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(RESEARCH ARTICLE)

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A cross sectional study on prescription patterns of antipsychotic drugs among adults with psychiatric illness in a tertiary care hospital

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Abstract

Importance: Antipsychotic drugs are typically used to treat schizophrenia but they are also helpful for other psychotic symptoms, including manic states with psychotic symptoms including hallucinations, delusions.

Objective: To study the prescribing patterns of antipsychotic drugs among people with psychiatric illness & to study the prescribing factors comparison between elderly and Adolescent's patients.

Design and Settings: This is a prospective, comparative, cross sectional and observational study conducted on 100 patients in IP and OP psychiatry Department at Prathima Institute of Medical Sciences. In this study, we compared 1st generation antipsychotics with 2nd in prospective of their safety and effectiveness. Study Period: 6 months (Sep 2022-Feb 2023).

Participants: Study population: 100.Study Criteria; Inclusion criteria includes: Adults of age 18-55 years, Geriatrics above 60years. Exclusion criteria includes: Paediatrics, Pregnant women.

Main outcome and measure: 2nd generations antipsychotics are more commonly prescribed as it has more effectiveness and less side effects.

Results: In our study population out of 100 patients, majority of the patients were from the age group of 30-35 years (20%), 25-30 years (17%). Among 100 patients, the most common symptoms were anger (30%), fearfulness (31%), decreased sleep (57%). Majority of the patients have been diagnosed with schizophrenia (26%), mixed anxiety and depressive disorder (26%). Atypical drugs were more commonly prescribed (risperidone 64%, olanzapine 14% and quetiapine 14%) than typical drugs (haloperidol 25%, chlorpromazine 2%).

Conclusion and Relevance: we have observed that there is a greater need for patient education regarding psychiatric illness in order to have better patient outcomes, and providing knowledge regarding medication adherence. In this study, among typical and atypical antipsychotics the later are more commonly prescribed compared to former as it has more effectiveness and less side effects.

Keywords: Antipsychotic drugs; Psychotic drugs; Atypical drugs; Typical drugs; Risperidone; Haloperidol; Decreased sleep.

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1. Introduction

1.1. Psychoses

These are severe psychiatric illness with serious distortion of thought, behaviour, capacity to recognise reality and of perception (delusions and hallucinations). There is explicable misperception and misevaluation; the patient is unable to meet the ordinary demands of life.

- Acute and chronic organic brain syndromes (cognitive disorder) such as delirium and dementia with psychotic features; some toxic or pathological basis can often be defined. Prominent features are confusion, disorientation, defective memory, disorganized thought and behaviour.
- Functional disorders: No underlying cause can be defined; memory and orientation are mostly retained but emotion, thought, reasoning and behaviour are seriously altered,
    - Schizophrenia (split mind), i.e., splitting of perception and interpretation from reality-hallucinations, inability to think coherently.
    - Paranoid states with marked persecutory or other kinds of fixed delusions (false beliefs) and loss of insight into the abnormality.
    - Mood (affective) disorders: The primary symptom is change in mood state; may manifest as

Mania-elation or irritable mood, reduced sleep, hyperactivity, uncontrollable thought and speech, may be associated with reckless or violent behaviour, or Depression-sadness, loss of interest and pleasure, worthlessness, guilt, physical and mental slowing. melancholia, self-destructive ideation.

A common form of mood disorder is bipolar disorder with cyclically alternating manic and depressive phases. The relapsing mood disorder may also be unipolar (mania or depression) with waxing and waning course.

Neuroses: These are less serious; ability to comprehend reality is not lost though the patient may undergo extreme suffering. Depending on the predominant feature, it may be labelled as: (a) Anxiety: An unpleasant emotional state associated with uneasiness, worry, tension and concern for the future (b) Phobic states: Fear of the unknown or of some specific objects, person or situations.

- Obsessive-compulsive disorder: Limited abnormality of thoughts or behaviour; recurrent intrusive thoughts or ritual like behaviour which patient realizes are abnormal or stupid, but it is not able to overcome even on voluntary effort. The generate considerable anxiety and distress
- Reactive depression due to physical illness, ow to self -esteem or bereavement, but is excessive or disproportionate.
- Post-traumatic stress disorder: Varied symptoms following distressing experiences like war, riots, earthquakes, etc
- Hysterical: Dramatic symptoms resembling serious physical illness, but situational, and always in the presence of others the patient does not feign but actually undergoes the symptoms, though the basis is only psychic and with physical

1.2. Risk factors

1.2.1. Certain factors may increase your risk of developing a mental illness, including

- A history of mental illness in a blood relative, such as a parent or sibling
- Stressful life situations, such as financial problems, a loved one's death or a divorce
- An ongoing (chronic) medical condition, such as diabetes
- Brain damage as a result of a serious injury (traumatic brain injury), such as a violent blow to the head
- Traumatic experiences, such as military combat or assault
- Use of alcohol or recreational drugs
- A childhood history of abuse or neglect
- Few friends or few healthy relationships
- A previous mental illness

1.2.2. Signs and symptoms

According to informant	**According to patient**
Decreased sleep	Fearfulness
Anger	Decreased sleep
Beating family members	Feeling lonely
Irrelevant talk	Getting irritable
Talking to self	Decreased interest in talking to others
Smiling to self	Death wish
Not talking with anyone	Decreased interest in studying
Decreased appetite	Bees sounds in ear
Shaking of hands and feet	Headache
Not sleeping	Increased thoughts
Running around and stopping vehicles	Feeling sad
Crying spells	Suicidal ideation

1.2.3. Antipsychotic drugs

These are drugs having a salutary therapeutic effect in psychoses.

- Antipsychotic medications are typically used to treat schizophrenia but they are also helpful for other psychotic symptoms, including manic states with psychotic symptoms including hallucinations, delusions. Although antipsychotic medications cannot cure chronic mental disorders, they frequently lessen the severity of hallucinations and delusions, allowing the user to operate in a supportive environment.
- The most often used class of medications is antipsychotics. There are many medications in the category that are safe and effective.

The most often used class of medications is antipsychotics. There are many medications in the category that are safe and effective.

1.3. Classification

Depending on the primary use, the psychotropic drugs may be grouped into:

1.3.1. Typical Antipsychotic (1st generation Antipsychotics):

- Phenothiazines
  - Chlorpromazine, Triflupromazine
  - Thioridazine
  - Trifluoperazine, Fluphenazine
- Butyrophenones: Haloperidol, Trifluperidol, Penfluridol, flupenthixol
- Other heterocyclics: Pimozide, Loxapine

1.3.2. Atypical antipsychotics (2nd generation Antipsychotics)

These are newer (second generation) antipsychotics that have weak D2 blocking but potent 5-HT2 antagonistic activity. Extrapyramidal side effects are minimal, and they tend to improve the impaired cognitive function in psychotics.

- Clozapine
- Aripiprazole
- Risperidone
- Ziprasidone
- Olanzapine
- Amisulpiride

- Zotepine

1.4. The classification of mental disorders for use in primary health care 9PHC/ICD-10)

- Organic disorders(F0)
  - Dementia F00
  - Delirium F05
- Psychoactive substance abuse (F1)
  - Alcohol use disorders Drug use disorders F10
  - Tobacco use disorders F11
- Psychotic disorders (F2)
  - Acute psychotic disorders F23
  - Chronic psychotic disorders F20
- Mood, stress-related, and anxiety disorders (F3 and F4)
  - Bipolar disorder F31
  - Depression F32
  - Phobic disorders F40
  - Panic disorders F41.0
  - Generalized anxiety Mixed anxiety and depression F41.1
  - Adjustment disorder F41.2
  - Dissociative (conversion) disorders F43
  - Unexplained somatic complaints F44
  - Neurasthenia F48.0
- Physiological disorders (F5)
  - Eating disorders F50
  - Sexual disorders F52
  - Sleep problems F51
- Mental retardation (F7)
  - Mental retardation F70
- Childhood and adolescence (F9)
  - Hyperkinetic disorder F90
  - Conduct disorders of childhood F91
  - Enuresis F98

1.5. Examination and diagnosis of the psychiatric patient

- Psychiatric interview, history and mental status examination
- The psychiatric report and medical record
- Psychiatric rating scales (Brief psychiatric rating scale, scale for assessment of positive & negative symptoms, Hamilton rating scale for depression, Hamilton anxiety rating scale)
- Clinical neuropsychology and intellectual assessment of adults
- Personality assessment: Adults and children
- Medical assessment and psychiatry laboratory testing in psychiatry
- Neuroimaging
- Physical examination of psychiatric patient

1.6. Treatment

1.6.1. Psychotherapies

- Psychoanalysis and psychoanalytic psychotherapy
- Psychodynamic psychotherapy
- Group psychotherapy, combined individual and group psychotherapy, and psychodrama
- Family therapy and couple therapy
- Dialectical behaviour therapy
- Biofeedback
- Hypnosis
- Interpersonal therapy

- Narrative psychotherapy
- Psychiatric rehabilitation
- Combined psychotherapy and pharmacology
- Genetic counselling
- Mentalization-Based therapy and mindfulness

1.6.2. Psychopharmacological treatment

Biological therapies

- α2-Adrenergic receptor agonists, α1-Adrenergic receptor antagonists; clonidine, guanfacine, prazosin, and yohimbine
- β-Adrenergic receptor antagonists
- Anticholinergic Agents
- Anticonvulsants
- Antihistamines
- Barbiturates and similarly Acting Drugs
- Benzodiazepines and drugs acting on GABA Receptors
- Bupropion
- Buspirone
- Calcium channel blockers
- Carbamazepine and oxcarbazepine
- Cholinesterase inhibitors and memantine
- Disulfiram and Acamprosate
- Dopamine receptor agonists and precursors
- Dopamine Receptor Antagonists (First generation antipsychotics)
- Lamotrigine
- Lithium
- Melatonin Agonists: Ramelteon and Melatonin
- Mirtazapine
- Monoamine oxidase inhibitors
- Nefazodone and trazodone
- Opioid receptor antagonists
- Valproate
- Nutritional supplements and medical foods
- Weight loss drugs

Brain stimulation methods

- Electroconvulsive Therapy
- Other brain stimulation method
- Neurosurgical Treatments and Deep Brain Stimulation.

1.7. Lifestyle modifications

- Eating healthy
- Exercising regularly
- Getting enough sleep
- Avoiding harmful levels of alcohol
- Cessation of tobacco & smoking, Practice self-care.

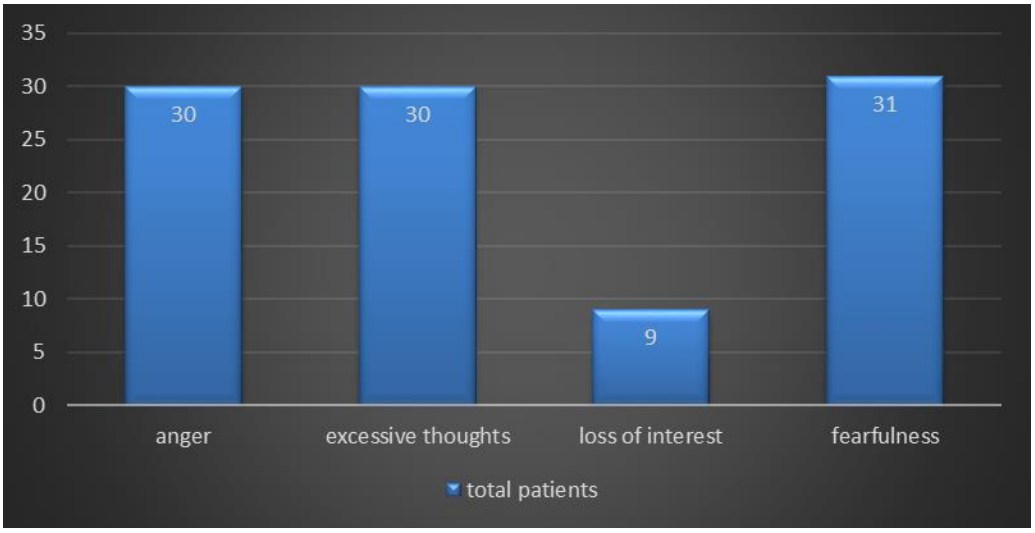

Figure 1 Complaints wise distribution among the study population

Among 100 patients majority of the patients have a complaint of fearfulness 31 patients(31%) followed by anger 30 patients(30%), excessive thoughts 30 patients(30%) and loss of interest 9 patients(9%) of whole.

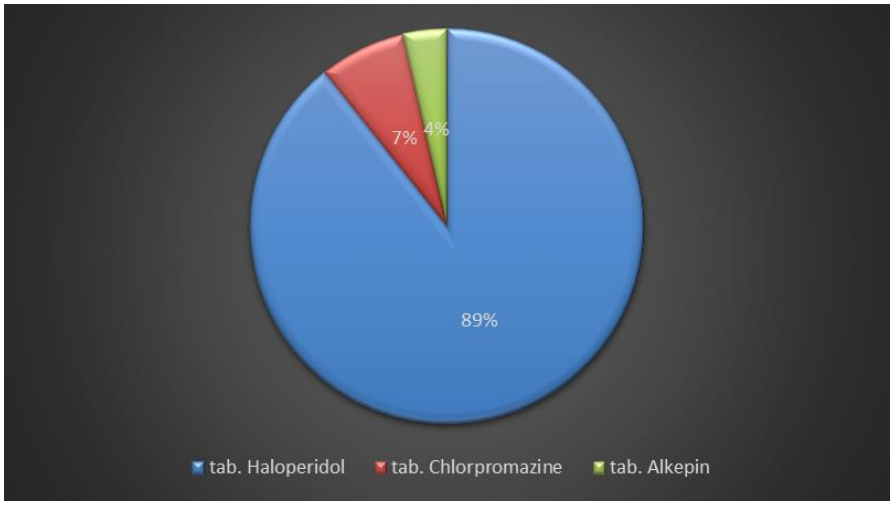

Figure 2 Typical drugs wise distribution

Among 100 patients 89% of the patients are prescribed with tab. Haloperidol, 7% with tab. chlorpromazine and 4% with tab. Alkepin of whole.

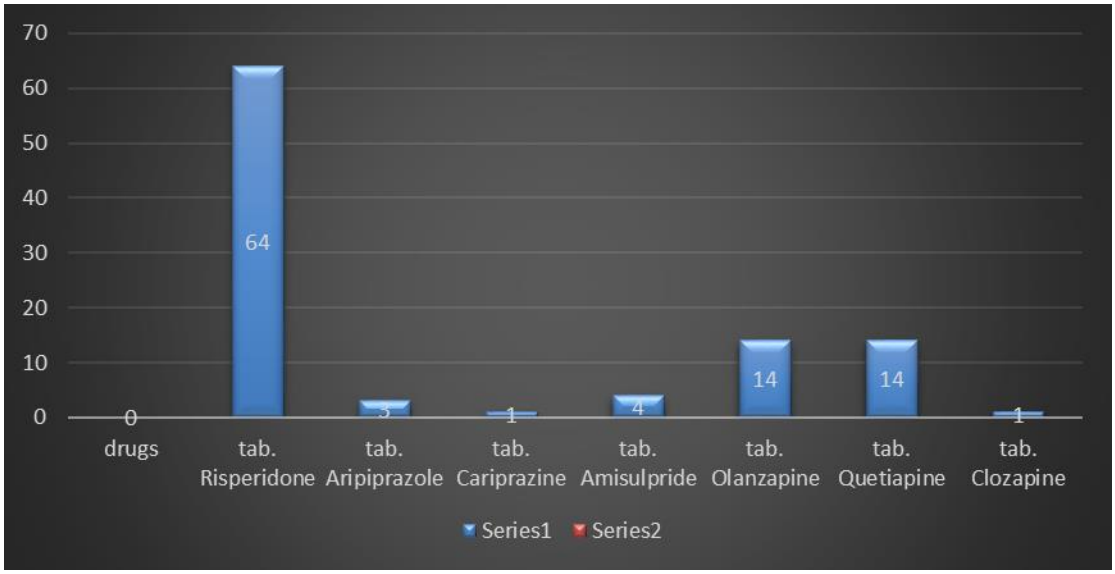

Figure 3 Atypical drugs wise distribution

Out of 100 Subjects in our study 64 patients have been prescribed with tab. Risperidone, 14 patients are prescribed with tab. Olanzapine and quetiapine of whole.

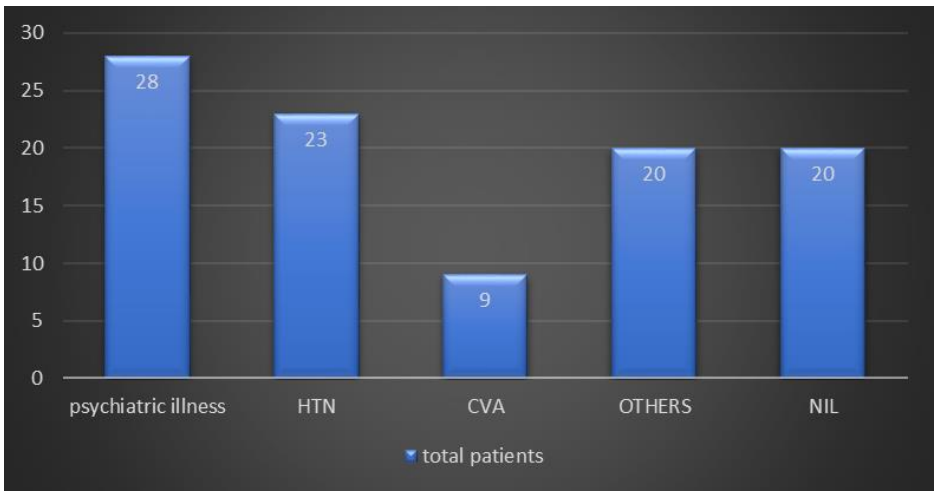

Figure 4 Distribution of family history

Among 100 patients, 28(28%) patients were having a family history of psychiatric illness, 23(23%) patients were having a history of HTN of whole.

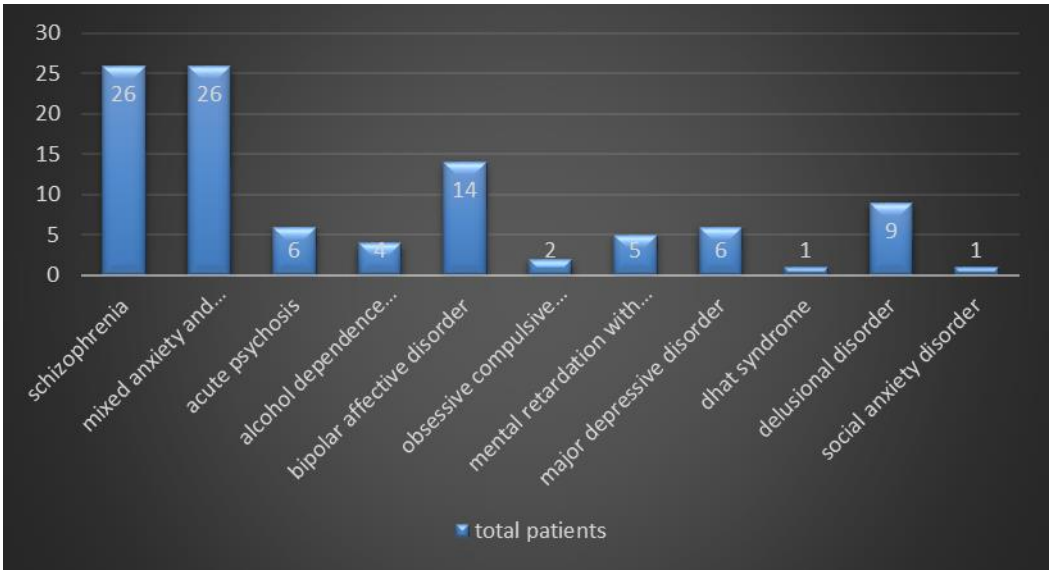

Figure 5 Diagnosis wise distribution among the study population

Among100 Patients majority of the patients are diagnosed with schizophrenia 26 patients (26%), mixed anxiety and depressive disorder 26 patients (26%) of whole.

1.8. Family history

Table 1 Distribution of family history among study population

Family history	Total patients	Frequency
Psychiatric illness	28	28%
HTN	23	23%
CVA	9	9%
Others	20	20%
Nil	20	20%

1.9. Complaints

Table 2 Complaints wise distribution

Complaints	Total patients	Frequency
anger	30	30%
Excessive thoughts	30	30%
Loss of interest	9	9%
fearfulness	31	31%

1.9.1. Diagnosis

Table 3 Diagnosis wise distribution

Diagnosis	Total patients	Frequency
Schizophrenia	26	26%

Mixed anxiety and depressive disorder	26	26%
Acute psychosis	6	6%
Alcohol dependence syndrome	4	4%
Bipolar affective disorder	14	14%
Obsessive compulsive disorder	2	2%
Mental retardation with behavioural problem	5	5%
Major depressive disorder	6	6%
Dhat syndrome	1	1%
Delusional disorder	9	9%
Social anxiety disorder	1	1%

1.10. Typical drugs

Table 4 Typical drugs

Typical drugs	Total patients	Frequency
Tab. Haloperidol	25	25%
TAB. Chlorpromazine	2	2%
TAB. Alkepin	1	1%

1.11. Atypical drugs

Table 5 Atypical drugs

Atypical drugs	Total patients	Frequency
Tab. Risperidone	64	64%
Tab. Aripiprazole	3	3%
Tab. Cariprazine	1	1%
Tab. Amisulpride	4	4%
Tab. Olanzapine	14	14%
Tab. Quetiapine	14	14%
Tab. Clozapine	1	1%

2. Methodology

- Study Design: It is a comparative, observational, prospective study.
- Study Site: Prathima Institute of Medical Sciences, Karimnagar.
- Study Period: 6 months (Sep 2022- Feb 2023)
- Study population: 100.
- Study Criteria:
- Inclusion criteria:
  - Adults of age 18-55 years
  - Geriatrics above 60 years
- Exclusion criteria:

- Paediatrics
- Pregnant women

- Study procedure:
  - Out-Patients interviews are conducted in tertiary care hospitals.
  - Patients are interviewed about their knowledge, awareness, practices.
  - Patients are interviewed and patient counselling given by physician.
- Data sources:
  - Patient
  - Data that can be collected includes demographic details (age, gender, and occupation), and chief complaints & questionnaire.
  - Patient case-sheet
  - Diagnosis & laboratory reports.
  - The above data will be documented in the data collection form.
  - The collected data will be correlated and comparison will be done.

3. Results

The present study included a total of about 100 patients out of which 59 were males and 41 were females.

All the patients were categorized based on their age. Maximum numbers of patients were found to be from 30-35 years of age, which contributed to 20% of the total sample size. Although 25-30 years age group people were in the second position, it contributed to 17% of the sample size indicating that the incidences of psychiatric disorders are rising among adults and later adulthood as well. The least affected age group was 75-80 years which was 1% of the total sample size.

All the 100 patients enrolled in the study were prescribed Typical and Atypical antipsychotics. Both the group of drugs are quite efficacious in treating the psychotic symptoms but atypical are mostly preferred due to less risk of extrapyramidal syndrome with typical ones Among two, Atypical were most commonly prescribed (Risperidone 64%, Quetiapine 14%, and Olanzapine 14%). Typical antipsychotics are less commonly prescribed (Haloperidol 25%, Chlorpromazine 2%, Alkepin 1%).

Study conducted by Riyaz Ahmed Siddiqui et.al, stated that atypical antipsychotics are more commonly used as compared to the typical ones. Atypical Antipsychotics like Olanzapine, risperidone and quetiapine are preferred because of their lesser propensity to cause extrapyramidal adverse effects and they also helps in improving negative symptoms of schizophrenia.

Among the 100 patients, most common symptoms noted were Anger (30%), Excessive thoughts (30%), Fearfulness (31%) and Loss of interest (9%). Majority of the patients have decreased sleep (57%), (40%) patients have normal sleep, (3%) patients have increased sleep.

All the patients in the study followed mixed diet. Among these 30%, 15% and 2% were alcoholic, tobacco chewing and smoking respectively. However, 53% of the sample were neither alcoholic, smoking nor tobacco chewers. Among all the patients enrolled in the study 26% had schizophrenia, followed by mixed anxiety and depressive disorder (26%) and BPAD (14%), Acute psychosis (6%), Delusional disorder (9%), Alcohol dependence syndrome (4%).

Out of 100 patients, 26%of the patients claims 90%improvement, 22% of the patients claims 80% improvement, 19% of the patients claims 85% improvement and 17% of the patient claims 75% improvement.

4. Conclusion

In our study we have observed that there is a greater need for patient education regarding psychiatric illness in order to have better patient outcomes, and providing knowledge regarding medication adherence. Psychopharmacologic advances continue to dramatically expand the parameters of psychiatric treatment. Greater understanding of how the brain functions has led to more effective, less toxic, better tolerated and more specifically targeted therapeutic agents. In this study, among typical and atypical antipsychotics the later are more commonly prescribed compared to former as it has more effectiveness and less side effects.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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