FROM DOTS TO STOPS — PUBLIC HEALTH INTERVENTION FOR SCHIZOPHRENIA IN LOW AND MIDDLE INCOME COUNTRIES

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ABSTRACT

Case management and early intervention strategies are well established for schizophrenia in the industrialized countries, majority of those with schizophrenia in low and middle income countries (LAMICs) do not have access to primary or secondary care psychiatric services. This results in an unacceptably high untreated and partially treated prevalence of the disorder. One of the fundamental problems in achieving and maintaining symptomatic recovery in schizophrenia is the lack of adherence to drug treatment. A number of programmes in LAMICs have shown that providing essential antipsychotic drugs under the supervision of a guardian, usually a relative, results in a significant reduction in the disability, psychotic symptoms and caregiver's burden. This article proposes a model of public health intervention based on the principles of DOTS (Directly Observed Treatment, Short course) which has been shown to be effective in overcoming non-adherence and maintaining long term treatment for Tuberculosis. We discuss the rationale for translating an intervention from a communicable disease to a non communicable chronic disorder based on preliminary analysis of data from our recent study and discuss how this can be implemented.

K**eywords**: Schizophrenia, Public health, Adherence, Intervention, Effectiveness.

THE CHALLENGE

It is ironic that while the early intervention for psychosis is a major priority in high income countries, the mental health professionals in the LAMICs face an entirely different challenge; to provide some treatment for those suffering from psychosis.

More than half of these countries have either no or less than 1% of health budget for mental health and the treatment gap for psychiatric disorders is close to 90%. Most individuals are, therefore left to cope with severe mental illness on their own[1]. Consequently, there is high untreated prevalence of schizophrenia in the form of undetected as well as inadequately and partially treated cases. While it may be difficult to reach for the undetected cases, the present level of untreated cases in patients who have had some contact with mental health services represents a catastrophic failure of mental health policy and services in these countries. In this article, we will argue that a public health intervention based on the principles of DOTS could be an effective strategy for coping with schizophrenia in these countries.

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WHAT IS DOTS?

A single case of tuberculosis can spread the disease to 10-15 persons on average[2]**.** DOTS (Directly Observed Treatment, Short course) was devised as a response to the public health challenge of non-adherence and maintaining long term treatment for tuberculosis.

DOTS has the following essential components. (For the discussion of all the five components of DOTS and its implementation see WHO, 1999)[2].

(a) A regular uninterrupted supply of all essential Anti TB drugs backed by governments' commitment to sustained TB control activities.

(b) Standardized treatment regimen of six to eight months chemotherapy under supervision. In many LAMICs the role of DOTS supervisor is assigned

to a family or a community member who regularly administers the drugs under close monitoring by a health worker.

The World Bank considers DOTS to be one of the most cost effective health interventions. DOTS are more cost effective than self-administered treatment[3, 4].

Supervised treatment for schizophrenia in community - What is the theoretical rationale?

We believe that there is urgent need for a public health intervention based on the principle of DOTS in developing countries in view of the following:

1. **The longer duration of untreated schizophrenia is associated with very serious Public health consequences.**

The enormous public health consequences of long duration of untreated psychosis is well documented in context of literature on duration of untreated psychosis[5]. These include increased co-morbid substance abuse, suicide, increased treatment resistance, impairment in cognitive and neuropsychological functions, offending behavior, vocational failure and overall poor outcome. The medication status is also the strongest predictor of relapse; discontinuation of medication increases the relapse risk five folds[6].

2. **The cost effective interventions for schizophrenia are available.**

Out of 20 recommendations for optimal treatment suggested by Schizophrenia Patient Outcome Research Team (PORT), 14 relate to pharmacological interventions. These were also rated to be highest on the ease for implementation[7]. These can be implemented in LAMICs provided essential drugs are made available. It has been argued that such an optimal treatment can at least avert 22% of burden of schizophrenia in developed countries[8]. In LAMICs where the treatment gap is very wide a much greater burden of illness could be averted by optimal pharmacological treatment.

3. **Patients suffering from Schizophrenia need supervision and it is possible.**

About 59% of patients may fail to adhere to their treatment in case of schizophrenia[9] which unlike TB, is also complicated by impaired insight and cognitive functioning. Supervision by the family members is therefore of critical importance if the therapy is to succeed.

One of the essential ingredients of DOTS i.e. monitoring the drug compliance by observing and recording the correct medication has also been described in a number of interventions aimed at improving treatment adherence in the treatment of schizophrenia[10-12]. A review of interventions to improve medication adherence in schizophrenia found that relatively brief interventions (both in terms of duration and frequency) which targeted the behaviors related to medication adherence were more effective than longer interventions with broader focus on psycho education[13].

4. **We owe it to the family.**

In LAMICs the family has largely 'subsidized' the treatment of schizophrenia for the society and the state at large by providing the social, psychological, residential and occupational support which constitute the major proportion of the cost of treatment for this disorder. Provision of free drugs to these patients as a part of DOTS programme would only help to share this burden in a small but very significant way.

5. **A strategy for communicable illness for a non communicable disorder?**

It could be argued that a strategy adopted for an infections disorder is unlikely to succeed for a non communicable disease, which runs a much longer course. It must, however be realized that the core problems in both the disorders is the lack of adherence and continuity of the treatment which results in a spiraling costs and a vicious cycle of chronicity and increasingly poor response to the well established treatments. Providing free access to the treatment and supervision by the family member should significantly reduce these problems.

From DOTS to STOPS (Supervised Treatment in Out Patients for Schizophrenia)?

Based on the rationale described above we started a small pilot project which incorporates the principles of DOTS. This is termed as Supervised Treatment in Out Patients for Schizophrenia (STOPS). This is a programme which aims to stop preventable relapses in schizophrenia through:

a. Provision of free psychotropic medication.

b. Training relatives in supervision of administration of medication to improve patient adherence with the drugs as well as training relatives in the identification of early signs of a relapse.

EVALUATION OF STOPS - A PILOT PROJECT

We started a pilot project based on principles of STOPS in Lady Reading Hospital, Peshawar. The patients suffering from Schizophrenia and schizoaffective disorder were recruited and we trained the on of the close relatives, termed Key Care Giver to supervise the medication adherence. We assessed the outcome with Global assessment of Functioning[14] and compliance with

the help of a structured questionnaire at baseline and follow up appointments. Ninety two patients were enrolled in this pilot project. As this was a pilot project we recruited all the patients irrespective of duration of illness. The mean duration of illness in these patients was 56.40 years (SD=60.69).

We developed a standard regimen for treating schizophrenia which was administered by under the close supervision of a relative. The patients were required to collect the medication monthly when treatment adherence and improvement was also assessed.

At one year follow up the mean GAF for the group was 61.43 (SD = 23.76) compared to 41.46 (SD = 28.84) at baseline. 70.7% had complete compliance with the treatment compared to 42.3% at baseline (Further details available from authors on request). The most encouraging aspect was that a number of patients started working early in the programme after some improvement thus actively supporting their families, instead of being burdens on them.

The average drugs cost per month for a case of schizophrenia with was RS.127 (1 US Dollar= Rs.86) with conventional anti-psychotics. For those patients receiving atypical anti-psychotics using the most economical local brand of Risperidone available in Pakistan the same cost was about three times this figure. Considering that in schizophrenia there are no additional costs of laboratory investigations and radiography used for T.B control activities, this compares quite favorably with six to eight months treatment of Tuberculosis in DOTS programme which ranges from Rs.1350 to 3130, depending upon the type and combination of drugs used. Encouraged by this success we commenced a Randomized Controlled Trial to evaluate the effectiveness of STOPS versus Treatment As Usual (TAU). The trial is registered at Trails.Gov, the one of the registers for RCTs and further details are available at www.clincaltrials.gov.

CONCLUSIONS AND FUTURE DIRECTIONS

It is suggested that those suffering from schizophrenia in the LAMICs could at least be supplied pharmacotherapy for two years under close supervision, if not for the whole duration of illness. This will help to overcome the non adherence for a period of illness which has been shown to be the strongest predictor of long term outcome and disability[15].

Three tasks need urgent action:

a) A global fund to generate the resources for providing free access to antipsychotic drugs should to be created.

b) Simple, brief and cost effective strategies for enhancing medication adherence which can be used by the caregivers in the LAMICs need to be developed.

c) Small scale programmes based on the DOTS model should be developed locally in LAMICs in collaboration with international organizations before we can expect the governments to support the same. Insulin Demonstration Projects which has been initiated to improve the access to the Insulin by the IDF Task Force can provide good models for this[16].

Free access to the treatment has been provided not only for disorders like TB but also for many non communicable disorders in other disciplines. In Diabetes Mellitus, for example, at least 67 states around the world including many in LAMICs are providing state subsidies for the Insulin[17]. A community based intervention based on the principles of DOTS for a relatively low prevalence disorder like Schizophrenia could also help to put the mental health strongly on the agenda of public health. Unlike non-multi drug resistant tuberculosis, treatment for schizophrenia would be needed for much longer period and "cure" would not be achieved in the strictest sense. Nor is there incentive to address the schizophrenia because a sufferer is not infectious to those around him or her. However, maintaining regular treatment in up to 2/3rd of cases for the critical two years period would not be a mean achievement. The improved access to treatment as a public health intervention will also lead to better awareness and early help seeking for the cases which at present represent the large untreated prevalence. Most importantly, perhaps it can also help to reduce the stigma for the disorder as effectively as the advent and effective implementation of anti tuberculosis treatment did for tuberculosis.

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