Incentives for Involvement in Income Generation Programs: Pragmatic Mechanisms Used by Indian Mental Health Rehabilitation Centers

Using token economy and monetary incentives as reinforcers is an evidence-based practice in psychiatry. It has improved self-care activities, social interaction, behavior, self-esteem, work participation, and productivity. In India, both the token economy and monetary incentives have been used effectively to motivate and reinforce clients’ work involvement. The type of reinforcer used and its operationalization vary across mental health rehabilitation centers (hereafter referred to as “centers”). There is a need to understand the pragmatic mechanisms of incentivization evolved by different centers.

Methodology

Our previous publication described the selected centers, the range of income generation programs (IGP) and related practices, and the proforma used for gathering data. This article describes the type and quantum of incentives and strategies used to calculate incentives for clients involved in IGP.

Results

Among the 13 selected centers, the majority (n = 12) provided monetary incentives to clients. One center used the token economy. Most centers (n = 10) gave incentives monthly by cash, while two centers transferred it to the clients’ bank accounts. The monetary incentives ranged from ₹20 to ₹6000 per month (data not available for four centers). Two centers running vocational training centers paid salaries ranging from ₹7500 to ₹15000.

For calculating the incentives, the centers used various indicators, which were either related to the client’s attendance (including days worked and hours worked) or work (including work productivity, work performance, improvement, involvement, and the number of items made) or a combination of both. Eight centers used both attendance and work indicators (Table 1).

Discussion

All centers used reinforcers for motivating the client’s participation in various IGP. The quantum and frequency of incentives varied substantially across centers. Using incentives for reinforcing work participation improves social and occupational functioning and reduces behavioral problems. Monetary incentives serve as an income source through work involvement for those who cannot sustain competitive employment. Available literature states that some clients use incentives to buy medications and support their families.

Centers used diverse strategies to incentivize clients’ participation in IGP. Using attendance as an indicator appears straightforward, more comfortable, and less time-consuming but fails to consider the client’s productivity. Therefore, this strategy may suit low-functioning clients (persons with severe to profound developmental disabilities or prominent negative symptoms) or where rehabilitation primarily aims at engagement.

Using work indicators can be better suited for moderate- to high-functioning clients, as the strategy reinforces work differentially by assessing various performance-related outcome measures. A few limitations of this approach are (a) lack of standardized tools to measure work performance, (b) likelihood of subjective bias—it is challenging to measure all objective dimensions of performance with equal precision, (c) labor-intensiveness—it involves identifying work indicators, monitoring and measuring those indicators, and calculating the incentives for each client.

Combined approaches can take both attendance and work into account. Thus, it can be the most appropriate strategy for incentivizing clients with different needs and functionality and at different stages in their readiness to participate in various vocational activities. Eight centers had adopted the combined approach, possibly as they cater to a mixed group of clients (mental illness and intellectual developmental disabilities) with varying functionalities.

Limitation

Incentivization was explored at the institutional level and not at the individual level.

Conclusion

Indian centers use monetary incentives and token economy for reinforcing the clients’ participation in IGP, which highlights the practical utility of the approach. Incentives were offered depending on the clients’ attendance, work, or both. Using a combined approach of incentivization that incorporates both attendance and work-related indicators can be an effective method to accommodate the clients’ varying functionality. Further research is needed to understand the impact of using different incentive methods, its long-term implications for desired vocational rehabilitation outcomes, and its utility from the clients’ and caregivers’ perspectives.

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|| Strategies of Incentivizing Used by the Centers |
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| **Center** | **Strategy** |
| A. | Two strategies used:  
1. 60% of the total profits from the sales shared with the clients, based on attendance and work productivity  
2. Fixed incentives paid based on the number of completed product (e.g.: ₹15 for making 100 paper covers) |
| B. | A fixed amount is given after the completion of one year of training, based on attendance |
| C. | Fixed token for each item made, recorded as points (1 point equivalent to ₹1) daily, which can be exchanged for rewards (mostly snacks), e.g., 50 points (big) and 30 points (small) cloth bags |
| D. | Daycare center:  
₹1/day for attendance + ₹50/activity + ₹500–5000 for work productivity  
Residential center:  
₹50–500/month based on attendance and work productivity |
| E. | Used formula: ([level incentive/ no. of working days × no. of days worked] + attendance incentive + incentives for extra hours worked)  
- Level incentive: Level I = ₹200; Level II = ₹400; Level III = ₹600; Level IV = ₹1000; Level V = ₹1500; Level VI = ₹2000  
- ₹5/day for attendance  
- ₹5/hr for extra hours of work |
| F. | Residential center:  
- Salary = ₹3000–5000 based on the type of work  
- Stipend = ₹500–1500 based on the type of work  
- Incentives = ₹200–500 based on the hours worked  
Vocational training center:  
- Salary = ₹7500–8000 (fixed amount)  
- Stipend = ₹2500–4000 based on work done  
- Incentives = ₹500–2500 based on hours worked |
| G. | Daycare center:  
- Fixed amount for each item made; for example, clients making eco-pens get ₹2/pen, client on sales counter gets ₹1/pen sold  
Vocational training center:  
- Each day, client is given points from 1 to 50 (attendance—10 points, level of work—20 points, and work behavior—20 points); total points are multiplied by 5.  
- Clients handling machines get a fixed salary of ₹10000–15000, based on years of experience. |
| H. | Profits shared based on the client’s involvement |
| I. | 80% of total profits, based on involvement |
| J. | ₹2000–6000/month, based on attendance and work productivity |
| K. | Fixed incentive based on attendance |
| L. | Used proforma (includes attendance, work performance, self-help skills, and social behavior) |
| M. | Incentives based on duration and level of involvement |

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### Late Occurrence of Antitubercular-Treatment-Induced Psychosis—A Case Report

Several antitubercular medications are known to cause neuropsychiatric adverse reactions (ADR), including delirium, depression, mania, psychosis, and seizure disorder. Neuropsychiatric ADR usually appears during the initiation of treatment or while changing from a previously prescribed regime. The development of psychiatric ADR is rare during the continuation phase (CP), especially after a patient has been on a stable treatment regimen for several months. We herein report a case of antitubercular treatment (ATT) induced acute psychosis in a young female after 21 months of regular supervised treatment for extrapolumonal multidrug-resistant tuberculosis (MDR-TB).

#### Case Description

A 23-year-old unmarried female presented in January 2019 with a history of abrupt onset behavioral change for the last two days, characterized by suspiciousness, muttering and smiling to self, episodes of inappropriate laughter and crying, disturbed sleep, and diminished appetite. History also revealed “delusion of reference” and “delusion of persecution.” The patient was diagnosed with MDR tubercular chest wall abscess (right lower back) in May 2017 and was started on the MDR-ATT regimen. Since January 2018, she has been receiving standard treatment of CP, with tablet cycloserine 750 mg/day, ethionamide 750 mg/day, levofloxacin 750 mg/day, and ethambutol 1200 mg/day, as per the Revised National Tuberculosis Control Programme (RNTCP) regimen. There was no history of fever, head trauma, loss of consciousness, substance use, or any medication overdose. There was no past or family history of any psychiatric illness. There was no history of acute life stressors. Treatment history did not reveal the use of any cytochrome P450 enzyme inhibitor drugs.

During the examination, the patient was oriented to time, place, and person. Pulse rate was 90/min, and blood pressure 128/88 mmHg. Other general and systemic examination findings were within normal limits.

Mental state examination revealed poor rapport, fearful affect, delusions of reference and persecution, impaired judgment, and absent insight. At the time of hospitalization, her Brief Psychiatric Rating Scale (BPRS) score was 52.

Differential diagnoses of neuotuberculosis, immune-reconstitution-inflammatory syndrome (IRIS), and drug-induced psychosis were kept. After hospitalization, all ATT medications were withheld after pulmonary medicine consultation. The patient was started on T. risperidone 2 mg/day and T. lorazepam 2 mg/day. All blood investigations and neuroimaging were within normal limits (Table 1). Within 48 h, the patient started showing improvement, and within 4 days, she was completely free of her positive psychotic symptoms. Her BPRS score improved to 28. Risperidone was tapered and stopped on the seventh day. There was no recurrence of psychiatric symptoms, and the patient was discharged after 10 days. After 1 month, during her routine follow-up, she was maintaining well (BPRS score 19). Naranjo Adverse Drug Reaction Probability Scale score of 6 suggested a probable association.

#### Discussion

Neuropsychiatric ADR of antitubercular drugs are not uncommon. Psychiatric ADR pose an important challenge in the management of tuberculosis and significantly lower the quality of life of an individual on ATT. Isoniazid (first-line) and cycloserine (second-line) are the two most common anti-TB drugs associated with psychiatric ADR. However, ethambutol, ethionamide, and fluoroquinolones have also been reported to be associated with neuropsychiatric ADR. Several authors have suggested a higher initial dose of medication, hepatic insufficiency, extremes of age, and family history of psychosis as possible risk factors for developing drug-induced psychosis. The outcome of ATT-induced psychosis has varied from complete recovery to suicide.

In this case, the patient was on cycloserine, levofloxacin, ethionamide, and ethambutol – all of which are reported to be associated with drug-induced psychosis, but usually during an early course of the treatment. Yang et al. did a retrospective study on MDR-TB patients (N = 256) in South Korea and reported the incidence of psychiatric side effects to be 5.5%. After 6.5 months (on an average) of commencing ATT, cycloserine (one of the most common offending agent) was withdrawn in 3.9% of the patients. However, the development of ATT-induced psychosis nearly 2 years after a continuous treatment is