association of "drop-out" condition with working history, sociodemographic and clinical characteristics in the IPS total sample was found.

Discussion

First aim of the current study was to assess the long-term effect of IPS approach in patients with

TABLE I. *Employment outcomes, work history, and sociodemographic/clinical characteristics in the IPS total sample (n = 46).*

Variables	
Gender (males)	26 (56.5%)
Ethic group (Caucasian)	40 (95.2%)
Age	32.56 (17.54)
Years of education	13.00 (2.00)
DSM-IV-TR diagnosis	
Schizophrenia	36 (78.3%)
Bipolar disorder	10 (21.7%)
Duration (in years) of taking charge at CMHC (i.e. before IPS enrollment)	3.25 (6.72)
Work history (i.e. before IPS enrollment)	
Previous work experiences	41 (89.1%)
Years of previous work	7.50 (15.75)
Past experience of traditional vocational rehabilitation	14 (30.4%)
Social benefits	
Disability pension	20 (43.5%)
Unemployment insurance	16 (34.8%)
	4 (8.6%)
Job acquisition	
Crude cumulative employment rate	
6-month cumulative employment rate	23 (50.0%)
12-month cumulative employment rate	41%
18-month cumulative employment rate	48%
24-month cumulative employment rate	60%
36-month cumulative employment rate	66%
	73%
Drop-outs	
Crude cumulative drop-out rate	16 (34.8%)
6-month cumulative drop-out rate	18%
12-month cumulative drop-out rate	36%
18-month cumulative drop-out rate	36%
24-month cumulative drop-out rate	36%
36-month cumulative drop-out rate	52%
Employment outcomes in IPS worker subgroup (n = 23)	
Days to first job	102 (135)
Total days employed	215 (278)
Job tenure (in weeks)	28 (37)
Hours per week worked	20 (10)
Ever working ≥ 20 hours per week	15 (65.2%)

Legend. IPS: Individual Placement and Support; CMHC: Community Mental Health Center; IPS worker subgroup: IPS participants obtaining job during the follow-up period. Frequencies, percentages, median and interquartile range are reported

SMI attending to adult CMHCs of an Italian Department of Mental Health, directly examining the most used competitive employment outcomes in "the real world" (i.e. in the daily practice of a public mental health care service in Italy). Indeed, as the EQOLISE study was not powered to test the IPS effectiveness for the separate countries, new evidence is needed in Europe, particularly in countries as Italy, where, differently to the US labor economics, there is a stronger social security system and the employment opportunities are rather limited [4].

Competitive employment outcomes

During the 36-month follow-up period, we found a *crude competitive employment rate* of 50%. This result is in line with what observed in the EQOLISE study (55% [in

TABLE II. *Kaplan-Meier survival analysis and cumulative employment rates in the IPS total sample (n = 46).*

Time (in months)	IPS individuals	Employment (yes) (n)	Censured individuals (n)	Proportion surviving	Cumulative survival	Cumulative employment rate
0-3	46	11	9	0.76	0.76	0.24
3-6	26	6	4	0.77	0.59	0.41
6-9	16	1	2	0.94	0.56	0.44
9-12	13	1	3	0.92	0.52	0.48
12-15	9	2	0	0.77	0.40	0.60
15-18	7	0	0	1	0.40	0.60
18-21	7	0	0	1	0.40	0.60
21-24	7	1	1	0.86	0.34	0.66
24-27	5	1	0	0.80	0.27	0.73
27-30	4	0	0	1	0.27	0.73
30-33	4	0	0	1	0.27	0.73
30-36	4	0	4	1	0.27	0.73

Legend. IPS: Individual Placement and Support; Censured individuals = IPS participants lost to a specific month interval of the follow-up without obtaining a job; Proportion surviving on a specific month interval = 1 – (number of subjects obtaining job/number of IPS participants in this time interval); Cumulative survival = proportion surviving in a defined month interval multiplied cumulative survival from the previous step; Cumulative employment rate = cumulative proportion of obtained job (i.e. 1 – cumulative survival)

TABLE III. *Associations of job acquisition with working history, sociodemographic and clinical characteristics in the IPS total sample (n = 46).*

Variables	Job acquisition (yes; n = 23) (no; n = 23) (Z/χ^2)		
Gender (males)	12 (52.2%)	14 (60.9%)	0.35
Age	33.34 ± 9.80	35.80 ± 10.17	-0.74
Age group (18-35 years)	15 (65.2%)	11 (47.8%)	1.42
Years of education	13.17 ± 3.10	12.48 ± 3.68	-0.64
Duration (in years) of taking charge at CMHC	4.64 ± 4.97	5.69 ± 6.29	-0.69
Years of previous work	11.30 ± 10.15	10.04 ± 9.19	-0.43
Past work experiences	21 (91.3%)	20 (87.0%)	0.22
Past traditional rehabilitation	8 (34.8%)	6 (26.1%)	0.41
Social benefit	10 (43.5%)	10 (43.5%)	0.00

Legend. IPS: Individual Placement and Support; CMHC: Community Mental Health Center. Frequencies, percentages, mean ± standard deviation, Chi-squared (χ^2) test and Mann-Whitney test (Z) values are reported

a 18-month follow-up period]) [7], but slightly higher than those reported in some Northern European trials conducted in Sweden (46% [in a 18-month follow-up period]) [20], The Netherlands (44% [in a 30-month follow-up period]) [21], and Norway (41% [in a 12-month follow-up period]) [16], and significantly greater than that (22%) observed in a 24-month IPS trial conducted in the UK [22]. However, it is not still comparable to job acquisition rates reported in a meta-analysis on IPS model in the US studies (62.1%) [5], and in a Hong Kong (70% [in a 12-month follow-up period]) [23] and an Australian (64% [in a 6-month follow-up period]) [24] IPS trial. Diminished effectiveness for IPS in Europe has been typically ascribed to disability and labor policies that can prevent the return to work (i.e. what Burns referred as the "benefit trap") [7].

However, our survival analysis results showed increasing cumulative employment rates ranging from 48% at 1 year to 66% at 2 years and 73% at 3 years. These findings are more consistent with those reported in the US studies, which also suggested a higher effectiveness over the other vocational rehabilitation approaches[4]. In details, rigorous evaluation of IPS found that 60% or more of IPS clients obtained competitive jobs compared to approximately 25% of those who received other types of vocational assistance [17]. In this regards, Bond and co-workers[5] suggested that almost 1/4 of patients who express an interest in competitive employment will suc-

TABLE IV. *Kaplan-Meier survival analysis and cumulative drop-out rates in the IPS total sample (n = 46).*

Time (in months)	IPS individuals	Drop-out (n)	Censured individuals (n)	Proportion surviving	Cumulative survival	Cumulative drop-out rate
0-3	46	5	4	0.89	0.89	0.11
3-6	37	3	5	0.92	0.82	0.18
6-9	29	3	3	0.90	0.74	0.26
9-12	23	3	2	0.87	0.64	0.36
12-15	18	0	2	1	0.64	0.36
15-18	16	0	2	1	0.64	0.36
18-21	14	0	1	1	0.64	0.36
21-24	13	0	3	1	0.64	0.36
24-27	10	0	2	1	0.64	0.36
27-30	8	0	0	1	0.64	0.36
30-33	8	2	0	0.75	0.48	0.52
30-36	6	0	6	1	0.48	0.52

Legend. IPS: Individual Placement and Support; Censured individuals: IPS participants lost to a specific month interval of the follow-up without being dropped out; Proportion surviving on a specific month interval = 1 – (number of dropped-out subjects/number of IPS participants in this time interval); Cumulative survival = proportion surviving in a defined month interval multiplied cumulative survival from the previous step; Cumulative drop-out rate = cumulative proportion of dropped out individuals (i.e. 1 – cumulative survival)

TABLE V. *Associations of "drop-out" condition with working history, sociodemographic and clinical characteristics in the IPS total sample (n = 46).*

Variables	Drop-out (yes; n = 16)	(no; n = 30)	(Z/χ^2)
Gender (males)	11 (68.8%)	15 (50.0%)	1.49
Age	36.18 ± 10.38	33.72 ± 9.82	-0.67
Age group (18-35 years)	8 (50.0%)	18 (60.0%)	0.42
Years of education	12.13 ± 3.12	13.20 ± 3.51	-1.04
Duration (in years) of taking charge at CMHC	2.75 ± 3.84	5.37 ± 5.58	-1.13
Years of previous work	12.60 ± 9.58	9.97 ± 9.68	-0.88
Past work experiences	15 (93.8%)	26 (86.7%)	0.54
Past traditional rehabilitation	3 (18.8%)	11 (36.7%)	1.58
Social benefit	4 (25.0%)	16 (53.3%)	3.40

Legend. IPS: Individual Placement and Support; CMHC: Community Mental Health Center. Frequencies, percentages, mean ± standard deviation, Chi-squared (χ^2) test, Fisher exact test, and Mann-Whitney test (Z) values are reported

ceed in obtaining a job in diverse vocational program (or even without any vocational services), but IPS helps an additional 35% of the target group who otherwise remain unemployed.

Furthermore, our findings confirm the absolute inconsistency of concerns that several clinicians often raised about the potential detrimental impact of the IPS model. In this regards, many mental health professionals worried that IPS (i.e. rapid job searching attempts and the efforts to hold a competitive employment) might lead to increased anxiety and uncertainty in patients with long-term mental disorders because of the threat of returning to the workplace without a protracted period of preparation [2]. Such clinicians frequently discouraged patients from applying for competitive employment because they were convinced that a stressful surrounding would have led to a destabilization of the subject. Overall, no evidence supports these concerns and a deterioration in mental or social functioning at final follow-up in the IPS compared with other vocational services [25]. In contrast, On the contrary, it has been demonstrated that finding employment correlated with an increase in global functioning, symptoms, and social adjustment [8]. As job acquisition (i.e. the percentage of participants who gain competitive job during follow-up) has been criticized as a crude indicator, other competitive employment outcomes have been suggested as measure of IPS effectiveness, including time to first job, job dura-

tion, and job tenure. In the present research, the median of *days to first job* (102 days) is lower than what reported in other IPS comparable study (i.e. 136 days [5], 137 days [25], and 126 days [17], respectively). Together with the evidence that 19 (82.6%) out of 23 IPS participants obtaining job during the 3-year follow-up period did so within their first 12 months, this finding seems to confirm that little is lost in terms of job acquisition by limiting the duration of involvement in IPS services to 1 year. In this regards, Burns and colleagues [25] recently proposed an overcoming of IPS "no-discharge" policy and its active support that is not withdrawal although patients may disengage from services. As this "no-discharge" policy powerfully restricts access to IPS in resource-limited public services, the authors suggested that there is a merit on a time limit to avoid persisting with participants who are currently unlikely to succeed. In the current study, a limit of the duration of the support to 12 months does not appear to significantly reduce the number of subjects obtaining competitive employment. Thus, given current difficulties in implementing IPS in times of austerity, a time-limited model could be the first choice for new services [25].

In the present research, the median of *total days employed* (215 days) is in line with what reported in the EQUOLISE trial (i.e. 214 days in a 18-month follow-up period) [7] and in the most US IPS studies (e.g. 199 days in a 12-month follow-up period [13] and 215 days in a 18-month follow-up period [17]), but much higher than those observed in other European IPS researches (e.g. 74 days in a 12-month follow-up period [25] and 123 days in a 30-month follow-up period [21]). Similarly, in the current study, both median of *hours per week worked* (20 hours/week) and *job tenure* (28 weeks) are consistent with what reported in the US studies (e.g. respectively 19 hours/week and 25 weeks in a 18-month follow-up period [13], and 23 hours/week and 25 weeks in another 18-month follow-up period [17]), but slightly higher than those observed in a UK 12-month follow-up trial (respectively 15 hours/week and 18 weeks [25]). Finally, similarly to what reported in other IPS comparable studies [5,17], almost two-thirds of our IPS participants obtaining job worked 20 hours or more per week at some time during the 36-month follow-up period. Few IPS clients worked full-time, likely due to preferences, limited stamina, and/or fear of losing health insurance or other benefits.

In conclusion, our findings on primary and secondary employment outcomes appear to excel in the European context and to be comparable with the evidence of a higher effectiveness of the IPS model than the traditional vocational approach in rehabilitating people with SMI shown in several US trials. However, despite the encouraging results that emerged in this research, a transfer of IPS methodology to Europe requires certain structural changes, as European countries differ from USA in terms of job market, labor economics, and welfare system [2]. According to Fioritti and co-workers [4], a controversial issue in Italy concerns the fact that some clients find jobs in the informal "black labor market", which, differently to the set of values in the Italian constitution (defining work as a right of the individual), represents 10-to-50% of all employment opportunities in different regions, mostly comprising jobs requiring non-specialized manpower. Moreover, a second controversial issue is the precarious nature of jobs in Italy. Indeed, most participants find part-time employment in 6-to-12 month contact, which is very far from the gold standard of full-time and forever that traditional Italian regulations would require (though almost never ensure) [6]. Precarious jobs represent approximately 50% of employment opportunities for all young workers in Italy. Conversely, social enterprise and temporary grant jobs are often not precarious, as they tend to last forever, but they are not open labor market jobs and are an economically protected niche. For these reasons, many mental health clients may be apprehensive about participating in a new vocational program aimed at competitive employment, and they may opt for continuing in the more familiar and comfortable environment of existing services [26]. Finally, Fioritti and colleagues [4] also suggested that a third important controversial aspect regards the 40-to-50% of users who do not find a job with IPS and still demand work. In this sense, perhaps it is useful to provide IPS model along with other treatment option, possibly in a stepwise order. Strategies supporting the individual in entering mainstream jobs should be used at first, especially for first-episode psychosis [27], and for a sufficient duration (at least 12-18 months), before entering the subsidy system and sheltered approach.

In the present research, no significant association of job acquisition with work history, sociodemographic and clinical variables was found. These findings suggests that employment rate appear to be independent from gender, age, level of education, duration of taking charge at CMHC, past work experiences, previous traditional rehabilitation program, and social benefits. In contrast, Metcalfe and coworkers [28] showed that a recent work history and a less time on the Social Security rolls are associated with greater probability of employment. Differently, our results do not seem to support the risk-adverse of the benefit trap and the perverse incentives of social security system.

Drop-out rate

In the current study, our drop-out rates are higher than those reported in several IPS comparable trials (approximately 10% in most US studies)[10]. In details, we found a crude drop-out rate of approximately 35% and cumulative drop-out rates of 18% at 6 months and 36% at 1 and 2 years. However, these results are substantially

in line with what (43% in a 30-month follow-up period) reported in a relatively recent IPS study conducted in the Netherlands [21] and in an early review noting a high drop-out rate (about 40%) among supported employment clients [12]. Finally, although no association of drop-out condition with work history, sociodemographic and clinical characteristics was found, the large majority of participants dropping-out the IPS program did so within their first 12 months. In times of limited resources, this result further supports a time-limited IPS model as first choice for new services [25].

Limitations

Several limitations of this study should be acknowledged. Firstly, we have focused exclusively on competitive job, and the impact of supported employment on nonvocational measures of psychiatric symptoms and quality of life was not evaluated. Thus, further research in Italy is required to investigate the relationships between vocational and nonvocational outcomes, including clients' motivation to work, self-esteem, and self-efficacy. Moreover, measures of job quality are needed, as are measures of job satisfaction [25].

Secondly, in the present research, measuring job tenure has been problematic because several participants are employed at the end of follow-up (i.e. many job tenure periods are right-censored). According to Bond and co-workers [25], perhaps the literature consistently underestimates job tenure. The optimal solution would be to conduct long-term follow-up studies.

Finally, another relevant limitation was the limited size of IPS worker subgroup (n = 23). This probably reduces the generalizability of our results, which must be replicated in larger IPS samples.

Conclusions

This study documents the feasibility of an IPS implementation strategy for introducing a new service model in a traditional public mental health care system in Italy, which has not always welcomed change. Indeed, a nationwide introduction of IPS not only might lead to beneficial changes for clients, but also might precipitate system changes towards the development of a recovery-oriented system. Moreover, this research adds evidence to the growing literature on the positive effect of IPS in promoting employment among people with SMI, also in a European country with a socioeconomical climate that differs and is more protective than that in the US. However, future studies on subjective outcomes, process evaluations, and cost effectiveness are needed.

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