

Peer-led self-management programme for people with recent-onset psychosis: a randomised controlled trial (abridged secondary publication)

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KEY MESSAGES

1. The peer-led self-management intervention (PLSMI), in addition to usual care, is an effective intervention for people with recent-onset psychosis. It significantly improves patients' recovery during long-term follow-up.
2. The PLSMI results in significantly greater improvements in patients' functioning, symptoms, illness insight, re-hospitalisation rates, and service satisfaction over an 18-month follow-up period, compared with psychoeducation or usual care alone.
3. Participants perceive that the PLSMI enhances their hope for recovery and social support, while improving their self-care skills and functioning

in daily living.

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Introduction

Psychosis affects more than 30% of psychiatric patients worldwide and is associated with a high risk of relapse in the early stages of illness. Psychosocial interventions can improve symptoms and reduce relapses, but evidence concerning psychosocial health and functional outcomes remains inconsistent and inconclusive.¹ Recovery-focused interventions maximise self-care and problem-solving for illness management and may better meet service users' needs. Additionally, peer support workers who have recovered from psychosis serve as role models, encouraging active and autonomous recovery in peers and co-patients. This multicentre, three-arm, randomised controlled trial aimed to evaluate the effectiveness of the peer support worker-led self-management intervention (PLSMI) over 18 months in patients with recent-onset psychosis, compared with a psychoeducation (PE) group and a treatment-as-usual (TAU) group. Perceived benefits and limitations of the intervention were examined from participants' and interveners' perspectives.

Methods

Chinese patients aged 18 to 60 years with a recent-onset (≤ 3 years) psychotic disorder (based on Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition criteria) attending one of six Integrated Community Centres for Mental Wellness in Hong Kong who had a Global Assessment of Functioning score of ≥ 51 and were mentally stable

to receive intervention were assessed for eligibility. Patients were excluded if they had recently received psychoeducation or psychotherapy, visual, language, or communication difficulties, or a history of serious mental or medical diseases.

Assuming a 5% significance level and a 15% attrition rate, we aimed to recruit 180 participants (60 per group) to detect a medium effect size on recovery (Cohen's $d=0.52$) with 80% power.² The TAU group received standard community mental healthcare services. The PLSMI group (divided into five subgroups with 12 to 14 participants each) received community services in addition to ten 1.5-hour sessions, held weekly or biweekly, led by a peer support worker based on the crisis-resolution-team optimisation and relapse prevention programme.³ The PE group (also divided into five subgroups) received community services and intervention sessions led by an advanced nurse based on psychoeducation programmes for psychosis.⁴

Outcome measures included the Questionnaire about the Process of Recovery (for progress of recovery), the Insight and Treatment Attitude Questionnaire (for insight into illness and treatment), the Specific Level of Functioning Scale (for functioning), the Positive and Negative Syndrome Scale (for mental state), the Revised Social-Problem-Solving Inventory (for problem-solving ability), the Client Satisfaction Questionnaire (for service satisfaction), and re-hospitalisation rates. Participants were assessed at baseline, 1 week, 6 months, 12 months, and 18 months.

A purposive sample of approximately 15 participants (including similar proportions of individuals with very positive, negative, and minimal score changes in recovery and functioning) was recruited for four focus-group interviews (three for PLSMI participants and one for peer support workers) after completing T1 to identify perceived strengths and limitations of the PLSMI.

The homogeneity of study groups was examined, and analyses were performed based on the intention-to-treat principle. Generalised estimating equation tests were conducted, followed by pairwise contrast tests. Missing data were estimated using maximum likelihood estimation, followed by repeated-measures analysis of variance and Helmert contrasts tests. No covariance analysis was performed because no significant differences were observed between groups at baseline. The time to hospitalisation over the 18-month follow-up was analysed using survival analysis and the Cox regression test. Differences among centres and between completers (>6 sessions) and non-completers (≤ 4 sessions) in the PLSMI were examined using the Kruskal-Wallis test. A P value of <0.05 was considered statistically significant. Content analysis was conducted on focus-group interview data.

Results

Of 560 eligible patients, 480 (85.7%) agreed to participate. Among these, 180 participants (30 per centre) were randomly selected and assigned to the PLSMI, PE, or TAU group. Of the 180 participants, 171 who completed the intervention (>6 group sessions) and follow-up were included in the analysis. The mean numbers of attendances at PLSMI and PE group sessions were 8.6 ± 1.0 (range, 4-10) and 8.1 ± 1.2 (range, 3-10), respectively. The three groups were comparable in terms of baseline characteristics (Table 1).

Significant group \times time effects were observed for six outcomes over 18 months (Wald's $\chi^2=13.40-25.48$, $P=0.01-0.001$), with moderate to large effect sizes ($\eta^2=0.13-0.23$) [Table 2]. Compared with the TAU group, the PLSMI group showed greater improvements from 1 week to 18 months in terms of recovery, functioning, psychotic symptoms, and duration of re-hospitalisations, as well as from 6 to 18 months in terms of insight into treatment/illness and service satisfaction. Compared with the PE group, the PLSMI group demonstrated greater improvements at 12 and/or 18 months in terms of psychotic symptoms, insight into treatment/illness, service satisfaction, and duration of re-hospitalisations.

Compared with the TAU group, the PLSMI group had a longer time to hospitalisation (90.85 vs 48.92 days). Kaplan-Meier survival curves indicated that survival rates (no hospitalisation) were significantly higher in the PLSMI group than

in the TAU group at 6 months (81.03% vs 44.64%, $P=0.003$), 12 months (77.58% vs 41.07%, $P=0.003$), and 18 months (74.13% vs 19.65%, $P=0.001$). No significant differences were found among study centres or between completers and non-completers in the PLSMI group.

Focus-group interviews revealed four perceived benefits (enhanced hope for recovery, increased social support, better self-care skills, and improved functioning) and three limitations (concerns about instability or increased severity of psychotic symptoms, concerns about the need for very long-term treatment, and challenges in self-care or problem-solving in daily life) of the PLSMI. Most PLSMI participants expressed that although they understood the treatment and recovery process could be a long-term 'battle' requiring sustained self-care and illness management, they could maintain hope for recovery and improved self-care and functioning, with satisfactory support from peers and health professionals.

Discussion

The 4-month PLSMI for people with recent-onset psychosis was effective in improving recovery, functioning, psychotic symptoms, insight into illness and treatment, service satisfaction, duration of re-hospitalisations, and time to hospitalisation over an 18-month period. The treatment effects of the PLSMI were significantly greater than those of psychoeducation, particularly at the 12- and 18-month follow-ups.

The PLSMI not only enhanced participants' engagement and empowerment in self-care and help-seeking but also reduced the costs associated with employing psychotherapists. Participant feedback supported the perceived benefits of the PLSMI. Furthermore, guided self-care and recovery planning was more beneficial than the didactic information provided via psychoeducation.

Completion rates were high, while attrition rates were low, for both the PLSMI and PE groups. The PLSMI may be more acceptable than other psychosocial interventions for patients with early psychosis, which typically demonstrate intervention completion rates of 40% to 80% and attrition rates of 15% to 55%.^{2,4,5} This PLSMI was user-friendly and required less manpower, making it a feasible option for early intervention.

There were some limitations in the present study. First, participants were volunteers motivated to engage in their illness self-management and recovery; they were not blinded to intervention allocation, which may have introduced expectation and response biases. Second, the sample consisted of patients with relatively high education levels, above-average household income, and a short duration of illness (≤ 3 years); our findings may not

TABLE I. Baseline characteristics of participants (n=180)

Characteristic	Peer-led self-management intervention (n=60)	Psychoeducation (n=60)	Treatment as usual (n=60)	P value
Sex				0.15
Male	36 (60.0)	34 (56.7)	36 (60.0)	
Female	24 (40.0)	26 (43.3)	24 (40.0)	
Age, y	25.5±5.8	25.0±6.2	26.1±6.0	0.12
18-25	28 (46.7)	27 (45.0)	26 (43.3)	
26-30	18 (30.0)	17 (28.3)	17 (28.3)	
31-35	10 (16.6)	11 (18.3)	12 (20.0)	
36-43	4 (6.7)	5 (8.3)	5 (8.3)	
Education level				0.18
Primary school or below	9 (15.0)	8 (13.3)	10 (16.7)	
Secondary school	39 (65.0)	38 (63.3)	40 (66.7)	
University or postgraduate degree	12 (20.0)	14 (23.3)	10 (16.7)	
Monthly household income, HK\$	19 125±6482	18 553±5275	16 393±5518	0.20
5000-10 000	9 (15.0)	7 (11.7)	10 (16.7)	
10 001-15 000	23 (38.3)	24 (40.0)	23 (38.3)	
15 001-25 000	19 (31.7)	19 (31.7)	18 (30.0)	
25 001-35 000	9 (15.0)	10 (16.7)	9 (15.0)	
Employment status				0.20
Full-time	25 (41.7)	25 (41.7)	27 (45.0)	
Part-time	19 (31.7)	20 (33.3)	19 (31.7)	
Unemployed	16 (26.7)	15 (25.0)	14 (23.3)	
Duration of illness, m	14.82±9.85	15.70±10.10	16.45±9.25	0.23
1- 8	12 (20.0)	15 (25.0)	13 (21.7)	
9-18	21 (35.0)	20 (33.3)	21 (35.0)	
19-24	14 (23.3)	16 (26.7)	17 (28.3)	
>24	13 (21.7)	9 (15.0)	9 (15.0)	
Services received				0.12
Outpatient department	40 (66.7)	38 (63.3)	42 (70.0)	
Day hospital	5 (8.3)	6 (10.0)	9 (15.0)	
Community Psychiatric Nursing Service / Early Assessment Services for Young People	28 (46.7)	29 (48.3)	26 (43.3)	
Counselling and social or recreational service	8 (13.3)	9 (15.0)	7 (11.7)	
Integrated Community Centres for Mental Wellness	60 (100)	60 (100)	59 (98.3)	
Dosage of medication				0.10
High	10 (16.7)	9 (15.0)	10 (16.7)	
Medium	39 (65.0)	40 (66.7)	38 (63.3)	
Low	11 (18.3)	11 (18.3)	12 (20.0)	
Types of psychotropic drugs				0.18
Atypical	32 (53.3)	33 (55.0)	34 (56.7)	
Typical	19 (31.7)	13 (21.7)	13 (21.7)	
Blended	7 (11.7)	8 (13.3)	10 (16.7)	
Anti-depressant/mood stabiliser	3 (5.0)	4 (6.7)	3 (5.0)	
Others (eg, anxiolytics)	5 (8.3)	4 (6.7)	4 (6.7)	
Questionnaire about the Process of Recovery	37.56±9.01	38.01±8.10	38.12±8.50	0.13
Specific Level of Functioning Scale	30.54±6.42	30.92±5.87	30.82±6.44	0.29
Positive and Negative Syndrome Scale				
Total	108.33±17.82	110.22±11.56	110.12±9.89	0.27
Positive symptoms	31.11±7.80	31.75±6.80	31.20±9.00	0.35
Negative symptoms	28.01±6.50	29.80±7.20	29.56±7.90	0.25
General psychopathology	49.23±9.78	48.67±9.40	49.36±9.80	0.20
Social Problem Solving Inventory-Revised: Short version	45.98±8.16	47.33±7.56	46.98±9.94	0.11
Insight and Treatment Attitude Questionnaire	20.10±8.13	21.52±9.12	21.98±9.10	0.11
Re-hospitalisations				
No.	1.32±0.90	1.45±0.91	1.47±0.89	0.12
Duration, d	19.52±6.85	20.05±8.84	18.90±9.12	0.10
No. of patients	29	28	29	0.28

TABLE 2. Outcomes of three intervention groups across five timepoints and results of generalised estimating equation analysis

Outcome	Peer-led self-management intervention (n=58)*	Psychoeducation (n=57)*	Treatment as usual (n=56)*	Generalised estimating equation analysis		
				Group effect†	Time effect†	Group × time effect†
Questionnaire about the Process of Recovery				0.67 (0.36-0.99), P=0.002	0.48 (0.30-0.66), P=0.007	1.98 (1.52-2.44), P=0.001, $\eta^2=0.21$
Baseline	37.56±9.01 (28.53-46.62)	38.01±8.10 (29.98-46.31)	38.12±8.50 (29.60-36.80)			
1 week	43.85±9.82 (33.02-52.44)	40.81±8.21 (32.50-49.12)	36.08±9.81 (26.17-46.08)			
6 months	49.98±11.05 (38.61-61.43)	42.50±9.22 (32.28-51.75)	34.42±8.31 (26.11-42.83)			
12 months	52.81±12.65 (40.28-65.40)	43.01±9.60 (34.22-52.58)	36.98±9.77 (27.12-46.75)			
18 months	55.98±11.10 (43.91-66.02)	45.11±10.23 (34.90-55.10)	38.11±10.33 (28.01-48.44)			
Specific Level of Functioning Scale				0.68 (0.38-0.98), P=0.001	0.65 (0.39-0.91), P=0.003	2.01 (1.58-2.44), P=0.001, $\eta^2=0.23$
Baseline	30.54±6.42 (23.88-36.93)	30.92±5.87 (24.98-36.74)	30.82±6.44 (24.38-37.24)			
1 week	35.41±6.81 (28.62-42.14)	31.04±6.95 (24.09-37.82)	28.18±7.12 (21.05-35.25)			
6 months	42.82±9.96 (32.86-52.78)	33.83±7.06 (26.78-40.90)	28.94±9.28 (19.83-38.12)			
12 months	43.91±9.12 (34.80-53.02)	37.12±8.43 (28.85-43.51)	30.15±9.45 (20.78-39.60)			
18 months	49.12±9.84 (39.91-49.00)	38.22±8.30 (30.00-46.50)	33.41±9.38 (24.13-42.82)			
Positive and Negative Syndrome Scale				-0.58 (-0.69 to 0.47), P=0.007	-0.52 (-0.73 to -0.31), P=0.01	-1.50 (-2.28 to -0.72), P=0.005, $\eta^2=0.16$
Baseline	108.33±17.82 (91.42-126.23)	110.22±11.56 (98.66-121.79)	110.12±9.89 (100.81-120.13)			
1 week	99.30±15.20 (83.83-114.52)	99.96±13.21 (86.70-113.12)	118.21±11.10 (107.14-129.31)			
6 months	85.20±16.04 (69.82-101.22)	98.18±18.51 (80.68-116.63)	122.82±12.81 (110.02-134.03)			
12 months	84.12±14.01 (70.10-98.12)	95.12±11.06 (84.06-106.17)	113.11±9.06 (104.10-122.17)			
18 months	81.01±12.06 (69.04-93.07)	93.22±9.81 (83.46-103.12)	104.98±12.11 (92.99-117.06)			
Social Problem Solving Inventory-Revised: Short version				0.40 (0.25-0.55), P=0.04	0.32 (0.20-0.42), P=0.06	1.11 (0.98-1.24), P=0.06, $\eta^2=0.05$
Baseline	45.98±8.16 (37.82-54.13)	47.33±7.56 (39.78-54.88)	46.98±9.94 (37.04-56.93)			
1 week	50.23±9.17 (41.20-59.50)	50.02±8.16 (41.82-58.16)	47.87±9.51 (38.37-57.38)			
6 months	54.12±8.98 (45.13-63.14)	51.82±9.01 (42.75-60.80)	48.83±11.03 (37.80-49.87)			
12 months	55.33±5.98 (49.71-61.32)	50.98±8.06 (42.91-59.06)	46.88±8.06 (38.80-54.93)			
18 months	57.11±7.35 (49.80-64.50)	52.11±9.13 (43.00-61.25)	49.33±9.45 (39.98-58.77)			

* Data are presented as mean ± standard deviation (95% confidence interval).

† Data are presented as β (95% confidence interval).

TABLE 2. (cont'd)

Outcome	Peer-led self-management intervention (n=58)*	Psychoeducation (n=57)*	Treatment as usual (n=56)*	Generalised estimating equation analysis		
				Group effect†	Time effect†	Group × time effect†
Insight and Treatment Attitude Questionnaire				0.53 (0.28-0.76), P=0.01	0.46 (0.32-0.60), P=0.02	1.40 (1.05-1.75), P=0.01, η²=0.13
Baseline	20.10±8.13 (11.98-28.22)	21.52±9.12 (12.40-30.64)	21.98±9.10 (12.88-31.08)			
1 week	24.02±9.80 (15.20-24.02)	20.83±8.04 (12.79-28.88)	18.52±8.02 (10.50-26.54)			
6 months	25.14±9.41 (15.96-34.54)	19.83±8.81 (11.03-28.63)	17.81±9.21 (8.61-27.02)			
12 months	25.48±6.46 (19.02-31.94)	20.31±8.06 (12.30-28.37)	18.12±8.91 (9.21-27.04)			
18 months	26.31±7.30 (19.01-33.40)	21.98±9.36 (12.62-31.31)	17.21±6.06 (11.15-23.28)			
No. of re-hospitalisations				0.38 (0.20-0.56), P=0.06	0.22 (0.13-0.31), P=0.10	0.81 (0.52-1.10), P=0.09, η²=0.05
Baseline	1.32±0.90 (0.42-2.21)	1.42±0.91 (0.51-2.33)	1.47±0.89 (0.58-2.36)			
1 week	1.02±0.81 (0.21-2.02)	1.33±1.00 (0.33-2.33)	1.40±0.92 (0.48-2.32)			
6 months	1.05±0.72 (0.33-1.77)	1.38±1.02 (0.36-2.40)	1.31±0.98 (0.38-2.29)			
12 months	0.98±0.58 (0.40-1.56)	1.24±0.90 (0.34-2.14)	1.40±0.90 (0.50-2.30)			
18 months	0.98±0.70 (0.28-1.68)	1.09±0.89 (0.21-1.94)	1.33±0.88 (0.75-2.21)			
Duration of re-hospitalisation, d				-0.52 (-0.78 to 0.26), P=0.01	-0.54 (-0.70 to -0.38), P=0.01	-1.50 (-1.89 to -1.11), P=0.01, η²=0.15
Baseline	19.52±6.85 (12.67-26.37)	20.05±8.84 (11.21-28.89)	18.90±9.12 (9.78-28.02)			
1 week	14.31±7.87 (6.44-22.18)	16.21±9.00 (7.21-25.21)	20.80±9.91 (10.89-30.80)			
6 months	12.84±8.13 (4.71-20.93)	10.89±9.12 (10.77-20.01)	22.50±9.39 (13.11-31.89)			
12 months	9.96±5.23 (4.73-14.19)	12.22±8.01 (4.20-20.23)	18.12±9.06 (9.08-27.16)			
18 months	9.01±4.06 (5.00-13.05)	14.81±7.12 (7.70-21.92)	17.93±8.82 (9.12-27.74)			
No. of patients with re-hospitalisation						P=0.01
Baseline	20	21	19			
1 week	12	17	20			
6 months	7	15	19			
12 months	9	14	15			
18 months	7	12	16			
Client Satisfaction Questionnaire				0.50 (0.24-0.74), P=0.01	0.46 (0.26-0.66), P=0.02	1.32 (1.03-1.61), P=0.02, η²=0.13
Baseline	15.01±5.02 (9.99-20.03)	15.52±6.80 (8.72-22.32)	15.02±7.20 (7.82-22.22)			
1 week	19.57±7.33 (12.24-27.0)	17.81±8.88 (8.93-26.69)	17.08±9.81 (7.27-26.89)			
6 months	20.98±6.18 (14.80-26.98)	19.02±8.10 (10.98-27.12)	15.33±7.31 (8.02-22.64)			
12 months	21.11±6.01 (15.10-27.14)	19.01±5.89 (13.12-24.90)	18.10±9.10 (9.98-27.18)			
18 months	23.58±7.31 (16.21-30.90)	18.03±6.91 (11.14-24.91)	18.31±9.51 (8.80-27.81)			

be generalisable to the broader patient population. Third, the sample size estimation was based on three similar studies conducted immediately post-intervention; the sample size or study power might be insufficient. Fourth, the PLSMI included only patients; it did not assess family members or relatives who may have interdependent social and healthcare needs related to psychiatric rehabilitation. Finally, problem-solving and self-care practices facilitated by peer support workers in the PLSMI were not systematically monitored.

Conclusion

The PLSMI for individuals with early-stage psychosis is effective in improving psychosocial health outcomes and reducing relapse risk. Our findings support the PLSMI's utility for early intervention in community-based psychosis care, where manpower and resources are limited. Further cost-effective analysis studies are warranted.

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