

Schizophrenia Treatment Notes

- The biochemical model uses the Dopamine hypothesis and assumes that schizophrenia is caused by excessive activity at synapses that use dopamine as their primary neurotransmitter and that this leads to abnormal functioning of brain systems that depend upon dopamine, resulting in schizophrenia.
 - Neuroleptics or antipsychotics are drugs that reduce psychotic symptoms and are used to treat schizophrenia.
 - First generation:
 - Chlorpromazine and Haloperidol (from the class of drugs called phenothiazines) [Davidson and Neale 1997] were among the first neuroleptics available whose chief mode of action was to bind to dopamine receptors. This would prevent dopamine itself from binding and results in a decrease of the positive symptoms of schiz. But they are not as effective in treating the negative symptoms.
 - They also had unpleasant side-effects such as dryness of mouth and throat, visual disturbances, drowsiness, constipation, depression, menstrual disturbances and weight gain/loss.
 - They produced more serious side-effects called “extrapyramidal effects” which induced symptoms that were analogous to Parkinson’s disease. (As dopamine is blocked and low levels of dopamine are thought to cause Parkinson’s.) The motor symptoms include stiffness in muscles and difficulty in moving, tremors and spasms of limbs and body. “Akathisia”- a peculiar ‘itchiness’ in the muscles results in an inability to sit still. “Tardive dyskinesia” causes involuntary movements of the mouth and tongue and is not always reversible.
 - Block ALL D2 receptors.
 - Second generation:
 - In 1990, Clozapine, the first “atypical” antipsychotic, was introduced and was found to be more effective than the previous psychotics in successfully treating BOTH the positive and negative symptoms. [Breslin 1992] It also did not produce extrapyramidal side-effects or tardive dyskinesia. But side-effects that affected metabolism were seen more.
 - However, it can produce “agranulocytosis”, a deficiency in white blood cells, which can lead to infections, severe fever and even death. So clozapine must be closely monitored and this makes it quite expensive. [Kane and Marder 1993]
 - Block fewer D2 receptors. Also block some serotonin receptors.
 - Third generation:
 - Ehret, Sopko and Lemieux (2010) noted that a drug called Lurasidone reduced both positive and negative symptoms and had less unpleasant side-effects as compared to earlier. (nausea, vomiting and dizziness)
 - Motiwala, Siscoe & El-Mallakh (2013) reported on the use of depot Aripiprazole. Depot injections are usually given deep into a muscle and allow the administration of a sustained-action drug formulation for slow release

and gradual absorption so that the active agent can act for much longer periods than is possible with standard injections. Aripiprazole is thought to reduce susceptibility to metabolic symptoms present in second gen drugs.

➤ Electro-convulsive therapy (ECT):

- A person receives a brief application of electricity to induce a seizure.
- The procedure of ECT involves an electric current of between 70 and 130 volts being passed through the non-dominant brain hemisphere, and an anaesthetic and muscle relaxants are given before the treatment itself. 6 to 9 treatments may be given over a month or so. The seizure may last up to a minute and the patient regains consciousness in around 15 mins.
- Originally used by Cerletti and Bini (1938) to help patients with schizophrenia **but it was eventually deemed an ineffective treatment for schizophrenia**. Today ECT is used to treat depression, but very rarely for schizophrenia.
- Zervas, Theleritis & Soldatos (2012) conducted a research that showed that ECT can be quite effective with catatonic schizophrenics and worked even better when combined with medication. There was also evidence that it may improve a person's response to medication.
- Phutane et al (2011) also noted that in a sample of 202 schizophrenics who had undergone ECT, the common reason why they had the ECT was to "augment pharmacotherapy" and that the main target was catatonia.
- Flamarique et al (2012) reported that adolescents who received ECT in conjunction with clozapine had lower a re-hospitalisation rate (7.1%) compared to a group who received ECT and a different psychotic (58.3%).

➤ Token Economy (Behavioural Therapy):

- It is a type of behaviour modification therapy only carried out in institutions such as hospitals, schools etc.
- It is based on the use of reinforcement to promote specific behaviours and may use punishment to extinguish unwanted behaviours.
- Tokens act as **secondary reinforcers**. They have no intrinsic value, but they can be used to obtain things that do (**primary reinforcers**).
- A token is issued every time a desired behaviour is shown and tokens can be accrued and exchanged for something they like.
- Allyon and Azrin (1968) introduced a token economy to a psychiatric hospital in a ward for long-stay female patients. The patients were rewarded for brushing their hair, making their bed and having a neat appearance. Their behaviour improved rapidly and staff morale was raised as the staff was seeing more positive behaviours.
- Paul and Lentz (1977) investigated the effectiveness of operant conditioning by reinforcing appropriate behaviour in schiz patients- using token economy. Patients also received individual behavioural treatments tailored to suit their needs. As a result, both positive and negative symptoms were reduced, leading to more hospital discharges when compared to a control group. Only 11% of patients needed drug

treatment compared to 100% of the control group. Thus, operant conditioning can be an effective means of improving behaviour in people with schiz.

- However, whilst token economies work when the schizophrenic person is in the institution, once they are removed from the institution the reward is removed and the improved behaviour ceases.
- Behavioural treatments do not remove cognitive symptoms such as hearing voices or delusions.

Effectiveness of Token Economies

Source	Type of Client	Outcome
Allyon & Azrin (1968)	Long term inpatients	<ul style="list-style-type: none"> • Increase in targeted behaviours, including participation in group therapy
Paul & Lentz (1977)	Long term inpatients	Improvements in: <ul style="list-style-type: none"> • Socialising • Self-care • Vocational skills
Zimbardo (1988)	Long term inpatients	<ul style="list-style-type: none"> • Increase in targeted behaviours in institution • Improvements disappeared after discharge
Barlow & Durand (1995)	Long Term inpatients	<ul style="list-style-type: none"> • When reinforcers were gradually withdrawn, improvements lasted longer after discharge

➤ Cognitive-behavioural Therapy (CBT):

- Aims to modify people's thoughts and beliefs and also the way they process information.
- A therapist will challenge irrational and faulty thoughts as well as behaviours that are not helping.
- For schiz, the intention of CBT would be to help patients make sense of the psychotic experiences and reduce the negative effects of the condition plus any distress they may be feeling. Patients may also be given help to understand that views, thoughts and interpretations are not facts, then given help to deal with assessing them.
- Tom Sensky (2000):
 - Sensky and other researchers conducted a study on schizophrenia and CBT. They recruited 90 patients from five clinical services: two in West London and three in North England. Patients were between 16 to 60 years of age, were diagnosed with schizophrenia, and had experienced distressing symptoms that lasted for at least six months – even though they had taken antipsychotics. The patients received CBT for nine months and were then checked up on again after nine months.
 - Sensky et al's experiment showed that if a schizophrenic patient is treated with CBT, their positive and negative symptoms will be reduced and the

effects of the therapy will still remain even after nine months. These changes are not attributable to any changes in medication. This shows that this method of treatment can be very effective even in patients who do not respond positively to antipsychotic drugs.

- Advantages-

- Shown to be effective in many cases. Improves symptoms, recovery and relapse rates
- Can be used in conjunction with other therapies (e.g. drugs)
- No side effects (unlike drugs)

- Disadvantages-

- It could be argued that it's not very rational to teach patients to see life through rose coloured spectacles
- Doesn't work for everybody
- Expensive and time consuming