

## Medication Adherence, Work Performance and Self-Esteem among Psychiatric Patients Attending Psychosocial Rehabilitation Services at Bangalore, India

Sailaxmi Gandhi, Rajitha Pavalur, Sivakumar Thanapa<sup>1</sup>, Nirmala B. Parathasarathy<sup>2</sup>, Geetha Desai<sup>1</sup>, Poornima Bhola<sup>3</sup>, Mariamma Philip<sup>4</sup>, Santosh K. Chaturvedi<sup>1</sup>

### ABSTRACT

**Context:** Work benefits mental health in innumerable ways. Vocational rehabilitation can enhance self-esteem. Medication adherence can improve work performance and thereby the individuals' self-esteem. **Aim:** To test the hypothesis that there would be a significant correlation between medication adherence, work performance and self-esteem. **Setting and Design:** A quantitative, descriptive correlational research design was adopted to invite patients attending psychiatric rehabilitation services to participate in the research. **Material and Methods:** Data was collected from a convenience sample of 60 subjects using the 'Medication Adherence Rating scale', 'Griffiths work behaviour scale' and the 'Rosenberg's Self-esteem scale'. **Statistical analysis used:** Analysis was done using SPSS18 with descriptive statistics, Pearson's correlation coefficient and multiple regression analysis. **Results:** There were 36 males and 24 females who participated in this study. The subjects had good mean medication adherence of  $8.4 \pm 1.5$  with median of 9.00, high mean self-esteem of  $17.65 \pm 2.97$  with median of 18.0 and good mean work performance of  $88.62 \pm 22.56$  with median of 93.0. Although weak and not significant, there was a positive correlation ( $r = 0.22, P = 0.103$ ) between medication adherence and work performance; positive correlation between ( $r = 0.25, P = 0.067$ ) medication adherence and self-esteem; positive correlation between ( $r = 0.136, P = 0.299$ ) work performance and self-esteem. Multiple regression analysis showed no significant predictors for medication adherence, work performance and self-esteem among patients with psychiatric illness. **Conclusions:** Medication monitoring and strengthening of work habit can improve self-esteem thereby, strengthening hope of recovery from illness.

**Key words:** Medication adherence, self-esteem, work performance, vocational rehabilitation

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### INTRODUCTION

There is a paucity of knowledge and understanding regarding how psychotropic medications impact on work performance of persons with mental illness.<sup>[1]</sup> Work performance can play a vital role in enhancing self-esteem.

This research was carried out to understand the

Departments of Nursing, <sup>1</sup>Psychiatry, <sup>2</sup>Psychiatric Social Work, <sup>3</sup>Clinical Psychology, <sup>4</sup>Biostatistics, National Institute of Mental Health and Neurosciences, Bangalore, Karnataka, India

**Address for correspondence:** Dr. Sailaxmi Gandhi  
Department of Nursing, NIMHANS, Hosur Road, Bangalore-560 029, Karnataka, India. E-mail: sailaxmi63@yahoo.com

relationship between medication adherence, work performance and self-esteem. We aimed to assess and correlate medication adherence, work performance and self-esteem among patients with mental illness attending psychiatric rehabilitation services. We also hoped to identify predictors for these three variables from the subjects' socio-demographic variables. This could help plan and design specific intervention modules that would help strengthen the relation between medication adherence, work performance and self-esteem.

## MATERIAL AND METHODS

### Aim

1. To explore the relation between medication adherence, work performance and self-esteem among patients with mental illness attending a psychiatric rehabilitation facility.

### Objectives

1. To assess and correlate medication adherence, work performance and self-esteem among patients with mental illness attending a psychiatric rehabilitation facility.
2. To identify predictors of medication adherence, work performance and self-esteem

### Hypothesis

There will be a statistically significant correlation between medication adherence, work performance and self-esteem among patients with mental illness attending a psychiatric rehabilitation facility at Bangalore, India.

### Research design

A quantitative, descriptive, correlational research design

### Participants

After approval by the Institute Ethics Committee and following informed consent from the patients as well as their family members including a detailed explanation about the risks and benefits involved, 60 patients of both genders attending the psychiatric rehabilitation services (PRS) of a super-speciality neuro-psychiatric hospital at Bangalore, India were invited to participate in this research. Patients with less than 1 month attendance at the PRS were excluded from the study as we felt that a period of more than at least 1 month could help assess work performance. Due to this exclusion criterion, of the 70 patients attending PRS, only 60 (who were willing to participate in the study) formed the convenience sample.

### Research tools

Data was collected using the 'Medication Adherence

Rating scale' (MARS),<sup>[2]</sup> 'Griffiths work behavior scale'<sup>[3]</sup> and the 'Rosenberg's Self-esteem scale'<sup>[4]</sup> as well as a researcher-prepared socio-demographic performa.

The MARS<sup>[2]</sup> is a 10-item yes/no self-report instrument. It was developed from two existing scales, the 30-item Drug Attitudes Inventory<sup>[5]</sup> and the 4-item Medication Adherence Questionnaire (MAQ),<sup>[6]</sup> with the aim of developing a more reliable and valid tool for assessing medication adherence behavior in psychosis. Total scores range from 0 (low likelihood of medication adherence) to 10 (high likelihood). The MARS is a quick, non-intrusive measure of medication adherence. Its reliability is adequate, but validity appears only moderate-weak. Test retest scores at 0 and 12 months were correlated ( $r = .52, P < .001$ ), indicating that MARS total score remains moderately stable over time. A positive correlation of 0.6 between the MARS adherence score and blood lithium levels suggested construct validity. The 25-item Griffiths Work Behavior Scale<sup>[3]</sup> is used to assess work skills. The scale measures job skills' using bipolar statements such as 'grasps instructions quickly' versus 'cannot grasp instructions'. Each item is rated on a five point scale ranging from one — the least desirable to five — the most desirable rating. The Griffiths scale was developed using a sample of persons with severe psychiatric disability. The measure has demonstrated adequate validity and reliability including inter-rater reliability ranging between 0.70 and 0.84 (using the Spearman rho) and test re-test reliability of 0.75. In terms of predictive validity, the scale was able to differentiate employed from unemployed subjects ( $t = 10.2, df = 26, P < 0.001$ ).<sup>[3]</sup> The Rosenberg's self-esteem scale is a standardized tool with high reliability values of .80, internal consistency 0.77 to 0.88, test-retest of 0.82 to 0.85 and criterion validity of 0.55.<sup>[4]</sup>

### Analysis

Data obtained was analysed using spss 16 with descriptive statistics, Pearsons correlation coefficient and multiple regression analysis. It was decided that  $P < 0.05$  would be used to test significance levels.

## RESULTS

### Descriptives

Table 1: Personal profile of the subjects ( $n = 60$ )

Of the 60 patients who participated in the research, 36 (60%) were males, with mean age of  $35.45 \pm 11.69$ . Although six (10%) of them had no formal education, a large number of them i.e., 32 (53.3%) had completed high school. In this particular hospital, patients earning less than Rs.19, 999/year were considered to be below

the poverty line (BPL). Almost equal number of them seemed to belong to the above poverty line (APL) as well as BPL income group. Fifty-four (90%) of them had family support. Most of the subjects i.e., 55 (91.7%) were receiving medications.

Table 2: Illness profile of the subjects (*n* = 60)

Thirteen (21.7%) patients had received a diagnosis of schizophrenia. Eleven (18.3%) patients were diagnosed to be mentally retarded (MR) with psychiatric comorbidity and 10 (16.7%) were mentally retarded with medical comorbidity. There were also patients with depression, BPAD, OCD and schizoaffective disorders.

Table 3: Medication profile of the subjects (*n* = 60)

Quite a large number of patients were receiving antipsychotics i.e., 32 (58.2%). Other patients were on anti-depressants, mood stabilizers, anti-hypertensive's and anti-epileptics.

Table 4: Work profile of the subjects (*n* = 60)

Printing and tailoring sections seemed to be favorite choices among 12 (20%) patients, followed by nine patients (15%) in the candle section and seven patients (11.7%) in the computer section. Patients also worked in other sections such as mat weaving, blow moulding, craft and the leather section. There was even one patient who worked as a hospital assistant in the Radiology department.

**Medication adherence, work performance and self-esteem**

Table 5: Level of medication adherence, work performance and self-esteem in the subjects (*n* = 60)

The subjects had good medication adherence ( $8.40 \pm 1.49$ ) with median of 9.00, good work performance ( $88.62 \pm 22.56$ ) with median of 93.0 and high self-esteem ( $17.65 \pm 2.97$ ) with median of 18.0.

Figure 1: Correlation between medication adherence, work performance and self-esteem among the subjects (*n* = 60),  $P > 0.05$ , NS.

Although weak and not significant, there was a positive correlation ( $r = 0.22$ ,  $P = 0.103$ ) between medication adherence and work performance; positive correlation between ( $r = 0.25$ ,  $P = 0.067$ ) medication adherence and self-esteem; positive correlation between ( $r = 0.136$ ,  $P = 0.299$ ) work performance and self-esteem.

Multiple regression analysis showed no significant predictors for medication adherence, work performance

**Table 1: Personal profile of the subjects (*n* = 60)**

Variable	Frequency	Percentage
Gender		
Male	36	60.0
Female	24	40.0
Education		
No formal education	6	10.0
Till SSLC	32	53.3
PUC	8	13.3
UG (undergraduate)	12	20.0
PG (post graduate)	2	3.3
Income		
APL	27	45.0
BPL	33	55.0
Family support		
Yes	54	90.0
No	6	10.0
On medication		
Yes	55	91.7
No	5	8.3

**Table 2: Illness profile of the subjects (*n* = 60)**

Diagnosis	Frequency	Percentage
Mental retardation (MR)	4	6.7
MR with psychiatric comorbidity	11	18.3
MR with medical comorbidity	10	16.7
Schizophrenia	13	21.7
Schizophrenia with psychiatric comorbidity	3	5.0
Schizophrenia with medical comorbidity	2	3.3
Schizoaffective disorder	3	5.0
BPAD mania	8	13.3
Depression	2	3.3
Delusional disorder	1	1.7
OCD with psychiatric comorbidity	2	3.3
OCD with medical comorbidity	1	1.7

**Table 3: Medication profile of the subjects (*n* = 60)**

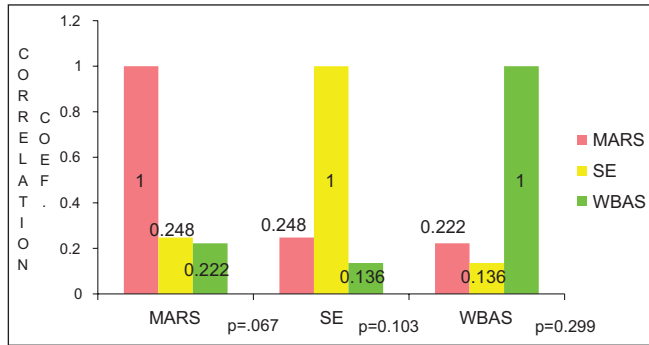
Type of medication	Frequency	Percentage
Antipsychotics	32	58.2
Antidepressants	6	10.9
Mood stabilizers	11	20.0
Antiepileptics	5	9.1
Antihypertensive's	1	1.8

**Table 4: Work profile of the subjects (*n* = 60)**

Section placed in	Frequency	Percentage
Bamboo section	2	3.3
Candle section	9	15.0
Bakery section	2	3.3
Printing section	12	20.0
Mat weaving section	1	1.7
Tailoring section	12	20.0
Computer section	7	11.7
Plastic molding section	5	8.3
Weaving section	2	3.3
Craft section	4	6.7
Leather section	3	5.0
Radiology	1	1.7

**Table 5: Level of medication adherence, work behavior and self-esteem in the subjects (n = 60)**

Variable	Mean ± SD
Medication adherence	8.40±1.49
Work behavior	88.62±22.56
Self-esteem	17.65±2.97



**Figure 1:** Correlation between medication adherence, work behavior and self-esteem among the subjects (n=60),  $P>0.05$ . MARS – Medication adherence rating scale; SE – Self-esteem; WBAS – Work behaviour assessment scale; NS – Not significant

and self-esteem among patients with psychiatric illness.

## DISCUSSION

### Descriptives

In our study, 60% of the subjects were males, 53.3% had received education up to tenth standard, 55% belonged to the BPL category and 90% had family support. It is quite appreciable that 53.3% were educated up to tenth standard. Since this is a hospital that catered to the needs of people belonging to the BPL category, it is understandable that 55% of the subjects in our study were from this category. It is also not surprising that 90% had family support as Indians generally keep their sick family members with them. Contrastingly, Tranulis, Goff, Henderson and Freudenreich (2011) found in their study on medication adherence at a community mental health centre outpatient clinic affiliated with the Massachusetts General Hospital Schizophrenia Program, that 85% of the subjects were male, 70% were impoverished and had mean education up to  $12.2 \pm 2$  years.<sup>[7]</sup>

We found that 21.7% of the subjects had schizophrenia, 18.3% were MR with psychiatric co-morbidity and 16.7% were MR with physical comorbidity. Many subjects (58.2%) were receiving antipsychotics. In contrast Tranulis, Goff, Henderson and Freudenreich (2011) reported that 70% of subjects in their study had schizophrenia and 90% were on antipsychotic monotherapy.<sup>[7]</sup>

In our study, majority of the subjects seemed to prefer working in the tailoring and printing section. These are

jobs which can be home-based and probably this was the reason for these sections being a popular choice. Computer and candle sections also seemed to be favorites among the subjects. Subjects and their family members reported that they felt more comfortable telling neighbors and relatives that the subjects came to the PRS to work on computers. One subject worked as a hospital assistant in the radiology department. Once work behavior was established, this subject would be employed on contract basis by the hospital.

### Medication adherence, work performance and self-esteem

The subjects in our study had good medication adherence ( $8.40 \pm 1.49$ ) with median of 9.00, good work performance ( $88.62 \pm 22.56$ ) with median of 93.0 and high self — esteem ( $17.65 \pm 2.97$ ) with median of 18.0. Estimates of the frequency of non-adherence to antipsychotic medication vary, with review studies suggesting the rate lies between 25 and 55%.<sup>[8-10]</sup> In the Psychological Prevention of Relapse in Psychosis (PRP) Trial (ISRCTN83557988), the mean MARS score for the 277 participants was 6.0 (SD = 2.2), with a range of 0-10. The subjects were outpatients with 84.5% having a diagnosis of schizophrenia and recruited from specified clinical teams in London and East Anglia.<sup>[11]</sup> However, the authors of these studies have not mentioned whether these persons were undergoing vocational rehabilitation.

Van Dongen CJ compared QOL and SE in 51 working and 41 non-working persons with mental illness and found that working persons reported significantly higher SE ( $t = 2.17, df = 90, P = 0.33$ ).<sup>[12]</sup> Bond *et al.*, (2001) reviewed cumulative effects of work on symptoms, SE and QOL among 149 unemployed clients with severe mental illness receiving vocational rehabilitation and found higher SE in the competitive work group.<sup>[13]</sup> Dunn, Wewiorski and Rogers (2008) interviewed 23 individuals with serious mental illness and found that work fostered pride and self-esteem, facilitated the process of recovery and played a central role in their lives and identities.<sup>[14]</sup> Nuechterlein *et al.*, (2008) conducted a RCT and compared a combination of individual placement and support (IPS) and skill training with brokered vocational rehabilitation and broad-based social skills training.<sup>[15]</sup> The authors concluded that an integrated program of supported education and supported employment would better fit the initial period. Tranulis, Goff, Henderson and Freudenreich (2011) reported that 35% of subjects linked antipsychotic medication with self-esteem and stigma.<sup>[7]</sup> A consecutive sample of 1,190 individuals attending an open-access psychiatric outpatient clinic that employed patients showed significantly ( $F_{5, 772} = 3.97, P < 0.01$ ) higher self-esteem scores

on the Rosenberg self-esteem scale as compared to unemployed patients.<sup>[16]</sup> Probably employment enhanced self-esteem in this group of patients. Significantly negative correlation between symptoms and work performance was found among 275 clients of the three psychosocial rehabilitation programs.<sup>[17]</sup>

In our study, although not significant ( $P = 0.067$ ,  $P = 0.103$ ,  $P = 0.299$ ), medication adherence, work performance and self-esteem were slightly positively correlated. Possibly larger sample size would help determine the relation between these three variables. However, working in the various sections and participating in the rehabilitation program does seem to have a positive impact on the medication adherence as well as subjects' self-esteem which itself can lead to enhanced quality of life and subjective well-being.

#### Implications

The levels of medication adherence, work performance and self-esteem are quite appreciable in the subjects. There is a positive correlation between medication adherence, work performance and self-esteem although it is not significant. This suggests that strengthening medication adherence and providing supported employment for persons with mental illness may contribute to enhanced self-esteem. Rehabilitation needs to start from the day of diagnosis itself and focus should be on establishing work behavior.

#### Limitations

Findings from this study need to be treated with caution as randomization was not done, the sample is not homogenous and this is a cross-sectional study.

#### Recommendations

Further research in the rehabilitation facility can be conducted on variables such as emotional climate, quality of life, independent living skills, social skills, stigma perception and caregiver burden. Qualitative studies on patients experience when placed in supported jobs may contribute to more hypotheses that can be tested.

## CONCLUSION

The positive correlation between medication adherence, work behavior and self-esteem although weak suggests that supported work can impact favorably on medication adherence and self-esteem. Large-scale studies with randomization may throw further light on the relationship between these variables.

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