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Case Report

# Cost of Not Treating Catatonia as a Separate Disorder

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**Abstract**

Diagnostic acuity has implications for the cost of health care. Especially when similar symptomatology represents two different diagnoses. Treating one with the medication and procedures of the other may worsen prognosis and recovery. Schizophrenia instead of catatonia is one example. Two patients are used to illuminate this. In the first case, under modest economic assumptions, $2,520,000 was the cost to society of treating in vain compared to$336,000 using adequate treatment. Take home pay for the patient was $440,000 and $1,239,000, respectively. In the second case where a correct diagnosis was detected early in the course of the disease, proper catatonia treatment would give $1,209,500 in take home pay at a treatment cost of $492,000. The group of patients with treatment resistant schizophrenia accruing high costs to society could include patients with catatonia in need of other treatment plans. An early correct diagnosis may reduce considerable expenses to society and lessen the burden on family and patient alike.

## INTRODUCTION

Diagnosis of mental disorders has developed through written history. Greek philosophers grouped deviant behaviour and we retain some of the names. Little of the content is unchanged within today's diagnostic systems ICD-10 and DSM-V [1,2]. At the end of the 19th century catatonia was considered a separate diagnostic entity and described thoroughly by among others Kahlbaum in a small book from 1874 [3]. In 1908 Eugen Bleuler framed the concept of schizophrenia and included the traits of catatonia into the schizophrenia spectrum disorder. Not until the publication of DSM-V did catatonia again reappear as a separate diagnosis, although a close relationship to schizophrenia is maintained [4]. A small fraction of the patients diagnosed as having a schizophrenic disorder are not helped by antipsychotic medication. This is a challenge both for the patients not getting any relief from their suffering, for the family around them and for the treatment facilities. There is growing evidence that some of these patients may have a catatonic disorder, not efficiently treated by antipsychotics. The treatment of choice for these patients is a combination of the benzodiazepine lorazepam and electroconvulsive treatment (ECT). Similarities between the spectrum of symptoms connected to schizophrenia proper and catatonia not related to schizophrenia have blurred the clear diagnostic vision of psychiatrist for years [4].

Periodic catatonia is an inherited form of schizophrenia characterized by psychomotor disturbances, including grimacing, stereotyped body movements, and hyperkinetic movement salt ernating with mutism, staring, and body posturing. Susceptibility to this condition has been linked to genes on chromosome15. This disease does not fit the renewed interest in catatonia as described above.

A PubMed search of cost effectiveness considerations on the proper treatment of catatonia did not reveal any such papers, and this paper is a start to such studies using illustrative cases. The relevant papers on catatonia are not resent as the topic has slept for hundred years as part of the schizophrenia spectre of diseases.

## CASE PRESENTATION

A man aged 61 developed what was considered a schizophrenia disorder at the age of twenty during military service. He was subsequently treated with a range of antipsychotic medications with little improvement. Further details are presented in an earlier paper [5]. At one point his doctors in the psychiatric acute ward discovered that the only action that would calm his excessive unrest and violent behaviour was electroconvulsive treatment.After almost 40 years the benzodiazepine lorazepam was introduced. The combination of the two treatment parts did improve the daily functioning of the patient. He has lately managed to stay eutym for almost a year with lorazepam only. Economic loss to the patient and the society at large would be the difference between treatment costs during the 40 years and purported gain through attaining a better job.

A man aged 26 was referred to another acute psychiatry unit with psychosis-like symptoms including head banging and mutism. He did not respond to antipsychotics or diazepam, and his behaviour deteriorated during the first ten days of his stay. He had to wear a motorcycle helmet to avoid serious

injuries to his head. Deliberation between all the psychiatrists of the department concluded with the need of a lorazepam provocation test for catatonia [4]. This test was positive and ECT was introduced. His agitation diminished over the following two weeks. His prospect for a working life with the recommended follow up treatment of catatonia, lorazepam and maintenance ECT monthly for some years, could give him a family and work life with usual fluctuations.

### Cost aspects of treated cases

Not treating a disease to the best of medical knowledge is a waste of personal resources and often also an increased cost to society. The two cases described are different. In the first case a diagnosis of catatonia is established after more than 30 years of treating the patient for a purported schizophrenia disease.

In the second case a diagnosis of catatonia was established when the patient was in his twenties. Thus the tentatively best treatment of this condition could be started, avoiding prolonged debilitating illness.

In the first case the difference in costs to the patient and to society is sunk costs. Unnecessary future costs may be reduced or avoided for the young person with up to date treatment.

The burden on families from members with severe mental illness is high and well documented [6]. In a comprehensive review of clinical outcome and cost-effectiveness (CEA) of ECT in depression, schizophrenia, catatonia and mania, no CEA of catatonia as described in this paper is found [7]. The simplified analyses are restricted to treatment and medication costs and cost of resident stays. Burden on families is not included.

### Case 1

The man in the first case would probably have worked as an engineer during his working life from the age of 25 to 67, year of retirement. i.e. 42 years of earning $29,500 a year as take home pay. Optimal treatment of catatonia estimated at 8 days of resident treatment per year was used in calculations. The cost of resident treatment was set at $1000 per day.

Take home pay for 42 years
$1,239,000
-Treatment cost excluding medication cost,
8 days x 42 years x $1000
$336,000

Cost of resident treatment in Norway is covered by the National Health Insurance and is free to the patient. The taxes incurred on his income would by far exceed the cost to society of his treatment.

His actual financial situation was as follows:

Infrequent work at a lower salary for 25 years

Take home pay $ 17,600 per year

$440,000
- Treatment cost for 2 months per year (60 days) at $1000 per day= $60,000 during all the 42 years
$2,520,000

Cost of treatment was far above his income and the tax burden on it.

### Case 2

The man in the second case is young and he is starting his working life and needs the full awareness of his senses. An imminent severe mental illness deserves the best of diagnosis and treatment. In his case treatment staff did despair when the patient did not respond to standard antipsychotic treatment. After more than one week of deliberating his diagnosis/diagnoses, a lorazepam provocation test was performed. He calmed down for some hours. A diagnosis of catatonia emanated out after the comprehensive differential diagnostic procedure. He was started on a proper catatonia treatment as depicted above during his first acute resident stay. It is assumed that he gets a job and keeps this job or other relevant jobs until he is 67 years, the normal age of getting an old age pension, i.e. for 41 years. Assume the same pay level as for case 1 with correct diagnosis under a regime of one maintenance ECT per month, calculated as the cost of one resident day per month. His earnings per year are set at a very conservative level of $29,500 after taxes.

Take home pay for 41 years
$1,209,500
-Treatment cost excluding medication cost,
12 days x 41 years x $1000
$492,000
Cost of treatment would be far below his income and the tax burden on it.

## DISCUSSION

The cost of not finding the correct diagnosis and subsequently treatment modality may be of importance for society, also under the modest assumption of the calculations above.

Differential diagnostic acuity is a prerequisite to minimize costs. Ability to pursue the correct diagnosis depends on time and resources available to amass the knowledge and secondly accept to follow this knowledge within the health facility. The unusual is often dismissed as improbable, as in the cases described. The first patient was diagnosed with schizophrenia when still young, but the long row of resident doctors treating him for the next 40 years accepted the diagnosis. The author of this paper has experienced the same attitude at several psychiatric hospitals; the cases were from two such facilities.

In some 10% of cases of schizophrenia the common and usually effective treatment with antipsychotics fail. After the introduction of second-generation antipsychotics the number of treatment resistant patients with schizophrenia has not diminished. An explanation of this observation might be that the patient does not have a schizophrenia disorder [8]. Rather the patient may suffer from a catatonia disorder. If this is not realized, and the patient does not get the correct treatment, both the patient and his or her family will suffer and all parties will spend resources in vain[2,6, 9-10].

The use of lorazepam and ECT together is the treatment recommended by Fink [4]. Clinical experience indicates that patients may stay in remission with either one of the options.

ECT is the more costly one and also the most powerful treatment option.

The awareness of the diagnosis catatonia without reference to schizophrenia has gone through major changes over the past 15 years. Several publications over the last hundred years have given information on the existence of catatonia as a separate entity, but the clinical community has not paid heed to this. The documentation of effective treatment of catatonia as a separate syndrome from schizophrenia is now available. An excellent exposé of this development is given by Bergsholm in a recent essay [11]. He emphasises that because of the unclear distinction between the schizophrenic, affective and psychotic traits over time, the treatment given has often relied on the first diagnosis given. This was then perpetuated even when the treatment was utterly ineffective.

Catatonia-like deterioration in young adults with Down syndrome (trisomy 21) does occur. In a recent case description of 4 such patients Ghaziuddin et al., describe the favourable outcome and normalization of behaviour in patients after lorazepam and ECT treatment [12].

ECT is highly effective for acute catatonia and also in prolonged catatonia as shown by Malur et al. [13]. The poor efficacy of antipsychotics is documented in a study by Hawkins et al. [14]. They emphasise the high efficacy of lorazepam, 79%, and of ECT, 85%, in achieving complete response.

Further research is needed to corroborate the findings. Cost effectiveness implications of better treatment are huge and of value to society as shown in the tentative calculations of this study. Methods to improve the differential diagnosis discussion would be an asset.

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