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Stages of change, self-stigma, and treatment compliance among Chinese adults with severe mental illness

Key Messages

1. Individuals with higher global functioning, better readiness for action, and lower self-esteem decrement tend to have better psychosocial treatment participation.
2. Individuals with lesser psychiatric symptoms are more likely to have better treatment attendance.
3. Self-stigmatisation undermines treatment compliance. Its indirect effects can be mediated via stages of change and insight.
4. The self-stigma reduction programme may reduce self-esteem decrement, promote readiness for changing own problematic behaviours, and enhance psychosocial treatment compliance. However, its therapeutic effects were not maintained during the 6-month follow-up.

Introduction

Self-stigma is a significant predictor of psychosocial treatment compliance.[1] The present study hypothesised that in individuals with schizophrenia self-stigmatised ideas impede their stages of change for seeking treatment.[2] Understanding of the mechanism helps formulate appropriate treatment to counteract negative consequences.

This study aimed to (1) examine the relationship between stages of change, self-stigma, insight, self-esteem, and psychosocial treatment compliance among Chinese adults with schizophrenia; (2) develop an interventional programme to reduce self-stigma and enhance readiness for change and treatment compliance; and (3) test the effectiveness of the self-stigma reduction programme.

Methods

This was a cross-sectional study (for relationship exploration) and entailed a randomised controlled trial (in the form of a self-stigma reduction programme). Institutional ethical approval and informed consent from each patient were obtained. Between March 2007 and January 2008, 51 men and 54 women with schizophrenia were recruited using convenience sampling by occupational therapists, social workers, and nurses from the Baptist Oi Kwan Social Services, the Richmond Fellowship of Hong Kong, the Stewards Company, the United Christian Hospital, and the Yung Fung Shue Psychiatric Centre. All the recruited patients had at least an elementary level of education, and their mean age was 42 (standard deviation, 9) years.

Participants were assessed using the Psychosocial Treatment Compliance Scale (PTCS), the Brief Psychiatric Rating Scale (BPRS), the Global Assessment of Functioning Scale (GAF), the Chinese Self-stigma of Mental Illness Scale (CSSMIS), the Change Assessment Questionnaire for People with Severe and Persistent Mental Illness (CAQ-SPMI), the Scale to Assess Unawareness of Mental Disorders (SUMD), and the Chinese General Self-efficacy Scale (CGSS). Stepwise multiple regression was used to explore the relationship between treatment compliance (dependent variable) and potential contributing factors. The contribution of each significant independent variable in predicting participation/attendance was reflected by the magnitude of each standardised regression coefficient (β). Two hypothetical path models for self-stigma, insight, readiness for change, and psychosocial treatment compliance were compared (Fig). Relative chi-square (χ^2/df), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were used to test the goodness-of-fit of the models. The goodness-of-fit obtained with the two path models were compared, and the P value determined.

The self-stigma reduction programme comprised 16 sessions (12 group sessions plus four individual follow-ups). It integrated psychoeducation, cognitive behavioural therapy, motivational interviewing, social skills training, and goal attainment components. The programme was pilot-tested at the psychiatric wards of Kowloon Hospital by an experienced occupational therapist and research associate. The feedback was positive. Participants who suffered

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from self-stigmatisation as indicated by the CSSMIS were eligible. Between October 2008 and December 2009, 66 individuals with schizophrenia recruited from the Baptist Oi Kwan Social Services, the Richmond Fellowship of Hong Kong, the Stewards Company, and the New Life Psychiatric Rehabilitation Association were randomised to the experimental (n=34) or comparison (n=32) protocol. The two groups were not significantly different (Table 1).

Participants in the experimental and comparison groups received the self-stigma reduction programme and newspaper reading, respectively, delivered by a research associate and an occupational therapist. The newspaper reading included stigma-related issues pertaining to mental illness. A 1-hour session was held twice a week, and every month there was a 15-minute individual follow-up session. The same seven instruments were used to assess outcome before commencement of the intervention, after the 7th and 12th sessions, and 2, 4, and 6 months after the 12th session. The raters were blind to the intervention types.

The active intervention (baseline to post-intervention) and maintenance (post-intervention to third follow-up) effects of the two groups were compared. Repeated measures ANOVA with Bonferroni correction (P value adjustment within each variable by dividing the number of time intervals) was used to determine whether significant differences existed. ANCOVA was used when there were differences in baseline scores between the two groups. Only measures that demonstrated an active intervention effect were included for analysis of the maintenance effect. The potential institutional effect was controlled. Missing data were computed by the principle of last observation being carried forward.

Results

In the cross-sectional study, 14 and 11 independent variables on 'participation' and 'attendance', respectively, reached the Bendel criterion for the regression analyses.[3] Higher global functioning (β=0.410, P<0.001), better
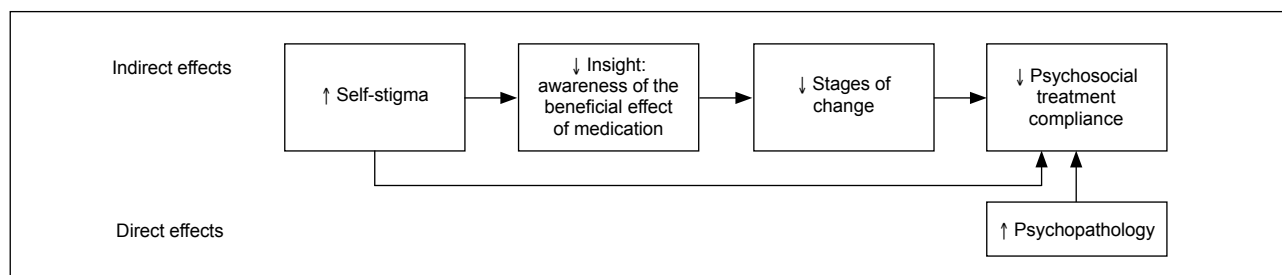

Fig. Hypothetical path model 1 (indirect effects of self-stigma) and model 2 (direct and indirect effects of self-stigma)

Table 1. Demographics of participants*

Parameter	Experimental (n=34)	Comparison (n=32)	χ^2 / t-value	df	P value
Gender			0.77	1	0.559
Male	18 (52.9)	19 (59.4)			
Female	16 (47.1)	13 (40.6)			
Education			2.440	2	0.295
Primary	8 (23.5)	13 (40.6)			
Secondary	22 (64.7)	17 (53.1)			
Tertiary	4 (11.8)	2 (6.3)			
Marital status			4.810	3	0.186
Single	23 (67.6)	26 (81.3)			
Married	5 (14.7)	4 (12.5)			
Divorced	6 (17.6)	1 (3.1)			
Widowed	0 (0.0)	1 (3.1)			
Living condition			2.362	3	0.501
Family	10 (29.4)	14 (43.8)			
Alone	9 (26.5)	6 (18.8)			
Friends	1 (2.9)	0 (0.0)			
Hostel	14 (41.2)	12 (37.5)			
Income			2.860	3	0.414
Family	2 (5.9)	5 (15.6)			
Normal/Higher Disability Allowance	7 (20.6)	6 (18.8)			
Comprehensive Social Security Assistance	25 (73.5)	20 (62.5)			
Others	0 (0.0)	1 (3.1)			
Age (years)	43.91±10.38	46.91±8.92	-1.253	64	0.215
Global Assessment of Functioning score	66.53±8.87	66.59±9.42	-0.029	64	0.977
Brief Psychiatric Rating Scale score	21.76±14.02	26.88±12.47	-1.561	64	0.123

* Data are presented as No. (%) of patients or mean±SD

readiness for action (β=0.310, P<0.001), and lower self-esteem decrement (β=-0.225, P<0.01) were significant predictors for better treatment participation. These factors accounted for 36.6% of the variance in predicting treatment participation. As to treatment attendance, those with lesser psychiatric symptoms (β=-0.260, P<0.01) and females (β=0.204, P<0.05) were more likely to have better attendance. The overall model explained 11.3% of the total variance for predicting treatment attendance.

For path analysis, only the 'self-decrement' subscale of the CSSMIS was significantly associated with insight towards the achieved effect of psychiatric medication (r=0.234, P=0.061). Thus, only this self-stigma test score was included for further analysis. In model 1 (indirect effect of self-stigma), the goodness-fit-statistics (chi-square=6.166, df=3, P=0.104; CFI=0.909 [saturated model], 1.000 [default model]; RMSEA=0.101) did not fit well with this model. Self-stigma explained 5.5% of the variance for insight, and self-stigma plus insight explained 15.4% of the variance for stages of change. The model explained 10.3% of the total variance for treatment compliance. In model 2 (direct and indirect effects of self-stigma), the goodness-fit-statistics (chi-square=5.135, df=5, P=0.400; CFI=0.977 [saturated model], 1.000 [default model]; RMSEA=0.016) fitted well with the proposed path model. Self-stigma was found to exert both direct and indirect effects on reducing treatment compliance. Self-stigma explained 5.5% of the variance for insight, and self-stigma plus insight explained 15.4% of the variance for stages of change. Including the direct effect of psychiatric symptoms, the model explained 20.4% of the total variance for treatment compliance. The results for goodness-of-fit test (P<0.003) suggested that model 2 was significantly superior to model 1.

On the active intervention stage, there were significant differences between the two groups in baseline scores for 'stereotype agreement' [t(64)=2.407; P=0.019], 'self-concurrence' [t(64)=3.267; P=0.002], 'self-esteem decrement' [t(64)=2.717; P=0.008], and 'participation' [t(64)=2.130; P=0.037]. Thus, repeated measures ANCOVA was used to study the changes in these scores. Group x time interaction among the two groups showed overall significance in the self-esteem decrement subscale of the CSSMIS [F (2, 56)=4.916; P=0.011], the stages of change in continuous score of the CAQ-SPMI [F (2, 57)=3.959; P=0.025], and the participation subscale of the PTCS [F (2, 56)=3.501; P=0.037]. Post-hoc comparison suggested a significantly lower self-esteem decrement in the experimental group at mid (F=4.483; P<0.050) and post (F=10.004; P<0.025 with Bonferroni adjustment) assessments. The experimental group also possessed significantly better readiness for change at mid-assessment (F=6.010; P<0.025 with Bonferroni adjustment) and better treatment participation post-assessment (F=6.430; P<0.025 with Bonferroni adjustment). Nonetheless, no overall significance in group x time interaction was found for the SUMD and CGSS (Table 2).

Regarding the maintenance stage, participants in the experimental group demonstrated better self-esteem decrements and treatment participation than those in the comparison group at the post-assessment interval. Repeated measures ANOVA, however, revealed no difference in maintenance of the effect on self-esteem decrement and treatment participation in the two groups (Table 3).

Table 2. Repeated measures ANOVA/ANCOVA on the active intervention phase (group by time interaction)

Instrument*	Mean±SD score						Repeated measures ANOVA/ANCOVA		
	Pre-active		Mid-active		Post-active				
	Experimental	Comparison	Experimental	Comparison	Experimental	Comparison	F-value	P value	Effect size
CSSMIS score									
Stereotype awareness	86.00±14.80	79.78±13.95	74.71±18.13	74.25±14.42	74.82±20.61	74.75±14.22	0.756 (2, 57)	0.474	0.026
Stereotype agreement†	88.76±14.75	79.81±15.46	72.03±19.05	72.81±14.56	70.82±18.91	72.72±18.68	0.735 (2, 56)	0.484	0.026
Self-concurrence†	86.26±15.32	72.63±18.53	65.56±20.95	68.50±15.52	61.47±20.22	69.34±18.05	3.070 (2, 56)	0.054	0.099
Self-esteem decrement†	82.82±16.22	71.56±17.45	65.37±20.12	66.59±20.51	61.38±20.43	67.97±18.83	4.916 (2, 56)	0.011	0.147
CAQ-SPMI stages of change continuous score	8.51±1.57	8.40±1.32	8.78±1.42	7.86±1.25	8.42±1.37	8.15±0.96	3.959 (2, 57)	0.025	0.122
PTCS score									
Attendance	18.12±3.23	17.56±3.11	17.51±3.01	16.78±3.23	18.21±3.25	17.09±3.42	0.650 (2, 27)	0.526	0.022
Participation†	38.80±5.58	35.77±5.98	39.14±5.09	36.03±5.56	41.51±5.91	37.99±5.63	3.501 (2, 56)	0.037	0.111
SUMD score									
Mental illness (current)	2.76±1.91	3.47±1.76	2.94±1.83	3.14±1.82	3.15±1.94	3.69±1.73	1.686 (2, 57)	0.194	0.056
Mental illness (past)	2.50±1.85	3.34±1.70	2.85±1.83	3.03±1.88	3.03±1.95	3.69±1.80	0.992 (2, 57)	0.377	0.034
Medication (current)	1.56±1.33	2.06±1.68	1.14±0.69	2.07±1.58	1.35±1.04	1.91±1.51	0.544 (2, 57)	0.584	0.019
Medication (past)	1.53±1.26	2.03±1.67	1.33±1.00	1.80±1.40	1.41±1.08	1.84±1.42	0.097 (2, 57)	0.908	0.003
Consequence (current)	2.00±1.74	2.09±1.78	1.64±1.49	1.93±1.41	1.62±1.48	2.06±1.68	0.252 (2, 57)	0.778	0.009
Consequence (past)	2.03±1.68	2.03±1.71	1.64±1.49	1.90±1.38	1.62±1.48	2.06±1.68	0.517 (2, 57)	0.648	0.015
CGSS score	21.56±6.45	23.44±5.89	22.44±5.76	23.03±6.98	21.79±6.45	25.81±6.22	1.946 (2, 57)	0.152	0.064

* CSSMIS denotes Chinese Self-stigma of Mental Illness Scale, CAQ-SPMI Change Assessment Questionnaire for People with Severe and Persistent Mental Illness, PTCS Psychosocial Treatment Compliance Scale, SUMD Scale to Assess Unawareness of Mental Disorder, and CGSS Chinese General Self-efficacy Scale
† Repeated measures ANCOVA used

Table 3. Repeated measures ANOVA/ANCOVA on the maintenance phase (group by time interaction)

Instrument*	Mean±SD score								Repeated measures ANOVA/ANCOVA		
	Post-active		1st follow-up		2nd follow-up		3rd follow-up				
	Experimental	Comparison	Experimental	Comparison	Experimental	Comparison	Experimental	Comparison	F-value	P value	Effect size
CSSMIS self-esteem decrement score	61.38±20.43	67.97±18.83	58.21±18.30	66.88±14.46	60.06±17.42	62.81±18.41	65.06±21.85	63.53±17.17	2.204 (3, 62)	0.096	0.096
PTCS participation score	41.51±5.91	37.99±5.63	41.56±5.65	38.37±6.76	40.76±5.64	37.97±6.69	40.09±6.80	38.19±7.45	0.886 (3, 62)	0.453	0.041

* CSSMIS denotes Chinese Self-stigma of Mental Illness Scale, and PTCS Psychosocial Treatment Compliance Scale

Discussion

In the cross-sectional study, among individuals with schizophrenia, self-stigma was a significant predictor for psychosocial treatment compliance. Global functioning was the most significant predictor of treatment participation. Psychiatric symptoms and being female were significant predictors of treatment attendance. Both direct and indirect effects of self-stigma were associated with poor treatment compliance. With regard to the direct effect, self-stigmatised individuals were less willing to seek psychiatric services in anticipation of stigma, believing that the public labels those receiving mental health services as crazy and weak.[1] As to the indirect effect, self-stigmatised individuals have poor insight towards the beneficial effects of psychiatric treatment, particularly when individuals regard such negative aspects of psychiatric treatment as side effects and social stigma. Their poor insight limits their motivation to manage their own mental health problems, which then leads to treatment noncompliance.[4] Individuals with more psychiatric symptoms tend to have poorer compliance.

Caution is needed in the interpretation of these findings, as the relationship of these variables can be explained conversely. For instance, individuals with poor treatment compliance are more likely to be symptomatic and have poor recovery. The decline in personal functioning and the aggravation of psychiatric conditions then further facilitates the stigmatisation process. Individuals with more severe psychiatric symptoms have more difficulty formulating positive beliefs about self. These negative conceptions undermine the motivation to receive treatment.

Among individuals with schizophrenia, the self-stigma reduction programme had modest effects on improving self-esteem decrement, readiness to change one's own problematic behaviours, and psychosocial treatment participation. Furthermore, its therapeutic effects were not be maintained after completion of the programme. Different treatment approaches contributed to the reduction of self-stigmatisation. The readiness for change was enhanced after the participants completed the first half of the experimental protocol. Motivational interviewing may have contributed to the improvement in the experimental group.[5] This modality helped self-stigmatised individuals realise how their stigmatising beliefs and behaviours hindered their life pursuits, and discover the advantages and disadvantages of adopting their present behaviours.[5] Participants of the experimental group demonstrated better psychosocial treatment participation than those of the comparison group at the post-intervention assessment. Self-stigmatised individuals were more likely to endorse feeling of hopelessness and query the beneficial outcomes of psychosocial treatment. It is likely that better participation in treatment was due to improved self-esteem. No significant difference was noted in the domains of insight and self-efficacy. This may be due to the restricted treatment content disseminated.

Although many of the treatment effects were not significant, they had implications for developing effective treatment programmes for individuals with schizophrenia in the future. These could deal with self-stigmatisation by enhancing readiness for change and psychosocial treatment participation. In addition, the treatment effect was not long lasting. Further efforts are needed to strengthen the effect size and the long-term effectiveness of the self-stigma reduction programme. It is important to consider the characteristics and daily experience of participants when designing the treatment protocol. A supportive environment to liaise with participants' corresponding service units should be fostered. Furthermore, helping individuals with schizophrenia to develop a sense of urgency enables them to accept their illness and reject mental illness stigma.

There were several limitations in this study. First, the causality among variables could not be examined using the cross-sectional approach. Second, only a small number of participants were recruited from a small number of psychiatric settings, and may affect generalisation of the results. Third, 'fully non-compliant' individuals were not recruited, and may have led to selection bias. Fourth, a structural clinical interview for DSM-IV to verify the diagnosis of participants was not used. Fifth, certain generic measures (eg self-efficacy) were not sensitive enough to detect changes across time. Sixth, differential effects of different intervention strategies on how each of the intervention components contributed to the clinical

outcomes were not investigated. Seventh, the clinical significance of the programme was not investigated. Eighth, the effects of confounding variables (eg therapeutic alliances) were not accounted for and may have affected the validity.

Acknowledgements

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