

Consumption of psychiatric drugs by patients of medical and surgical clinics in a general hospital

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Purposes: to identify the prevalence of the use of psychiatric drugs among patients admitted to medical and surgical clinics of a general hospital, and also the factors related to the consumption of this type of medication. Method: this is a transversal, descriptive, correlational study with quantitative analysis. For the collection of data, there was use of structured interviews and also reference to medical files. Results: there was confirmation of a high prevalence of users of psychiatric drugs, which was associated to the female sex, to people who do not practice Roman Catholicism, and admittance to the clinic not covered by the Single Health System (Sistema Único de Saúde – SUS), as well as the presence of common mental disorders. Benzodiazepine drugs were the most commonly used psychiatric drugs. Among the total number of users, there has been the identification of patients who were not aware that they were receiving such medication. Doctors who are not psychiatrists were responsible for most prescriptions of psychiatric drugs. Conclusions: this signals the need to prepare health professionals to deal with psychological and social problems commonly found in clinical practice, in order to promote the rational use of psychiatric drugs.

Descriptors: Psychotropic Drugs; Inpatients; Safety Management.

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Introduction

Psychiatric drugs are an important tool in the treatment of those who have clear recommendations as to their use. However, there is a great world prevalence of consumption of psychiatric drugs by the general population. The growth in the use of these drugs has been blamed on the increased frequency of diagnosis of the frequency of psychiatric problems in the country, the introduction of new psychiatric drugs on the market and also new therapeutic recommendations for existing psychiatric drugs⁽¹⁾. International studies have also shown the growing use of this type of medication.

A study about the prevalence of psychiatric drugs among North American adults found an increase in consumption, from 6.1% for 1988-1994 to 11.1% to 1999-2002⁽²⁾. In France, a research study showed that the occurrence of use of such drugs in France is similar to those of the United Kingdom (about 2.0%), the Netherlands (2.9%) and Germany (2.0%)⁽³⁾.

Among people living in rest homes in Austria, with an average age of 81 years, the occurrence of consumption of psychiatric drugs was 74.6%⁽⁴⁾. In Pakistan, it was observed that more than 40% of adult patients of a hospital outpatient service took psychological drugs without a prescription and 78% had used them for more than six months. More than 85% were using this type of medication to induce sleep, and 59% for relaxation⁽⁵⁾.

Such data about the consumption of psychiatric drugs in other countries matches the results found in Brazil and, considering the concern about the theme, research has been developed on a national scale.

In Pelotas, State of Rio Grande do Sul, the occurrence of consumption of psychiatric drugs by people aged 15 and over was 9.9%. The greatest consumption of these drugs was, by far, that of the female sex, more advanced age, medical diagnosis of high blood pressure, and also the use of medical services⁽¹⁾.

A survey in the city of Botucatu, State of São Paulo, with people aged 15 and over, has shown that 13.3% of the sample mention that they have used at least one psychiatric drug in the three days immediately before the survey. Being female and the presence of common mental disorder (CMD) have remained as strongly associated to the use of benzodiazepine drugs. A higher family income and advanced age were associated to the use of psychological drugs⁽⁶⁾.

The data related to the consumption of psychological drugs is worthy of attention. Here we highlight that if

the data is relevant in the general population, there is growing concern with patients in hospital, especially in medical and surgical clinic, as not only does this present chronic conditions with the potential for the use of several types of medication, but also the literature has shown a high occurrence of psychiatric disorders in people with medical illness. A study through a systematic review of the literature has identified a high occurrence of mental illness in about 20% of patients in the cardiology area, 25% in nephrology and 30% of patients with liver problems, and has synthesised the psychological drugs that are most appropriate for the aforesaid groups of medical pathologies⁽⁷⁾.

A recent study carried out in a Brazilian hospital which deals with several clinical and surgical specialities, has shown a general occurrence of depression in 53.3% of the sample investigated, with no patient having a prior history of depressive disorder mentioned on the patient's file. The psychological drugs most commonly used by the patients as mentioned were antidepressive drugs, followed by ansiolytics⁽⁸⁾.

The context as described shows that the researchers have investigated the presence of depression and other mental illnesses in hospitalised patients, particularly in medical and surgical clinics. However, there is a gap in the literature in relation to the investigation of the use and indication of psychiatric drugs and the presence, within the aforementioned clientele, of anxious symptoms, depressives or somatoforms that do not fit perfectly in the criteria to diagnose mental illness. The symptoms described characterises Common Mental Disorders (CMD)⁽⁹⁾.

Here we highlight the fact that such disorders do not come under any of the psychiatric diagnostic categories does not reduce the degree of suffering experienced by the patients, as also their shelter needs and, in some cases, treatment with medication. Due to the possibility of worsening of the clinical illnesses, the prescription of psychiatric drugs for people with mental problems diagnosed or with CMD shall be made carefully in patients with medical and surgical clinics. Even though currently there is a trend towards the indiscriminate use of psychiatric drugs, we estimate that there is underdiagnosis and inappropriate treatment of the patients with mental disorders in medical and surgical clinics, mainly due to the difficulty for the clinics to deal with patients presenting psychiatric symptoms⁽⁸⁾.

The high occurrence of mental disorders among patients in medical and surgical clinics, the contradictions in the literature in relation to the indiscriminate use of psychiatric drugs and subdiagnosis and inadequate

treatment of mental disorders in clinical patients, as also the scarcity of research studies seeking to identify the prescription of psychiatric drugs in the aforementioned clinics, make evident the relevance of this survey. In the light of this, the main purpose of this study was to identify the prevalence of the use of psychiatric drugs among patients in medical and surgical clinics of a general hospital, and the factors related to consumption of this medication.

Methods

This is a transversal cut study, with descriptive correlational design and quantitative analysis. This was carried out in a large general philanthropic hospital in the interior of the state of São Paulo. To reach the aims of the study, the collection of data was carried out in the general medicine and surgical clinic of this institution.

This study was carried out after approval by the Research Ethics Committee (Protocol 396/2010) and the participants signed an Informed Consent Form, according to Resolution No. 196/96 of the National Board of Health (*Conselho Nacional de Saúde* – CNS).

All the hospital beds in the sectors created were visited, and the patients who were 18 years old or over who were occupying these beds and who could communicate verbally were invited to participate. When the visited hospital bed was vacant, a new visit was then carried out at the moment of its occupancy. When the occupier of a bed refused to participate, this hospital bed was never visited again.

For data collection, between January and December 2011, an interview was carried out based on a structured questionnaire, developed by the researchers, with questions about demographic, social, economic, and pharmacotherapeutic variables and also about the patient's health record. There was the verification of the preference of the patient in relation to the carrying out of the interview in the hospital bed or in a private location. Due to the clinical condition, some patients preferred to be interviewed in bed. The interviews with the other patients were carried out in a private room in the patient admittance section.

In this study, the aim was to assess a wider range of variables using one same sample, providing a wider view of the issue at hand. Within such variables, the CMDs stand out, and these can be shown by means of several symptoms, such as unspecific somatic complaints, irritability, insomnia, nervousness, headaches, fatigue, forgetfulness and lack of concentration, as also a host of

expressions of symptoms that could be characterised as depressive, anxious or somatoform⁽⁹⁾.

To detect the presence of CMD in individuals who had no mental problems diagnosed, during the interview the SRQ-20 questionnaire (*Self-Reporting Questionnaire*) was applied. The SRQ is an instrument for psychiatric tracking, originally consisting of 30 items⁽¹⁰⁾. The Brazilian version of the SRQ (SRQ-20 – the version with 20 questions for tracking of common mental disorders) was validated in the early 1980s⁽¹¹⁾. Another study⁽¹²⁾, assessed the performance of SRQ-20 as a tracking instrument, and recommended this instrument to be used in clinical activities by any professional. The answer is considered positive when the interviewee says "Yes" to eight or more questions.

Later, a consultation was made to the files of the patients involved. At this stage, seeking to collect all necessary data, and an outline prepared by the researchers was used. The first question in this outline referred to the identification of the prescription of psychiatric drugs to the patients. In this way, the prescription of the medication was observed, seeking the identification of psychiatric drugs that the patient is not aware of receiving. The second question refers to the reason of the introduction of the psychiatric drugs, on medical assessment. When the psychiatric drug was assessed and the patient was not aware of the use of the drug, then there was a review of the clinical development of the health professionals, seeking to check the indication of the aforementioned prescription. The third issue seeks to identify if the prescription of psychiatric drugs is made by a psychiatrist or a doctor in other areas. There was also an investigation to see if the patients were using the medication prior to being admitted for treatment, or if the prescription was introduced during the process.

To assess the influence of independent variables on the consumption of psychiatric drugs, statistical associations were investigated using the Chi-square test, with the association hypothesis being accepted when the value of p found was less than 0.05. To estimate the relative risk, the model of log-binomial regression, simple and multiple, as the response was binary (use of Psychiatric Drugs = Yes or No). The adjustment of the model was made through the PROC GENMOD procedure of SAS software, version 9.0.

Results

This study had the participation of 93 patients admitted to the medical and surgical clinics of the

hospital considered in the study. It was identified that 36 (38.7%) patients were using psychiatric drugs. Statistical associations were investigated (Chi-square test) between the use of psychiatric drugs (dependent variable) and the other independent variables: sex, age, hospital ward, funding of hospital stay, educational level, marital status, religion, employment situation, income, presence of chronic illnesses, and the result

obtained in the SRQ-20 instrument. A statistically significant association has been identified between the consumption of psychiatric drugs and a positive result on the SRQ-20 test, female sex, hospital admittance not paid for by the Brazilian National Health Service (SUS), and being a non-Catholic (Table 1). In multivariable analysis, these variables remained associated to the consumption of psychiatric drugs.

Table 1 - Distribution of the subjects of the study, according to the prevalence of the use of psychiatric drugs and the variables investigated. Barretos, Brazil, 2011

| Variables | Use of psychiatric drugs | | | | | | p-value |
|---------------------------------|--------------------------|------|-----|------|-------|-----|---------|
| | No | | Yes | | Total | | |
| | N | % | N | % | N | % | |
| Sex | | | | | | | <0.01 |
| Female | 26 | 48.1 | 28 | 51.9 | 54 | 100 | |
| Male | 31 | 79.5 | 08 | 20.5 | 39 | 100 | |
| Age | | | | | | | 0.08 |
| Up to 30 | 17 | 81.0 | 04 | 19.1 | 21 | 100 | |
| 31 to 50 | 20 | 60.6 | 13 | 39.4 | 33 | 100 | |
| 51 or over | 20 | 51.3 | 19 | 48.7 | 39 | 100 | |
| Hospital Ward | | | | | | | 0.08 |
| Medical clinic | 38 | 55.9 | 30 | 44.1 | 68 | 100 | |
| Surgical clinic | 19 | 76.0 | 06 | 24.0 | 25 | 100 | |
| Funding of hospital stay | | | | | | | <0.01 |
| Not SUS | 06 | 33.3 | 12 | 66.7 | 18 | 100 | |
| SUS | 51 | 68.0 | 24 | 32.0 | 75 | 100 | |
| Educational Level | | | | | | | 0.21 |
| Illiterate or primary education | 24 | 54.6 | 20 | 45.5 | 44 | 100 | |
| Secondary or University | 33 | 67.4 | 16 | 32.7 | 49 | 100 | |
| Marital Status | | | | | | | 0.35 |
| Without partner | 26 | 56.5 | 20 | 43.5 | 46 | 100 | |
| With partner | 31 | 66.0 | 16 | 34.0 | 47 | 100 | |
| Religion | | | | | | | <0.01 |
| Catholic | 43 | 71.7 | 17 | 28.3 | 60 | 100 | |
| Evangelical and Others | 14 | 42.4 | 19 | 57.6 | 33 | 100 | |
| Employment Situation | | | | | | | 0.11 |
| Inactive | 30 | 54.6 | 25 | 45.5 | 55 | 100 | |
| Active | 27 | 71.1 | 11 | 29.0 | 38 | 100 | |
| Income | | | | | | | 0.15 |
| Up to 1 minimum wage (MWg) | 20 | 50.0 | 20 | 50.0 | 40 | 100 | |
| 1 to 3 MWg | 29 | 70.7 | 12 | 29.3 | 41 | 100 | |
| Over 3 MWg | 08 | 66.7 | 04 | 33.3 | 12 | 100 | |
| Chronic Illnesses | | | | | | | 0.23 |
| Yes | 26 | 55.3 | 21 | 44.7 | 47 | 100 | |
| No | 31 | 67.4 | 15 | 32.6 | 46 | 100 | |
| SRQ-20 | | | | | | | 0.03 |
| Positive | 15 | 53.6 | 13 | 46.4 | 28 | 100 | |
| Negative | 42 | 76.4 | 13 | 23.6 | 55 | 100 | |

In Table 1, we see that there has been a higher percentage of consumption of psychiatric drugs among

patients 51 years old and over, and also those admitted to a medical clinic, even though there has not been

any statistically significant association between these variables and the consumption of psychiatric drugs ($p=0.08$). Similarly, there has not been any statistically significant association between consumption of psychiatric drugs and scholastic level ($p=0.21$), marital situation ($p=0.35$), employment situation ($p=0.11$), income ($p=0.15$) and chronic diseases ($p=0.23$). However, it has also been observed that the percentage consumption of psychiatric drugs was higher among illiterates and those who have no more than a basic education (45.4%), between the patients who do not have a partner (43.5%), inactive (45.5%), with a monthly income of up to one national minimum wage (50%) and who have chronic diseases (44.7%). We also mention the fact that, in this study, 28 of the patients (33.73%) were positive in the SRQ-20 test.

It was also observed that, out of the 36 patients who used psychiatric drugs, eight (22.2%) receive an association between more than one class of the medication as mentioned. Out of this total, seven patients used the association between benzodiazepine and antidepressive drugs, and one used an association of a psychiatric drug with an antidepressive drug. Benzodiazepines (BDZs) were the psychiatric drugs most used within the sample ($n=28$; 63.6%), followed by antidepressives ($n=14$; 31.8%). Among the patients of the medical clinic, the most commonly used medications were benzodiazepines and antidepressive drugs respectively with usage rates of 82.1% and 74.1%. Psychiatric drugs were used by two people in the sample. At the surgical clinic, antidepressive drugs were used more often (28.6%).

Table 2 - Distribution of prescriptions of psychiatric drugs by hospital ward, Barretos, São Paulo, 2011

| Psychiatric Drug | Surgical Clinic | | Medical Clinic | | Total | |
|----------------------|-----------------|------|----------------|------|-------|-----|
| | N | % | N | % | N | % |
| Benzodiazepines | 05 | 17.9 | 23 | 82.1 | 28 | 100 |
| Antidepressive Drugs | 04 | 28.6 | 10 | 71.4 | 14 | 100 |
| Antipsychotic Drugs | - | - | 02 | 100 | 02 | 100 |

The main prescription case for BDZs, as mentioned by the patients, was "to sleep" ($n=15$, 53.6%). The other indications as mentioned were for "depression" ($n=4$; 14.3%) and "anxiety" ($n=2$, 7.1%). Here we mention that for 25% ($n=7$) of the patients the prescription of the medicine was written on the medical file, hence the patient was unaware of its use. In the

clinical development as mentioned on the patient's medical file, there was no mention of the reason why the psychiatric drug was prescribed. Cases where the patients received this medication prior to anaesthesia were not considered.

In relation to antidepressive drugs, for 50% of the patients ($n=7$), such medication was prescribed for "depression". Prescriptions for "anxiety" were reported by 14.3% of the patients, and "to induce sleep" by another 14.3%. Here we must draw attention to the fact that in 21.4% of cases ($n=3$), there was no indication of the reason why the psychiatric drug was prescribed, as this information was not found on the medical file, and the patient was not aware that he or she was using the medication. Out of the two patients reporting the use of antipsychotic drugs, one mentioned using it for "depression" and the second as medication for "depression and anxiety".

It was identified that most of the prescriptions ($n=31$, 70.4%) of psychiatric drugs were passed by doctors not specialised in psychiatry. The most commonly prescribed medication in this group was that of antidepressive drugs ($n=6$; 46.2%) followed by benzodiazepine drugs ($n=5$, 38.5%). Antipsychotic drugs were only prescribed by psychiatrists. Doctors not specialised in psychiatry were responsible for most prescriptions of benzodiazepines ($n=23$; 74.2%), followed by antidepressive drugs ($n=8$; 25.8%). Another item that was surveyed was the occurrence of use of such medication at some point in life, without a medical prescription. Out of the total number of users of psychiatric drugs, two (5.6%) reported this practice. In these cases, the medication was obtained by means of family members. In addition, most of the patients ($n=26$, 72.2%) in this study did not have any kind of therapy aside from pharmacological treatment.

Out of the 36 patients with a prescription for psychiatric drugs, 23 were already using this medication prior to admittance to hospital and, out of these, 10 had a medical diagnosis of mental disorders. Here, we must mention that 13 of the patients started the use of this therapeutic class while being treated in hospital.

All those ($n=10$, 100%) who had a diagnosis of mental illness used psychiatric drugs. Among patients without a diagnosis of mental illness and a positive result on SRQ-20, 46.4% of these ($n=13$) used this medication. Among those without a diagnosis of mental illness and who had a negative result in SRQ-20, 26.6% ($n=13$) used psychiatric drugs.

Discussion

The prevalence of consumption of psychiatric drugs, as shown in this study, is high (38.7%), as this is not a segment of the psychiatric field and also considering the data of prevalence among the general population, as informed by the specialised literature⁽⁶⁾. This high use of psychiatric drugs must be monitored with care, as it could bring negative repercussions to both individual and group health. Especially among patients who have been admitted for hospital treatment and who are receiving other medication at the same time, there is a high risk of occurrence of interaction between medication⁽¹³⁾. Another factor to be borne in mind is the possibility of side effects which such medication can bring, as also dependence on use, causing additional health problems for the individual.

Here we mention the prevalence, in this study, of 28 (33.7 patients) who have shown positive results in SRQ-20. Also in agreement with the literature, we have found a statistically significant association between the consumption of psychiatric drugs and a positive result using the SRQ-20 instrument⁽⁶⁾. One cannot deny the importance of psychiatric drugs for the treatment of diagnosed mental disorders, with the correct adaptation and also the correct prescription of such drugs. The concern lies in the symptomatic use of the psychiatric drugs and the lack of correct diagnosis of such ailments, leading to the lack of success of the proposed therapy and also damage to the individual⁽⁸⁾.

The female sex has shown statistical association with the consumption of psychiatric drugs. In this context, it is worth mentioning that we have also identified an association between femaleness and a positive result on SRQ-20. The presence of a CMD, depending on the specific disorder and the suffering generated by its symptoms, has an initial indication of the therapy using medication, which can contribute to this panorama. We add to this the fact that women use health services more regularly than men⁽¹⁴⁾; this aspect may, in part, explain the greater consumption shown by this clientele.

The main determining factor for the use of health services in Brazil is whether the person has health insurance, with the illness issue being secondary⁽¹⁵⁾. In this context, considering that access to health services is made easier for those who have health insurance or the financial clout to undergo private treatment, the association between the consumption of psychiatric drugs and the patients admitted to hospital through health insurance agreements or private treatment schemes could be better understood.

In relation to religion, we have observed an association between the consumption of psychiatric drugs and not being Catholic. In the specialised literature, we have not seen any other study show a relationship between psychiatric drugs and religion. We therefore see that, even though this is a relevant variable to be considered when the consumption of psychiatric drugs is concerned, this has not yet been given its due importance by researchers.

In relation to the prescription of benzodiazepine drugs (BDZ) as reported by patients, the specialised literature recommends, preferably, medication which does not belong to the aforementioned class, as also psychotherapeutic intervention, or even the combination of both, for the treatment or symptom relief of states of anxiety or insomnia⁽¹⁶⁾. It is also known that there are several other non-pharmacological strategies which could be implemented by health professionals, including the nurse, for promotion of sleep, favouring the rational use of medicines. Strategies mentioned include the use of relaxation techniques, encouragement of warm baths before sleeping and avoidance of daytime naps, avoidance of caffeine, among others.

The BDZs, causing drowsiness and reduction of reflexes, has the potential to promote falls with the resulting reduction in autonomy and in the quality of life experienced by the patient, thereby bringing an overload of care responsibilities for family members, as well as costs for the public health system⁽¹⁷⁾. In addition, studies have observed an association between the use of BDZ and fractures and falls among the elderly population⁽¹⁸⁾. These aspects are relevant, considering that in this study the consumption of psychiatric drugs was larger among patients aged 51 years and over. Studies describe medical prescription as a factor of great importance in the maintenance of chronic use of BDZs, suggesting an undue medical attitude⁽¹⁶⁾.

The use of antidepressive drugs, like the BDZs, may bring health risks both in relation to the side effects as also interaction between medication, especially when there is no careful prescription of such drugs. A survey carried out in a state-run hospital observed that 25.3% of the patients admitted to general infirmaries (non-psychiatric wards) used medication presenting a risk when used together with antidepressives⁽¹⁹⁾.

A research study that investigated interactions between antidepressive drugs and medication against high blood pressure and blood sugar, often used in medical clinic units, as is the case of the present research study, observed that, among patients using

antidepressives, 23.4% were exposed to interactions that occurred through pharmacokinetic mechanisms and 61.7% were exposed to interactions through pharmacodynamic mechanisms of synergy, and 15.9% by both forms at the same time⁽²⁰⁾.

The present work has also observed that, among patients who have been prescribed psychiatric drugs, 25% and 21.4% were also consuming, respectively, benzodiazepines and antidepressive drugs, without being aware of this fact. In all these cases, these medicines were introduced during the period of hospitalisation. This is a high percentage, considering the importance of the patient's participation in the process of reaching a decision about the appropriate therapy. This shows the worrying and inadequate interaction between health professionals and patients, showing the lack of guidance provided to those who need it. There is a need for a review in the qualifications of the professionals, and also the creation of greater awareness of health professionals who already act with the individuals, seeking the protection of patient rights, based on the principles of bioethics.

The largest prescription of benzodiazepines by doctors who are not psychiatrists could be related to the difficulty that these have in diagnosis of mental disorders such as depression^(6,8). This disorder, given as an example, could cause insomnia and irritability, among many other symptoms, thereby leading to a greater prescription of ansiolytic drugs for such problems. This would lead to a merely symptomatic treatment of the cases, delaying the correct treatment and also the recovery of the patient⁽⁸⁾. In addition, such medication may lead to dependence, a characteristic of benzodiazepines⁽¹⁶⁾.

The habit of self-medication at some point in life has also been identified, thereby making evident the need for effective inspection and building of awareness among those who were part of the pharmaceutical market, as this practice could lead to undesirable effects, iatrogenic illnesses and masking of evolutive diseases.

In this study, we observed a high percentage of individuals as detected in SRQ-20 that used psychiatric drugs without having been diagnosed, meaning they could be receiving symptomatic treatment. The data also show there may be the use of psychiatric drugs in an imprudent or unnecessary way, with the identification of the use of such pharmaceutical products by patients without the appropriate diagnosis and with a negative result on SRQ-20s.

Conclusions

The present research has shown that, apart from the high prevalence of the use of psychiatric drugs in the medical and surgical clinics under study, the inappropriate use of these medications could be taking place. This panorama could be related to the difficulty in identification of mental disorders by doctors who are not specialised in psychiatry, considering that most prescriptions have been made by these professionals. In addition, there has been the identification of lack of awareness of the consumption of this medication by many of these individuals, which amounts to a fault not only on the part of the professional person prescribing the drug, but also of the person who is responsible for administration of the medication. There has also been a report of the practice of self-medication at some point in life, and this aspect could be related to lack of awareness among the general population and also in the Brazilian health system.

We also mention that studies on mental illnesses, particularly depression, and also the use of psychiatric drugs by patients in medical and surgical clinics, have been developed, but the specialised literature has not identified any research studies about the prevalence of CMDs and their relationship with the consumption of psychiatric drugs within this consumer group. Thus, this study makes a significant contribution to clinical practice on investigating such variables, identifying a statistically significant association between them.

However, the results shown must be analysed considering the limitations of the study. The sample size, and also the fact that the study was conducted in only one hospital institution, bring restrictions on generalisations. In addition, the scarcity of studies that have investigated the variables of interest as described, with this specific population, makes it difficult to establish a comparative analysis of the results obtained and suggests the need for new investigations exploring this theme.

We also stress the need for the elucidation of the association between the consumption of psychiatric drugs and religiousness through future studies, analysing the way in which this variable acts as a determining factor for consumption, or not.

There is a need for an important change in the teaching of psychiatry in undergraduate courses in medicine and nursing, as also in the attitudes taken up by doctors and nurses, when faced with CMDs and also users of psychiatric drugs. These professionals must be trained to be able to identify and deal with the

psychological and social problems often found in clinical practice, including CMDs, so as to promote the rational use of psychiatric drugs and the implementation of non-pharmacological strategies that allow the handling of mental disorders, in partnership with the other members of the multidisciplinary study.

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