A quality improvement program for mental health care in prison. Evaluation of the results after 6 years (2000-2005)

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ABSTRACT

Introduction: This paper describes the results of a program aimed at improving the quality of mental health care amongst inmates in the prison of Zuera (Zaragoza) after six years since its set up (2000-2005).

Materials and Methods: We designed a series of studies lasting one to two years and used them as a basis for the program.

In 2000 we studied the demand for primary health care in the treatment of mental health problems in the prison health centre.

In 2001 we studied the compulsive demand for psychotropic medication. In 2002 we studied the prevalence of mental disorders in a random sample of 60 inmates. In 2003 and 2004 we studied the relationship between mental disorder and adjustment problems, first by relating sanctions for aggressive behaviour with mental disorders using a random sample of 60 inmates and then relating inappropriate adjustment behaviours with use of psychotropic medication in a random sample of 520 inmates. In 2005 we studied the functioning of the prison health care centre as a resource in the treatment of inmates with severe mental illness by taking data from admissions over a seven-month time period.

Results: 50% of the primary health care consultations were related to a mental health problem. 59% of the inmates showed symptoms of some type of mental disorder, 56.6% of them showed addictive disorders while the other 30% showed Personality Disorders. 20% of the inmates required referral to the consultant psychiatrist, the most common cause of referral being inappropriate or maladjusted behaviour (46%) and the most common diagnosis Depressive Disorder associated with Addictive Disorder (psychoactive substances). We could see a correlation between the number of sanctions for aggressive conduct and the diagnosis of Personality Disorder. A similar correlation could be seen between adjustment problems marked on an objective scale and the use of psychotropic medication. 50% of the inmates in the health centre were there because of mental disorder, and 43% had been admitted directly after sentencing.

Discussion: A limitation of this study is that it only goes as far as describing a set of findings about the quality of mental health care and does not propose any relevant improvements. This work shall be left for later studies. There is clearly a great need for mental health care amongst prisoners. Pathologies that cause inappropriate behaviour, most commonly understood as the expression of inadequate interpersonal relationships, are the most common disorders and are generally associated with psychoactive substance abuse. The model we propose is that of the consultant psychiatrist working in close cooperation with the primary health care team as the best answer to this type of health care need. Health care centres are not sufficiently equipped to respond to the situation and have no other option but to accept patients who have usually committed some type of violent crime and who have not been admitted to specialised centres outside prison, usually because adequate security measures are lacking.

Key Words: Quality of Health Care, Prison, Mental Health, Psychiatry.
INTRODUCTION

In response to a call for tenders, promoted by the government of Aragon and published 26-05-00, to address support to initiatives in the framework of the program “quality improvement in primary health care”, the primary health care team of the centre presented a project in 2000 aimed at improving the quality of mental health care amongst prisoners. This project was accepted and is still operating today under the supervision of the persons responsible for quality in primary health care of the autonomous region of Aragon.

This study describes the results of this program 6 years after it was set up.

The primary health care team of the prison of Zaragoza decided to introduce improvements in the quality of mental health care using, as the call for tenders required, a methodology that follows the so-called Improvement Cycle 1, that is to say a revision of the situation by means of an analysis carried out in the following phases:

1. Identify and select problems or opportunities of improvement.
2. Analyse causes and related processes.
3. Plan improvement changes and/or actions needed.
4. Prove and verify the usefulness of the measures put forward and carry out the necessary adjustments if needed.
5. Monitor the improved process.

Prisons care for an important proportion of individuals with mental health problems of different types. It is important to point out the most relevant, according to the order of frequency and following the DSM-IV classification:

1. Mental disorders associated with substance abuse, not only related to dependence and abuse but also to intoxication and abstinence.
2. Personality disorders, such as the antisocial, schizotypal, histrionic, borderline, or the paranoid types are amongst the most frequent.
3. Mood disorders, generally involving depression.
4. Generalized anxiety disorders or anxiety episodes.
5. Sleep disorders, generally connected to another type of mental disorder, associated with substance abuse or with changes in the circadian rhythm.
6. Somatoform disorders, such as somatization or hypochondria.
7. Schizophrenia and other psychotic disorders.
8. Adjustment disorders.

The prison of Zuera, 40 km out of Zaragoza, is one of the so-called “type” centres, with a population of about 1600 inmates as well as about 1000 inmates per year who come in and out. It can be said that this centre is quite representative of Spanish prisons, at least with regard to its size, since according to the last study on quality in health care in Spanish prisons, 55,6% of total prisons are big, showing a capacity of more than 500 inmates and 27% of more than 1000.

The health personnel in charge of the primary care at the prison of Zuera consists of 8 general practitioners, 10 nurses, 5 nursing aides and a pharmacist. Specialized and hospital health care services are provided by public medicine outside prison, as it happens with all penitentiary centres dependent of the Ministry of the Interior.

First-level health care facility in prisons, as well as in the region, focuses on the detection and early management of the most frequent or severe diseases of the population.

The Committee of Ministers of the Council of Europe's Recommendation No. R (98), 7 advise that corresponding with the increase in the prison population, a notable increase in the number of individuals suffering from some type of mental diseases has been observed in the last years. This does not imply that only prisons have a specific effect on inmates but that the decrease in the community resources regarding beds for mentally ill individuals also has to some extent an effect, since their focus is more on treating rather than on giving shelter (as “social control” centres).

Mental hospitals which have for centuries sheltered a great number of socially problematic individuals (personality disorders, mentally handicapped individuals) have been disappearing. There is a notable increase amongst the general population of individuals who lack resources of all types or who are simply socially excluded and many of them have mental disorders. A very high percentage of these individuals suffer from chronic psychoses which have not been treated and, one way or another, they can easily end up in prison.

Nowadays the region has very few social and health care resources aimed at mental health and the society is less concerned with this problem. In addition to all these problems, the great number of mental disorders caused by psychoactive substance abuse in Spain must be included.
In prison, there are also a series of health factors associated with the possibility of suffering from a mental disorder:

- Stress caused by the adjustment to the prison environment.
- Frequent overcrowding of centres.
- Bad material conditions.
- Lack of personnel or their inadequate training.
- Absence of adequate information from all the professionals involved in dealing with these patients.
- Indefinite or extended social isolation.

In their meta-analysis study which included 62 surveys in 12 different western countries, Fazel y Danesh determined the prevalence of mental disorders in prison in a sample of 22,790 inmates. Mean age was 29 years old and 81% of them were men.

The results showed that 3.7% of them suffered from psychosis, 10% of them from major depressive illness and 42% from a personality disorder. More recently, Kjelsberg found 35% of inmates with some type of mental disorder in a sample of 2,617 inmates in Norwegian prisons in a study published a year ago.

Fotiadou found 78% of mental illness in a random sample of 80 inmates in a Greek prison.

In addition to these profiles, in our country, between 58% and 68% of inmates, depending on the prison where the indicator has been measured, show some type of drug addiction.

Amongst the inmates with disorders associated with adjustment problems, personality disorders are very frequent. These disorders, from a legal point of view, are not considered to be real mental illnesses because the patient is basically sound of mind and therefore legally accountable for his actions.

The individual who suffers from a personality disorder is supposed to be acting with sufficient capacity to understand the consequences of his actions, and a constant will to carry them out. However these individuals are labelled as mentally disordered in all the psychiatric guides and their behaviour results in uneasiness, lack of control, limitations in the interpersonal relationships, inflexibility, irrationality and incapacity of actions.

Therefore personality disorders, although they are not considered to be real mental illnesses from a legal point of view, result in real pathological behaviours from a clinical point of view. They are illnesses which demand a correct diagnosis and treatment, above all if one thinks that limitations in the “so-called” curative treatments require behavioural and psycho medical management strategies, which act no less than on their symptoms and restrain as soon as possible the disruptive symptoms causing problems to the patients and those around them.

Some authors have associated the high rate of health care demand amongst inmates, in comparison with that of the general population, with the high prevalence of mental disorders, in addition to the stress caused by imprisonment.

The Spanish Neuropsychiatry Association (SNA) edited a wonderful documented paper in its national congress in Oviedo in 2003, showing the most severe and frequent health care problems related to mental health in Spanish prisons to be:

- Psychiatric care in prisons, except for Catalonia since its competence in the matter has been transferred, is fundamentally the responsibility of the primary health care team and when there is specialized support, it is not normally co-ordinated with this team and consequently its work is kept aside.
- These health care professionals do not have sufficient personnel in order to establish an early diagnosis of these diseases, nor the adequate training in order to efficiently deal with them.
- There is no co-ordination between the health care team and the specialist. This leads to inadequate referrals which produce an unjustified increase in the use of psychotropic substances, incorrect diagnoses and the inmates to be under psychiatric treatment for the rest of their life. Any maladjusted behaviour is considered as a mental illness symptom, likely to be treated by the psychiatrist.
- Lack of co-ordination between the prison and the regional mental health care services which interferes with proper referrals after the patients are released from prison.
- Inexistent continuous training in mental health related matters or others of the primary health care teams in prisons.
- Lack of material and personnel resources to deal with severe psychiatric cases of outpatients in prisons.
- Lack of material and personnel resources in units of severe cases to deal with severe psychiatric cases in hospitals outside prisons when admission has been required and security measures such as those in a prison are needed.
- Lack of material and personnel resources to deal with chronic psychiatric cases in prisons.
The objective of this work is to describe the main findings and the methodology used in successive one-year cycles (2000-2005) in the implementation of a quality improvement program for mental health care in the prison of Zuera.

MATERIAL AND METHODS

This paper describes the work on quality improvement for mental health care in prison, which has been carried out since 2000 in the framework of a specific program promoted by the health care services of Aragon. This programme is made up of a series of cycles lasting one to two years, with the corresponding evaluation of the work carried out at the end of each cycle.

The quality improvement project started with a study on the health care demand by means of an analysis of the incidence of mental problems during the daily GP consultations. The principal reason reported by inmates when visiting the GP on his daily visit to the former provincial prison of Zaragoza was collected during 30 days.

The following year the characteristics of one of the most frequent reason for consultation was studied as well as the compulsive demand for psychotropic medication, that is to say a pressing demand, sometimes even aggressive, on the part of the inmate for the prescription of a determined medication, or for an excessive doses, without apparent symptoms. This is one of the many health care experiences which produces most attrition to the professionals who often have to argue with inmates. Immediate cause of the demand and related mental disorder has been collected during one month.

In 2002 a review of the inmates' clinical records has been carried out in order to establish the prevalence of mental disorders in our centre. A stratified random sample of 60 individuals per units (n = 60) amongst inmates admitted on February, 9 2002 (N = 793). Their clinical records were studied individually and a personal interview was carried out. A psychiatrist and two psychologists from the centre who acted as external professionals in order to confirm the health care team’s diagnosis then verified the diagnoses.

That year as well as the following, our work focused on the consultant psychiatrist and the health care model used, studying the cases derived to a specialist over a period of 22 months.

The number of patients attended and the symptomatology causing the referral were analysed together with the principal diagnosis presented.

Due to the complexity involved, the analysis of correlation between the type of mental disorder of inmates and the deterioration of the social atmosphere in the prison is a research line which shall be left for later studies. In 2003 and 2004, the existence of some type of mental disorders amongst inmates who presented inadequate interpersonal relationship, which was measured by means of the number of sanctions associated with aggressive behaviours, was examined.

Using a random sample of 60 inmates the number of sanctions for aggressive behaviours was observed for one month and then related to the presence of some type of mental disorders in inmates. On the other hand, using a random sample of 520 inmates, an objective scale of 8 items regarding adjustment problems was established according to the individual’s behaviour in order to find a relationship with the use of psychotropic medication. This data should be interpreted as an indicator of the presence of a mental illness.

The last study took place in 2005. An analysis of the functioning of the prison nursing care unit as a health care resource for cases of inmates with a severe mental illness or a disabling illness for prison life was carried out.

For 7 months, data concerning admissions to the prison nursing care unit for this type of patients were collected. The data collected included diagnoses at nursing care unit admission, cause of admission, mental illness history, reason for leave, unit of origin within the prison and days of stay in the nursing care unit.

RESULTS

The study regarding the reason for consultation during the daily visit of the GP in the former provincial prison of Zaragoza, showed that 50% of total consultations corresponded to health care demands associated with symptoms related to mental health care (figure 1).

Regarding compulsive demand for psychotropic medication, data obtained showed that within inmates who consulted the GP during the 30 days of the study, a mean of 18% of them (45/250) had required this type of medication. Within these inmates, first diagnosis corresponded to a disorder associated with the use of psychotropic medication in 66.6% (30/45) of the cases and to a Personality disorder which was associated to a psychotropic substance use as well in a second diagnosis in 22.2% (10/45) of the cases.
The study on prevalence of mental disorders amongst our random sample of 60 inmates in 2000 found that 59% of them showed some type of mental illness (35/60).

![Figure I. Primary health care consultations during the month of May 2000 in the prison of Zaragoza.](image)

![Figure II. Prevalence of mental health problems.](image)

With respect to principal diagnosis, 27% accounted for disorders associated with psychotropic substance use (16/60), 2% for mixed anxiety-depression disorder (1/60) and 30% accounted for Personality disorders (18/60). The fact that second diagnosis corresponded to disorder associated with psychotropic substance use in 100% of individuals with Personality Disorder called attention (Figure II).

In 2002 and 2003 and over a period of 22 months, data concerning cases referred to the consultant psychiatrist who visits the prison every day by the primary health care team have been collected. Within a mean population of 1093 inmates, 228 referral cases were found (20.8% of total mean inmate population) and 498 consultations were conducted in this period. The principal reason for referral corresponded to psychosis in 3% of cases (7/228), depression in 16% of cases (36/228), anxiety in 35% of cases (80/228) and inappropriate or maladjusted behaviour in 46% of cases (105/228). Principal symptomatology for these referrals corresponded to a Mood disorder related to depression associated with a psychotropic substance use disorder in 37% of the cases (84/228), to an anxiety disorder associated with a psychotropic substance use disorder in 23% of the cases (52/228), to a Mood disorder in 10% of the cases, to a psychotropic substance use disorder in 7% of the cases (16/228), to a Personality disorder associated with a psychotropic substance use disorder in 7% of the cases (16/228), to an anxiety disorder in 7% of the cases (16/228), to epilepsy in 3% of the cases (7/228), to psychosis in 3% of the cases (7/228) and no pathologies were found in 3% of the cases (7/228) (Figure III). The number of disciplinary sanctions for aggressive behaviours and behaviours involving inappropriate interpersonal reactions associated or not with Personality disorder in those sanctioned have been compared using the Chi square test in order to establish the statistical significance of comparable or non-comparable variables.

![Figure III](image)

![Figure IV](image)

In our sample of 60 inmates and a total of 11 sanctions of this type, we found that 90.9% of them (10/11) were committed by inmates who presented a personality disorder, while individuals who did not present a personality disorder only committed 9.09% of them (1/11) \((P = 0.007)\). A direct correlation between psychotropic substance use and maladjustment, which was almost perfect \((P = 0.89)\), has also been observed.
With regard to the initial results for patients with a severe mental illness admitted in the centre nursing care unit, in 2005, and during the 7 months that the data collection has taken place, the number of admissions for all concepts, that is to say either for physical or mental reasons corresponded to 130 (114 inmates of a mean population of 1600 inmates, which means 7% of them).

50% (65/130) of all these admissions were due to a psychiatric cause. Mental diagnoses could be grouped in 4 large areas of disorders, 15% of them (19/130) corresponded to psychosis of any type, 23% of them originated from serious maladjustment behavioural disorders, 3% of them (4/130) were due to a clear neurological mental disorder and 9% of them (12/130) were due to a serious affective depression disorder (figure IV and table I).

Mean age of patients admitted for mental symptomatology corresponded to 39 years old. 17% of the patients admitted (14/82) were discharged from the nursing care unit, having been released from prison. 43% (28/65) of inmates who are currently in the nursing care unit have been admitted directly after their admission to prison since they presented mental problems related to maladjustment which made a normal life in prison impossible. A statistically significant correlation between direct admission in the nursing care unit after imprisonment and proper symptoms of adjustment disorder has been observed (Figure V).

<table>
<thead>
<tr>
<th>Psychiatric diagnoses</th>
<th>Number of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Psychosis</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Delirium disorder</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Mania disorder</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Personality disorder</td>
<td>17</td>
<td>26</td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Depressive disorder</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Psychotropic substance intoxication</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Table I

Likewise, the same relationship between direct admission to the nursing care unit from the admission unit of the prison and the presence of mental records before imprisonment has been proved.

Recuento

Figure V. Table of contingent pathological circumstances that brought about the admission – unit of origin or destination of the patient (internal classification).
DISCUSSION

This work, during all its temporary phases, has endeavoured to analyse the primary health care doctor’s problems in the care of inmates with mental disorders in a so-called “type” prison. The methodology used in order to conduct this work is that put forward in the theory of health care quality\(^\text{15}\), based on the “Deming cycle” or cycle of quality improvement. For those of you who know this methodology and have read this work, the fact that different types of quality problems have been studied but no solutions have been given to them, (so to close the above mentioned cycle proposed in the introduction: identification of the problem — analysis of the causes — design changes — revision of results — control — )will not have gone unnoticed.

However, those of you who have experience in implementing quality programs, will know that it is much more simple to identify and analyse problems than to offer solutions and evaluate results.

On the other hand, the objective of this work has been to collect data to carry out a first analysis of the situation as well as to draw a list of the health care problems encountered in order to offer possible solutions to them in later works.

It is obvious that there is an important need for health care caused by mental illnesses, and this demand is predominantly characterized by disorders associated with psychoactive substance use and personality disorders, two of the most prevalent illnesses amongst inmates, as the sample studied has showed.

With regard to the cases referred to the psychiatrist, it is interesting to see that the most frequent reason for these referrals is inappropriate and maladjusted behaviour, and the most common diagnosis is depressive disorder. Depression in prison is more likely to be similar to behaviours associated with the difficulties of living together than to those proper of a depression, especially if psychoactive substance use is involved. The rate of bipolar disorder, which demands care, is particularly interesting, 67% of inmates have been referred to the psychiatrist for care and treatment. One of the first conclusions is that training and the process of bringing the knowledge on bipolar disorder up to date must be improved within the health care personnel of the prison in order to detect and take care of this demand.

One hypothesis to be analysed is that most of the aggressive and impulsive behaviours of some inmates, which produce an important decline in the social atmosphere of the prison, are caused by the symptomatology proper to some mental disorder in the field of maladjustment, very frequent indeed amongst inmates. With an appropriate diagnosis and treatment, these behaviours would disappear and life together both within inmates and between inmates and wards would improve.

This hypothesis is a line of research being currently carried out in our centre.

From our experience, the model of having a consultant psychiatrist seeing patients in prison is only useful if the level of co-ordination between the specialist and the prison primary health care team is very high. Our centre has the help of a consultant psychiatrist who, by coincidence, is also working with the regional public psychiatric resources, and who comes to the centre every week.

His co-ordination with the health care team is very satisfactory and has enabled referrals to resources outside prison to be reduced to severe cases only. This co-ordination has also achieved consensus criteria for psychoactive medication treatment within the primary health care personal responsible for caring for the patient in prison as well as for controlling his evolution.

Failures in the care for psychiatric patients in the region, which produce a decompensation of the disease and as a consequence cause a criminal behaviour while the patient is in prison, result in the transfer of the responsibility for the treatment of these cases to the prison health care. These patients enter prison, after their disorder has evolved sometimes for months, and have not been receiving any care since they have voluntarily stopped seeing their psychiatrist for control. It is the prison doctor who has to detect, evaluate and treat those patients, against his will if necessary.

In the centres so-called “type”, like ours, nursing care units are provided with a great number of beds, 50% of which are occupied by patients whose mental disorder does not allow to have a normal prison life in any other unit of the prison\(^\text{16}\). The nursing care...
unit treats all the serious pathologies since it is the most “therapeutic” unit of the centre. From our experience, the care of these patients in these spaces is complicated, mentally disordered inmates live together with other inmates who do not present a mental illness but who are recovering from some physical conditions, which could be chronic or severe. When the nursing care unit of the centre gives medical care to individuals with mental problems, it must fulfill the following functions:

- Mental health centre: where serious or chronic conditions are diagnosed and treated and where care outside prison is co-ordinated.
- Unit of short-term psychiatric hospitalization where severe psychiatric episodes are treated.
- Unit of long-term psychiatric hospitalization where patients with chronic disorders who are legally accountable or not for their actions are treated until they are legally referred to a penitentiary psychiatric hospital.
- Day centre for medium-term hospitalization/occupational workshop.
- A unit of a prison provided with all the security measures which a prison requires.

The most relevant data regarding the occupancy of these nursing care units by inmates with mental disorders, is on the one hand, the high percentage of them with severe conditions such as psychosis which account for 15% of all admissions. One the other hand, the significant statistical correlation between direct admission to the nursing care unit after sentencing and the type of mental disorder those inmates present: one which produces maladjusted behaviour.

Our impression is that in the case of individuals diagnosed with mental disorder and who, additionally, present a behaviour which is hard to control and/or is presumably criminal, they are admitted directly to the nursing care unit of our centre since there is not an appropriate medical unit which provides both security and specialized health care. This hypothesis is reinforced by the statistically significant correlation that has been found in our sample, between record of mental illness prior to imprisonment and admission to the nursing care unit of the centre directly after sentencing.

This type of patients, with maladjusted and/or aggressive behaviours, must be stabilized and treated in units, such as nursing care units of prisons, which have not been designed for this purpose and lack adequate personnel, not so much with regards to their number but rather to their training, to achieve this task.

Although it is where more care is given within the prison, the nursing care unit is still a part of the prison where security and order take priority over the therapeutic activity.

To conclude this work, one could say that demand in health care regarding mental health is very high in prison, being close to 50% of the daily health care pressure. An efficient way to canalize it and give an adequate answer to it is to build a co-ordinated relationship between the primary health care department and a consultant psychiatrist who could come to the centre as often as needed.

Finally, health care resources are not adequately available in most prisons in order to care for severe and/or chronic mentally disordered patients who are not able to have a normal life in prison, and who stay in nursing care units but do not receive adequate treatment for their mental health problems. This is especially relevant in the case of mentally disordered patients who have committed violent crimes since it is precisely here that the need for specialised treatment in a medical environment is of the up most importance for the present and the future of the individual. These patients are admitted after sentencing, to a penitentiary institution rather than to a medical institution.

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CORRESPONDENCIA

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