

EFFECTS OF PAID WORK ASSIGNMENTS ON PSYCHOPATHOLOGY IN HOSPITALIZED CHRONIC SCHIZOPHRENIC PATIENTS

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Abstract

Background People with schizophrenia want to work but face many barriers when returning to work. Many factors such as demands of the labor market, work restrictions caused by illness, complications associated with disability benefits, limited availability of evidence-based programs contribute to poor employment

Aim The present study explored contribution of paid work assignments on psychopathology of hospitalized chronic schizophrenic patients.

Method 200 chronic schizophrenic patients were drawn in two groups (a) Experimental (n=100) (b) Control (n=100) from in-patients of Institute of Mental Health and Hospital, Agra. Between group repeat measures design was used in this study. Both the groups were engaged in different activities but payment was made to only experimental group. Scale for Assessment of Negative Symptoms (SANS).and Scale for Assessment of Positive Symptoms (SAPS) were used to measure Negative as well as Positive symptoms. The data were organized and processed in SPSS 11.5 version for relevant statistical analysis. Mean, S.D., chi-square, ANCOVA and charts were used to analyze and present the data. ANCOVA was used to cancel out the effects of baseline differences in scores and estimate group differences.

Result the result was shows that significant contribution of paid work activities in improving psychopathology.

Conclusion The pattern of longitudinal assessments revealed that both the groups improved but the paid group had greater improvement.

Key Words Vocational Rehabilitation, Chronic Schizophrenia, Paid Work and Severe Mental Illness

Introduction

Employment or work is considered as one of the major areas of functioning in the rehabilitation of mentally ill persons, specifically with schizophrenia. Having a mental illness is a critical concern for people with severe mental illness when seeking employment¹. People with schizophrenia want to work but face many barriers when returning to work. Many factors such as demands of the labor market, work restrictions caused by illness, complications associated with disability benefits, limited availability of evidence-based programs contribute to poor employment². Despite of barriers vocational rehabilitation has been shown to improve employment rates for individuals with schizophrenia and a variety of vocational rehabilitation interventions have been developed over the past few decades to enhance the vocational capacities of persons with this disorder. Researchers in recent years have explored different approaches to vocational rehabilitation including skills training methods, sheltered workshops, transitional employment, and supported employment^{1,2}.

Among the factors psychopathology is considered as a prominent one for job continuity. Prior researches attended the relationships between psychopathology and vocational functioning. Brier³

observed that quantity of work was related to improvements in both positive and negative symptoms. In another study⁴ correlated negative symptoms and work functions. Their results showed that the participants with prominent negative symptoms demonstrated poorer performance on task orientation and also reported that work therapy program is related to decrease in symptoms of emotional discomfort and hostility.⁵ Psychopathological indicators proved to be the best predictors of work performance both cross-sectionally as well as in the long term course^{6,7,8} and work participation was related to reduction in thought disorder.⁸

Schizophrenic symptoms were not significantly associated with functional outcome.⁹This is particularly more so for positive symptoms as compared to negative symptoms where some studies found negative symptoms but not positive symptoms to be associated with unemployment in schizophrenia^{3,10,11} Negative symptoms were related to hours, weeks, and wages earned on the job¹³ another study it was found that significant negative correlation of social functioning with positive symptoms, negative symptoms, and general psychopathology in patients with vocational

rehabilitation.²⁰ On the PANSS and general psychopathology scale shows that disability in work performance is correlated with mean scores on.²³ Vocational rehabilitation significantly improved negative symptoms and in quality of life¹⁸.

In a recent study reported that there was no significant association between overall psychopathology, positive or negative symptoms and employment.¹⁹ Role of symptoms in employment have been inconsistent with more studies showing negative symptoms but not positive symptoms as significant correlates of employment^{14,15} and conducted a review that identifies person-related factors which most strongly influence employment outcomes and found better social functioning.¹⁶ Findings on the severity of psychiatric symptoms measured during PVR were mixed. In terms of contribution to outcome, severity of symptoms usually ranked below work performance, when measured concurrently.

Aim

To study the effects of remunerative job on psychopathology of hospitalized chronic schizophrenic patients:

Method

Design between Group Repeat Measures

Venue This study is a part of an ICMR sponsored research project being carried out at Institute of Mental Health and Hospital, Agra.

Sample A sample of 200 chronic schizophrenic patients was drawn in two groups (a) Experimental (n=100) (b) Control (n=100) from in-patients of Institute of Mental Health and Hospital, Agra. Following inclusion/exclusion criteria was adopted to recruit the patients.

- The diagnosis of Schizophrenia as per ICD 10: Research Diagnostic Criteria (WHO, 1993)
- The patients with at least two years continuous duration of illness
- Co-operative and communicative patients who did not have management problems
- The age range of the participants: 20-55 years
- The written informed consent from the patients
- The patients having co-morbid psychiatric conditions; mental retardation, organic disorder and major physical illness were excluded.

Tools

Scale for Assessment of Negative Symptoms (SANS)²⁴ SANS assesses five symptom complexes to obtain clinical ratings of negative symptoms in patients with schizophrenia. They are: affective blunting; alogia (impoverished thinking); avolition/apathy; anhedonia/asociality; and

disturbance of attention. The final symptom complexes seem to have less obvious relevance to negative symptoms than the other four complexes. Assessments are conducted on a six-point scale (0=not at all to 5=severe)

Scale for Assessment of Positive Symptoms (SAPS)²⁵ this scale is designed to assess positive symptoms, principally those that occur in schizophrenia. It is intended to serve as a complementary instrument to the Scale for the Assessment of Negative Symptoms (SANS). These positive symptoms include hallucinations, delusions, bizarre behavior, and positive formal thought disorder.

Procedure

After obtaining informed consent, the suitability of the patients was determined as per the inclusion criteria listed above. The screened in participants were included and allocated to experimental and control groups. Their identifying details were recorded on a separate proforma.

Baseline Phase In this phase the screened in participants were assessed on SANS and SAPS by Senior Research Fellow

Job Assignment and Training Following occupational activities (1) **Ward Activities** (2) **Agriculture and Nursery.** (3) **Production Units** (candle making, envelope making, Tailoring, Spiral Binding, dona making, Weaving, Carpentry, Knitting, door mat making, stitching and embroidery). (4) **Patients' Kitchen** (5) **Campus Maintenance etc.** were available to the patients in the Institute. The patients were placed in these activities on the basis of their level of functioning, occupational background and patients' own willingness to work in these activities.

The participants of both the groups were trained on the spot to perform the selected tasks if required. The training was mostly provided by the vocational instructors of the Institute who are engaged in the units. The duration of the remunerated assignment was approximately 3 hours per day. Each participant of experimental group was credited with the remuneration @ Rs. 25/- per day. The logbook of the assignments and accrued remuneration were maintained by the project staff. The maximum duration of remunerative job for a participant was kept fixed for 50 days in approximately two months. The disbursement of the remuneration was done by the Finance Department of the Institute. The pharmacological regimen continued as per the requirement and prescription of the treating clinician.

First Assessment (Baseline) the first assessment at the time intake to the patient.

Second Assessment This assessment was conducted at the end of one month after commencement of training.

Third Assessment This assessment was conducted at the end of two months after commencement of training.

Follow up Phase The participants did not receive any remuneration during this phase. If hospitalized they continued to perform the assigned tasks.

The pharmacological regimen continued. The assessment were conducted at following points irrespective of institutional status of the participants

First follow up (Fourth Assessment): 3rd month of baseline

Second follow up (Fifth assessment): 6th month of baseline discharged patients were followed in OPD. Those who did not report in OPD for follow up, were contacted through phone and invited to the Institute for follow up assessments. They were paid travel expenses for the same.

Data Analysis The data were organized and processed in SPSS 11.5 version for relevant statistical analysis. Mean, S.D., chi-square, ANCOVA and charts were used to analyze and present the data. ANCOVA was used to cancel out the effects of baseline differences in scores and

Results			
Table-1: Sample Characteristics			
Characteristics	Experimental Group (n=100)	Control Group (n=100)	t-values/ χ^2 Values
Age (in years)	34.55 ±8.84	33.42±7.66*	0.33
Duration of Schizophrenic Illness (in years)	8.26±4.83	8.85±4.52*	0.37
Gender	Male	80	81
	Female	20	19
Education	Nil	8	23
	Upto H.Sc	68	45
	Above H.Sc	24	32
Domicile	Rural	53	61
	Urban	47	39
Marital Status	Married	64	73
	Unmarried	36	27
SES	High	2	2
	Middle	71	59
	Low	27	39
Family H/O Psychiatric Illness	No	77	72
	Yes	23	28
*Significant at .01 level			

estimate group differences.

Chi-square and t-tests were computed to examine group differences on sample characteristics. Table-1 indicates that both the groups were comparable on most of the variables except Education; the control group had higher illiterate participants.

Comparison of Total Experimental and Control Group on SANS Figure-1 depicts mean scores on SANS across phases. It clearly reveals that there were little differences at baseline in two groups but on second assessment marked

differences in SANS scores of baseline and statistically significant differences in subsequent assessment (Table-2). The experimental group scored significantly lower than the control group (Table-3).

Comparison of Total Experimental and Control Group on SAPS Figure-2 depicts mean scores on SAPS across phases. It clearly reveals that there were little differences at baseline in two groups but on second assessment marked differences emerged in two groups which were maintained over subsequent assessments. The

Table-2: Mean and S.D. of SANS Scores across phases			
Assessment Phases	Groups	N	Mean
SANS-First Assessment (Baseline)	Experimental	100	9.83
	Control	100	10.57
SANS-Second Assessment	Experimental	100	6.11
	Control	99	8.41
SANS-Third Assessment	Experimental	100	2.61
	Control	99	7.68
SANS-Fourth Assessment	Experimental	100	2.41
	Control	98	6.78
SANS-Fifth Assessment	Experimental	100	2.24
	Control	98	6.21

differences emerged in two groups which were maintained over subsequent assessments. The experimental group had lower scores.

The mean and SD score of paid group at Baseline (First Assessment) are M=9.83 S.D.= 6.122 and non paid group are M=10.57 S.D.= 5.507 (Table-2) ,F(1,198)=.808, **p=.370**; Partial $\eta^2 = .004$ (Table-3). In Second Assessment mean and SD score of paid group M=6.11 S.D.=4.452 and non paid group M=8.41 S.D.= 5.370 (Table-2)F(1,97)=10.858, **p=.001**; Partial $\eta^2 = .052$ (Table-3). In Third Assessment the mean and SD score of paid group M=2.61 S.D.=3.467; and non paid group are M=7.68 S.D.= 5.818 (Table-2) F(1,197)=55.819, **p=.001**; Partial $\eta^2 = .221$ (Table-3) In Fourth Assessment the mean and SD score of paid group M=2.41 S.D.=3.220; and non paid group are: M=6.78 S.D.=5.410(Table-2) F(1,196)=47.831, **p=.001**; Partial $\eta^2 = .196$ (Table-3); and In Fifth Assessment the mean and SD score of paid group M=2.24 S.D.=2.843; and non paid group are M=6.21 S.D.=5.069(Table-2) F(1,196)=46.535, **p=.001**; Partial $\eta^2 = .192$ (Table-3)

The above scores indicate no significant group

experimental group had lower scores.

The mean and SD score of paid group at Baseline (First Assessment) are M=8.88 S.D.= 5.480; and non paid group are M=9.41 S.D.= 4.845 (Table-4) F(1,198)=.525, **p=.470**; Partial $\eta^2 = .003$ (Table-5). In Second Assessment the mean and SD score of paid group M=4.01 S.D.=3.842 and non paid group are M=7.33 S.D.= 4.662 (Table-4)F(1,197)=30.143, **p=.001**; Partial $\eta^2 = .133$ (Table-5). In Third Assessment the mean and SD score of paid group M=1.79 S.D.=2.587 and non paid group are M=6.83 S.D.= 4.971(Table-4) F(1,197)=80.650, **p=.001**; Partial $\eta^2 = .290$ (Table-5). In Fourth Assessment the mean and SD score of paid group M=1.78 S.D.=3.064; and non paid group are M=6.04 S.D.=4.951(Table-4) F(1,196)=53.256, **p=.001**; Partial $\eta^2 = .214$ (Table-5). and In Fifth Assessment the mean and SD score of paid group are M=1.78 S.D.=2.485 and non paid group are M=5.68 S.D.=4.742 (Table-4) F(1,196)=52.941, **p=.001**; Partial $\eta^2 = .213$ (Table-5).

The above scores indicate no significant group differences in SAPS scores of baseline and

Assessment Phases	Sources	Sum of Squares	df	Mean Square	F	Sig.
SANS-First Assessment (Baseline)	Between Groups	27.380	1	27.380	.808	.370
	Within Groups	6712.620	198	33.902		
	Total	6740.000	199			
SANS-Second Assessment	Between Groups	264.119	1	264.119	10.868	.001
	Within Groups	4787.810	197	24.304		
	Total	5051.930	198			
SANS-Third Assessment	Between Groups	1277.156	1	1277.156	55.819	.001
	Within Groups	4507.447	197	22.880		
	Total	5784.603	198			
SANS-Fourth Assessment	Between Groups	943.259	1	943.259	47.831	.001
	Within Groups	3865.251	196	19.721		
	Total	4808.510	197			
SANS-Fifth Assessment	Between Groups	781.770	1	781.770	46.535	.001
	Within Groups	3292.740	196	16.800		
	Total	4074.510	197			

Assessment Phases	Groups	N	Mean
SAPS- First Assessment (Baseline)	Experimental	100	8.88
	Control	100	9.41
SAPS-Second Assessment	Experimental	100	4.01
	Control	99	7.33
SAPS-Third Assessment	Experimental	100	1.79
	Control	99	6.83
SAPS-Fourth Assessment	Experimental	100	1.78
	Control	98	6.04
SAPS-Fifth Assessment	Experimental	100	1.78
	Control	98	5.68

Table-5: Results of One Way ANOVA for SAPS across phases						
Assessment Phases	Sources	Sum of Squares	df	Mean Square	F	Sig.
SAPS-First Assessment (Baseline)	Between Groups	14.045	1	14.045	.525	.470
	Within Groups	5296.750	198	26.751		
	Total	5310.795	199			
SAPS-Second Assessment	Between Groups	549.452	1	549.452	30.143	.001
	Within Groups	3590.990	197	18.228		
	Total	4140.442	198			
SAPS-Third Assessment	Between Groups	1262.837	1	1262.837	80.650	.001
	Within Groups	3084.671	197	15.658		
	Total	4347.508	198			
SAPS-Fourth Assessment	Between Groups	898.559	1	898.559	53.256	.001
	Within Groups	3306.997	196	16.872		
	Total	4205.556	197			
SAPS-Fifth Assessment	Between Groups	754.237	1	754.237	52.941	.001
	Within Groups	2792.354	196	14.247		
	Total	3546.591	197			

statistically significant differences in subsequent assessments. (Table-4) The experimental group scored significantly lower than the control group (Table-5).

Discussion

The objective of the study was to explore if paid work assignment has any contribution in reducing psychopathology of hospitalized chronic schizophrenic patients. The results indicate that paid work significantly contributed in reducing both positive and negative symptoms of experimental subjects. There are a few studies that investigated the effects of remuneration on clinical and psychosocial status of chronic schizophrenic patients. The results of the present study are in agreement with the findings of earlier studies.

Kumar²⁰ studied the impact of vocational rehabilitation on psychopathology in in-patients with chronic schizophrenia through PANSS. He found significantly lowered positive and negative

syndrome in experimental group compared to control group. The experimental group was engaged in vocational activities and paid monetary incentive for the same. The control group was neither engaged in any rehabilitation activities nor received any payments. In this paradigm, it was not possible to ascertain whether the improvement in psychopathology was just due to participation in work or payment or a combination of two. The present study took care of it and engaged the control group in the same activities in which experimental group was engaged. This permitted isolation of the differential effects of remuneration. The results revealed superior outcomes for the paid group. Ajimol²¹ from Bangalore noted a higher degree of overall functioning and reduced symptoms in rehabilitated patients compared to those not vocationally rehabilitated.

In a study 150 patients with schizophrenia or Schizoaffective Disorder to Pay or No-Pay condition and placed them in jobs.²² The effects of pay conditions on psychopathology were assessed through

PANSS. To assess changes in level of symptom severity from intake to follow up, mean scores were calculated for the PANSS Total Scores and the five component scores for subjects in pay and no-pay condition. Analysis of Covariance (ANCOVA) was used to partial out the effects of baseline scores. The results revealed that Pay subjects showed significantly lower symptom scores. Danial¹⁸ also reported that vocational rehabilitation significantly improved negative symptoms and in quality of life. Psychopathological indicators proved to be the best predictors of work performance both cross-sectionally as well as in the long term course⁷ and found negative symptoms but not positive symptoms to be associated with unemployment in schizophrenia.^{12, 3} Recent studies on person related factors on vocational outcome suggest that severity of symptoms rank below work performance when measured concurrently but it has significant role in vocational outcome. Payment as such having reinforcing capacity can be used in various employment programmes to reduce psychopathology and enhance the output of patients.

Conclusion

The results of the present study clearly indicate that paid work assignment results in reduction in both positive symptoms and negative symptoms in hospitalized chronic schizophrenic patients. It implicates the significant contribution of work participation of the patients not only for the purposes of vocational rehabilitation but also for gains in psychopathology. A model of remuneration based involvement of the patients is being contemplated by this work. The study adopted a quasi-experimental approach. The model remains to be tested through randomized controlled trials for demonstration of its efficacy in symptom improvement and changes in work related behaviors.

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