



An-Najah National University
Faculty of Graduate Studies

**PHYSICIAN'S ADHERENCE TO
INTERNATIONAL TREATMENT GUIDELINES
FOR MAJOR PSYCHIATRIC DISORDERS:
A DESCRIPTIVE STUDY FROM PALESTINE**

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**This Thesis is Submitted in Partial Fulfillment of the Requirements for the Degree of
Master of Pharmacology , Faculty of Graduate Studies, An-Najah National University,
Nablus - Palestine.**

2022

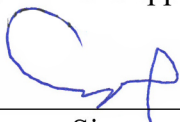
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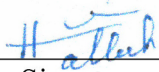
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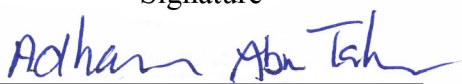
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Dedication

إلى الذي يرقد حيث تصله هداياه طبقاً على نور،

إلى الذي لو أهديته الدنيا لما كانت من قدره شيئاً،

إلى روح معلّمي الأول، والذي المهندس سعيد شبلي رحمه الله..

إلى التي أشعلت أناملها قبساً يضيء لنا طريق النجاح،

إلى القلب الذي ينبض دمه في عروقنا،

إلى الدعاء الذي يحمينا من كل شر، أمي الحبيبة

إلى الذي هم شمس حياتي وأقمارها،

من تقاسمنا الحياة منذ أن وطأت أقدامنا شوارعها،

والذين هم لا تكتمل الصورة إلا بهم، إخوتي الأحبة

إلى من تشابكت أقدارنا حتى صارت دربنا واحدة،

إلى شريك العمر القادم..

Acknowledgements

أحمد الله تعالى حمداً كثيراً طيباً مباركاً ملئ السموات والأرض على ما أكرمني به من إتمام هذه الرسالة التي أرجو أن تنال رضاه

ثم أتوجه بجزيل الشكر و عظيم الإمتنان إلى كلِّ من:

- الدكتور الفاضل / صهيب حطّاب، حفظه الله وأطال في عمره، لتفضله الكريم بالإشراف على هذه الرسالة، وتكرّمه بنصحي و توجيهي حتى إتمام هذه الرسالة.
- أعضاء لجنة المناقشة الكرام: الدكتور الفاضل ادهم ابوطه / مناقشاً داخلياً والدكتور الفاضل حسن الحلاق/ مناقشاً خارجياً، حفظهما الله لتفضلهما بقبول مناقشة هذه الرسالة.
- الدكتور الفاضل / إياد أبو بكر، استشاري أمراض نفسية وعصبية، لتفضله الكريم بتسهيل الوصول الى ما تطلّبتّه الرسالة من معلومات و بيانات.
- الزملاء والزميلات في عيادة الصحة النفسية-نابلس لما قدّموه من مساعدة أثناء العمل على الرسالة.

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Declaration

I, the undersigned, declare that I submitted the thesis entitled:

PHYSICIAN'S ADHERENCE TO INTERNATIONAL TREATMENT GUIDELINES FOR MAJOR PSYCHIATRIC DISORDERS: A DESCRIPTIVE STUDY FROM PALESTINE

I declare that the work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: Huda Said Shebli

Signature: Huda Shebli

Date: 3/11/2022

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Abstract

Background: Psychiatric disorders are progressively considered among the common health disorders affecting people worldwide. Data from Western countries show that psychiatric disorders are relatively prevalent.

Objectives: In this study, we aimed to assess the Palestinian psychiatrist's adherence to the international treatment guidelines in treating common psychiatric disorders. In addition, we aimed to explore the factors associated with non-adherence to the treatment guidelines.

Methodology: A retrospective study was conducted to examine psychiatrist's adherence to treatment guidelines and the factors associated with the non-adherence of patients diagnosed with schizophrenia, depression, anxiety, bipolar disorder, and schizoaffective disorders, which was obtained from the period May 2021 to September 2021 in an outpatient psychiatric clinic in the north of West Bank, Palestine.

Results: A total of 1070 prescriptions were examined. Most patients were aged between 36 and 55 years (47.8%), and two-thirds were males (63.8%). Most of the patients were diagnosed with schizophrenia (46%), while the rest were diagnosed with depression, bipolar disorder, schizoaffective, and anxiety (22.7%, 18.2%, 9.1%, and 4%, respectively). In general, the most commonly prescribed drugs were typical anti-psychotics (47%), followed by atypical antipsychotics, SSRIs, TCAs, BZD, anti-convulsants, and lithium (39.9%, 22.7%, 20.7%, 15.3%, 14.3%, and 3.6%, respectively).

Moreover, the study showed that the majority of psychiatric prescriptions (76.8%) were non-adherent to treatment guidelines and 64.7% of them were for males while 47.5% of non-adherent prescriptions were for adult patients aged 36-55 years old. The non-adherent prescriptions were significantly higher among patients diagnosed with schizophrenia (50.73%) (p-value=0.000). In addition, the study found that the majority of non-adherent prescriptions (37%) were due to the drug's unavailability in the psychiatric clinic.

Conclusions: The pharmacotherapy of the major psychiatric disorders in Palestine was not in line with the international treatment guidelines. The most common factors which were associated with the non-adherence are schizophrenia and drug unavailability.

Keywords: Adherence; Factors; Guidelines; Outpatients; Psychiatric Disorders.

Chapter One

Introduction and Theoretical Background

1.1 Common Psychiatric Disorders

1.1.1 The global prevalence of common psychiatric disorders

In the last decades, psychiatric disorders are increasingly considered among the most common health disorders affecting people worldwide. Data from Western countries indicate that psychiatric disorders are relatively prevalent. In the United States, data from the National Comorbidity Survey Replication study indicate that 25% of the general population experience a psychiatric disorder in a given year (1). Data from the European Study of the Epidemiology of Mental Disorders estimates that the lifetime-prevalence rate for psychiatric disorders among European general populations is 25.9% (1). The mental health pattern in Western countries is similar to that in Iran, but the prevalence of psychiatric disorders in Iran is probably lower than in those countries, this may be due to the tools and methods used for diagnosing the disorders (2). An epidemiological survey conducted in Iran estimated that 10.81% of the total of 25,180 individuals, collected by clustered random sampling method, suffered from one or more psychiatric disorders at one time in their lives (2). On the other hand, a cross-sectional analysis conducted in Cape York and the Torres Strait, a small region covering 7.5% of Queensland in Australia, on patients aged more than 15 years over just 3 months in 2010 found that only 1.68% of 171 participating patients have at least one psychiatric disorder (3).

Precisely, the prevalence of a specific type of psychiatric disorder varies among countries. For instance, anxiety disorders are the most common and the highest prevalent psychiatric disorders. A systematic review conducted in 2012, of almost 87 studies published between 1980 and 2009 from 44 countries, found that the prevalence of anxiety disorders ranged between 0.9% and 28.3% (4); the prevalence was different across races (5.3% in African cultures, 10.4% in Euro/Anglo cultures, 2.8% Indo/Asian, 3.2% Central/Eastern European, 4.9% North African/Middle Eastern and 6.2% Ibero/Latin cultures) (5). To a lesser extent, a meta-analysis of 9 studies conducted on ≥ 65 years old psychiatric

patients in Spain revealed that the lifetime prevalence of anxiety disorders in Spain was 19% (6). Likewise, the lifetime prevalence of anxiety disorders in Spain is almost as much as that in Turkey. Research consisting of 462 elderly people living in the Sivas province of Turkey demonstrated that the lifetime prevalence of anxiety disorders was 18.2% (7); whereas the prevalence of particular disorders was different (1.1% for panic disorder, 3.2% for obsessive-compulsive disorder (OCD), 3.0% for post-traumatic stress disorder (PTSD), 2.85% for social phobia and 11.5% for specific phobia) (7).

The second common prevalent disorder is depression. Epidemiological studies conducted on different populations have shown that the lifetime prevalence of major depression was in the range of 10-15%, while an American study found that the incidence of current depressive disorder was 3.4% (8). Data from the National Health and Nutrition Examination Survey from 2013 to 2016 estimated that 8.1% of ≥ 20 years old American people were diagnosed with depression and this percentage didn't change significantly over 10 years from 2007-2008 to 2015-2016 (9). Data from PubMed, PsycINFO, EMBASE-, and Cochrane Library were obtained to analyze several cross-sectional observational studies which contain statistics about the prevalence of depressive symptoms and depression disorder (10). A selected 83 systematic reviews and meta-analysis studies were included involving nearly 40 thousand individuals and concluded that the overall prevalence of depressive symptoms or depressive disorder was 27.0% (10). Different studies conducted in approximately 30 countries between 1994 and 2014 were collected using a search strategy and had been analyzed in one meta-analysis study to conclude that the lifetime prevalence of depression was nearly 10.8% (11).

Another common psychiatric disorder that has less prevalence than anxiety and depression disorders is bipolar disorder. Epidemiological studies estimated that the lifetime prevalence of bipolar type I disorder was 1% in the general population (12, 13). An additional cross-sectional study, of nearly 60 thousand community adults conducted in 11 different countries in America, Europe, and Asia using the World Health Organization Composite International Diagnostic Interview to estimate the prevalence of bipolar disorders found that the lifetime

prevalence of bipolar type I disorder was 0.6% while type II bipolar disorder has a prevalence of 0.4% (14). One more meta-analysis of 25 studies, almost from North or South America, found that the lifetime prevalence of bipolar type I and type II was 1.06% and 1.57%, respectively (15). Few epidemiological surveys conducted in England estimated the prevalence of bipolar disorders, with no distinguishing between two bipolar subtypes, and found that it was approximately 2% (16). One study evaluated the increasing frequency of mania and bipolar disorder by reviewing the US and international studies and reported that the prevalence had increased by the late 1990s to the 2000s from nearly 5% to 7% (17).

In addition to these psychiatric disorders, schizophrenia and schizoaffective disorders were the least prevalent disorders worldwide. Three systematic reviews conducted in different countries (one review includes 33 countries, the second review covers about 46 countries and the third one involves 25 various nations) of the prevalence of schizophrenia disorder were evaluated and revealed that the median lifetime prevalence of schizophrenia was 7.2 per 1000 persons (0.72%) (18). Another cross-sectional study included the mental health area in Carlos Haya Hospital in Malaga/Spain using multiple clinical databases and concluded that 1-year prevalence of schizophrenia disorder was 6.27 per 1000 patients (0.627%) (19). To a lesser extent, because the schizoaffective disorder is usually misdiagnosed with schizophrenia, the lifetime prevalence of schizoaffective according to a French study conducted in 2005 was between 0.5 and 0.8% (20). Recently, another survey conducted in 2019 and published in January 2022 identified the definition and the epidemiology of schizoaffective disorder and reported that the lifetime prevalence was approximately 0.3% (21).

1.1.2 The prevalence of common psychiatric disorders in Palestine

Almost all Eastern Mediterranean Region (EMR) countries had a larger mental disorder burden in comparison with the global level. According to a study published in 2017, Palestine has the highest burden of mental disorders in EMR (22, 23). In Palestine, mental health services are supplied by nearly 16 community health clinics in various cities in the West Bank and according to World Health Organization (WHO) World Health Report 2001 in Palestine, an

estimated number of patients in contact with community mental health services (inpatients) was about 33,000 while clinic visits (outpatients) were nearly 132,000 per year (24). In 2018, Health Annual Report in Palestine indicated that approximately 3150 new patients were entered into several mental health centers with an incidence rate of about 120 patients per 100,000 populations (25).

After that, in 2019, WHO reported that 1 in 5 people (about 22%) whether in conflict or post-conflict situations may have one of the types of psychiatric disorders, such as anxiety disorder, depression, post-traumatic stress disorder (PTSD), schizophrenia, or bipolar disorder. This means that more than 250,000 Palestinian people need significant psychosocial and mental health interventions (23).

Results investigate that PTSD, depression, and anxiety disorders are the most common psychiatric disorders in Palestine and more than one study was conducted in Gaza and West Bank to describe the effect of war and violence on psychological disorders, especially in children in addition to describe prolonged displacement, insecurity and limitation in financial, educational opportunities, mental health services with low quality of life (26-28). Particularly, a study conducted in Palestine following the Al-Aqsa intifada, by using questionnaires in an interview at home with 12 to 18 years old adolescents who were injured, found that 76.5% of intifada-related victims have post-traumatic stress disorder with a high risk to have other psychiatric disorders like depression and anxiety (29).

Likewise, another study was conducted to estimate the psychological distress in the wake of the second Uprising (Intifada) in nearly 230 children and adolescents living in Gaza and reported that 68.9% had PTSD, 40.0% had moderate-to-severe depression and 94.9% had severe anxiety (30). Moreover, in 2014 a household survey estimated the relationship between exposure to violence and mental disorders among approximately 2480 young people in Palestine and found out that 37% of them have anxiety disorder and 55% suffer from depression symptoms (31).

Two years ago, researchers were interested in assessing the effect of Coronavirus disease on depression severity among the Palestinian population

and, therefore, they conducted a cross-sectional web-based study using social media platforms like Facebook and Instagram through an online questionnaire and they used depression, anxiety, and stress scale (DASS) to estimate depression severity. About 2,820 respondents filled out the questionnaire and the study reported that the prevalence of depression was 57.5%, so it was recommended to provide psychological counseling and treatment (32). Another descriptive cross-sectional study was conducted to estimate the influence of Coronavirus disease on primary and secondary school students (10-18 years old) in Gaza using DASS and evaluated that 89.1% of nearly 420 participants students experienced anxiety, 72.1% had depression and 35.7% of them had stress (33).

In Hebron, a cross-sectional study was conducted to estimate the prevalence of depressive symptoms in > 60 years old people, using the geriatric depression scale: a score ≥ 5 indicated depressive symptoms-, and reported that approximately 52% of 290 participants experienced depressive symptoms (34). Other scales were used in 2019 to assess depressive and anxiety symptoms, like the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI), respectively, through an observational cross-sectional study performed on about 420 medical students from a major university in the West Bank of Palestine using a questionnaire. Out of those invited, only 286 students filled out the form and the results showed that 56.6% of the participants had minimal depressive symptoms, 20.3% had mild depressive symptoms, 14.0% had moderate depressive symptoms and 9.1% had severe depressive symptoms while 29.7% had mild-to-moderate anxiety symptoms, 25.5% had moderate-to-severe anxiety symptoms and 21.3% had severe anxiety symptoms (35).

Furthermore, a literature review included about 24 studies from West Bank and Gaza through articles in PubMed, Science Direct and Google Scholar revealed that the prevalence of anxiety was 6.69% using the general health questionnaire (GHQ) (28). Other systemic review and meta-analysis studies conducted across 15 countries within the EMR revealed that the prevalence of generalized anxiety disorder (GAD) in Palestine was 14.0% (36). To a lesser extent, schizophrenia disorder is less common than depression and anxiety disorder in Palestine according to a survey conducted in 2013 to examine mental health services in 13 community mental health centers in the West Bank including one psychiatric

hospital in Bethlehem-, and found out that 12.2% of the psychiatric patients were diagnosed with schizophrenia (37). Also, unfortunately, few studies were conducted in Palestine to estimate the number/prevalence of schizoaffective patients because psychiatrist usually treats them in the same way as schizophrenic patients.

A descriptive cross-sectional study was performed on an outpatient clinic in the north of West Bank, Palestine, and concluded that from a total of nearly 1045 participants, only 116 patients (11.1%) were diagnosed with schizoaffective disorder (38). Another study used CINAHL, PubMed, and Science Direct data to estimate Mental health needs and services in the West Bank, Palestine found that only 9% of psychiatric patients from mental health centers in Palestine were classified with schizoaffective disorder (37).

More than one study indicates that the prevalence of bipolar disorder is low in the Arab World. A cross-sectional descriptive study conducted in West Bank/Palestine revealed that 15.8% of psychiatric patients were diagnosed with bipolar disorder (this low percentage because the study was made among only outpatient psychiatric clinic) while other critical review study reported that only 1-5% of the population worldwide were affected by bipolar disorder and stated that there is limited data from the Arab world on bipolar disorder (36, 38, 39). In addition, a systematic review and meta-analysis study conducted across several databases found that the prevalence of bipolar disorder was nearly 0.2% in EMR (36).

1.2 Psychotropic medications

1.2.1 Types of psychotropic medications

Psychotropic medications are the essential way to treat numerous mental health disorders and neuropathological diseases through modulating chemical messengers and neurotransmitters in the brain to restore neural communication (40). The current classification of psychiatric medications was established by the WHO in 1976 using the ATC system (A; anatomical site of action, e.g., central nervous system [CNS], T; therapeutic indication, e.g., treatment of anxiety, and C; chemical class of the drug, e.g., selective serotonin reuptake inhibitor) (41). According to this classification, psychotropic medications include anti-psychotics, anti-depressants,

anti-epileptics, anxiolytics, mood stabilizers, analgesics, anesthetics, hypnotics, anti-dementia drugs, and others (41).

First of all, anti-psychotic agents are divided into two major types: first-generation antipsychotics (FGAs), also called typical, such as haloperidol, chlorpromazine, and fluphenazine, and second-generation antipsychotics, or atypical, such as clozapine, risperidone, olanzapine, and quetiapine (42). Secondly, anti-depressants are classified into more than 10 different classes based on their mechanism of action; they include selective-serotonin reuptake inhibitors (SSRIs) (e.g., escitalopram, citalopram, and fluoxetine), serotonin-noradrenaline reuptake inhibitors (SNRIs) (e.g., venlafaxine and duloxetine), selective noradrenergic reuptake inhibitors (NRIs) (e.g., reboxetine), noradrenaline-dopamine reuptake inhibitor (NDRI) (e.g., bupropion), noradrenergic and specific serotonergic antagonist (NASSA) (e.g., mirtazapine), serotonin antagonist and reuptake inhibitor (SARI) (e.g., trazodone), tricyclic antidepressants (TCAs) (e.g., amitriptyline, clomipramine, and imipramine), monoamine oxidase inhibitors (MAOIs) (e.g., phenelzine) and others (43). The third group is anti-epileptics, also called anti-convulsants, such as sodium valproate/valproic acid, carbamazepine (CBZ), topiramate lamotrigine, phenytoin, and levetiracetam (44). Fourthly, benzodiazepines (BZD) are the main class that has been approved as anxiolytic agents, such as alprazolam, diazepam, clonazepam, and lorazepam (45). Although CBZ and valproic acid are classified as anti-epileptic agents, they also have a mood stabilizer effect as well as lithium, the most used agent in psychiatric treatment as a mood stabilizer (46).

1.2.2 The development of psychotropic medications

Since the 1950s, typical anti-psychotics were initially used for the treatment of different psychiatric disorders by acting on postsynaptic dopamine D2 receptors in the central nervous system as blocker agents, with significant effects on 5-hydroxytryptamine (serotonin) 2A (5-HT_{2A}), alpha-1, muscarinic, and histaminic receptors (47). However, because of the poorly tolerated and potentially severe side effects of typical antipsychotics, such as weight gain, sedation, dizziness, anticholinergic activity (dry mouth, urinary retention,

constipation), and high risk of extrapyramidal symptoms (EPS), which include bradykinesia, tremor, rigidity, dystonia, tardive dyskinesia, and neuroleptic malignant syndrome, atypical antipsychotics were confirmed in the 1980s, and by 2001, 96% of the psychiatric prescriptions were atypical agents (47). They are distinguished from typical antipsychotics by working as antagonists on 5-HT_{2A} and D₂ receptors (Figure 1) (47).

Although atypical antipsychotics are more expensive, they are considered as.

Figure 1

The difference between conventional and atypical antipsychotics

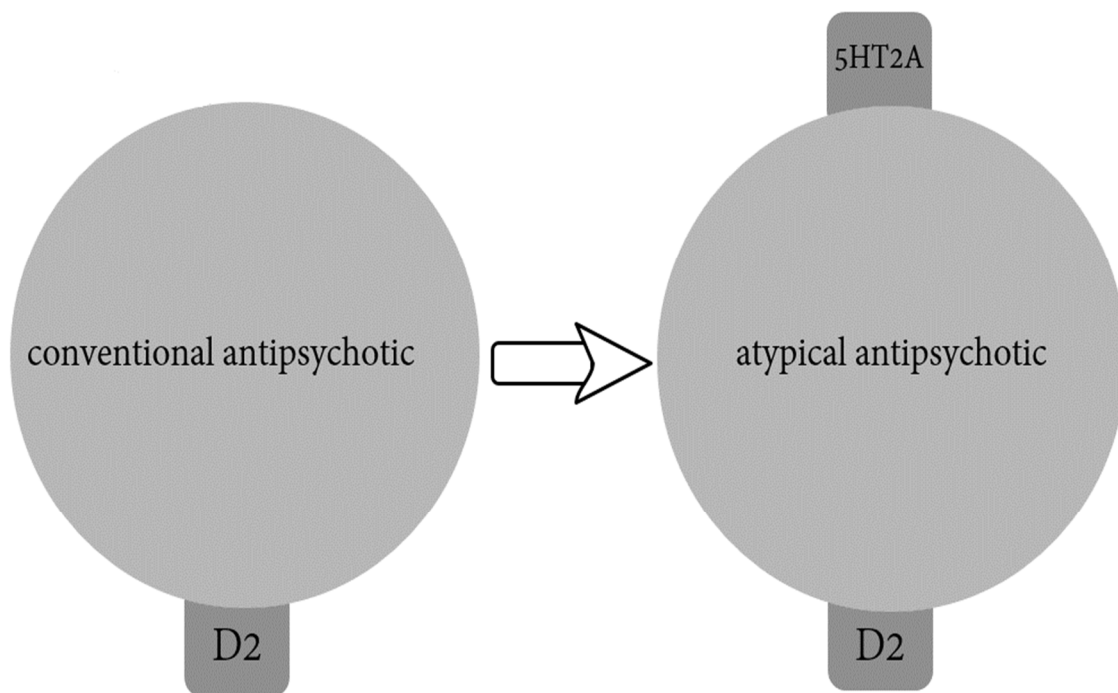
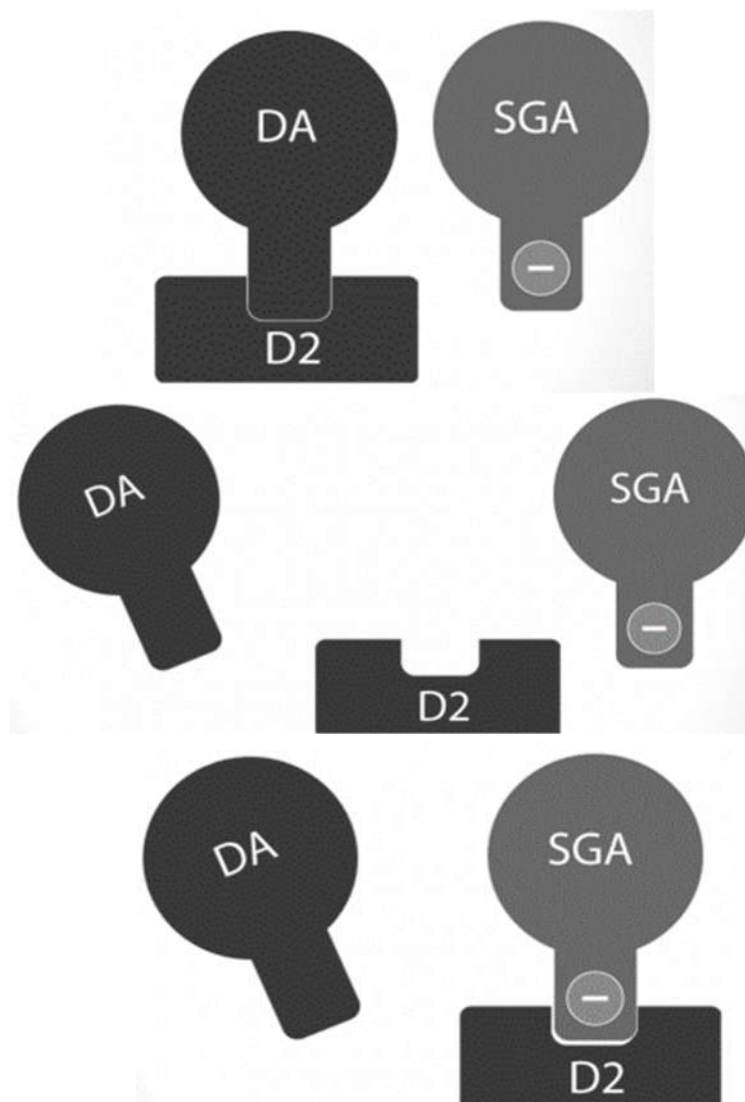


Figure 2

The dissociation of atypical antipsychotics from D2 receptors



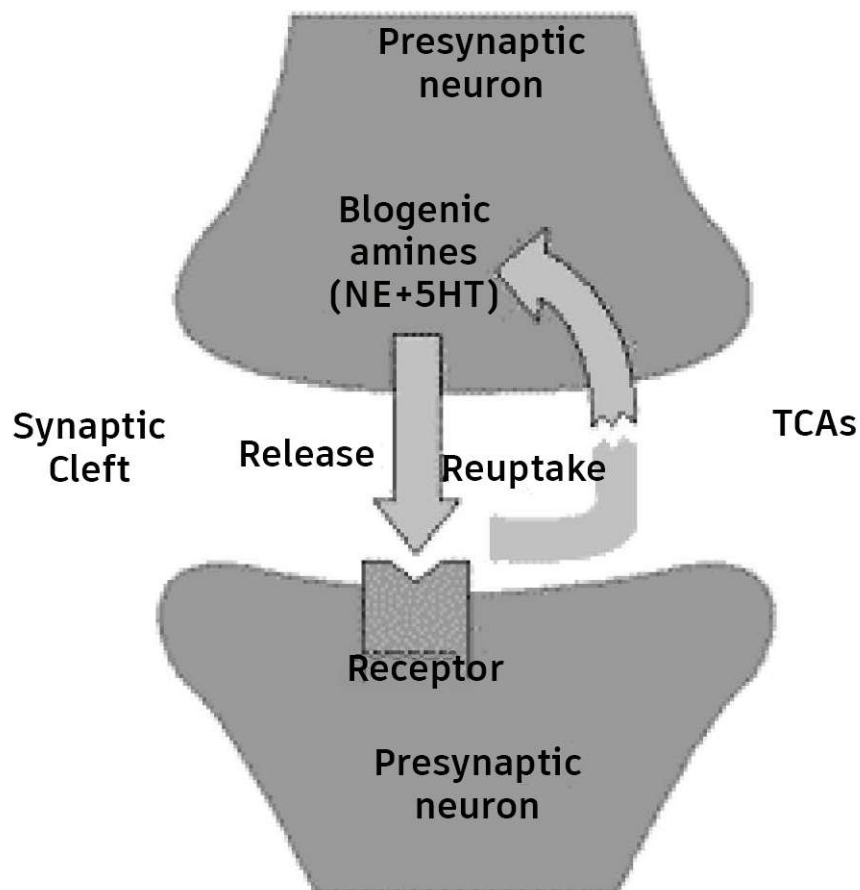
first-line treatment for patients with psychiatric disorders instead of typical agents because they are more effective with fewer side effects (48). The reason why they have fewer side effects, especially EPS, is due to rapid dissociation from D2 receptors allowing normal dopamine neurotransmission (Figure 2) (47, 49).

For depression, TCAs were approved in 1959 to treat the major depressive disorder (MDD) through different mechanisms: inhibit pre-synaptic norepinephrine and serotonin reuptake transporters, block post-synaptic alpha-1, muscarinic and histaminic receptors (50). At the time of discovery, they were classified as TCAs due to their structure because their mechanism of action was

unknown and because of their affinity to block different types of receptors (muscarinic, adrenergic, and histaminic), a lot of adverse effects may occur e.g., blocking muscarinic receptors may cause constipation, blurred vision, xerostomia, tachycardia, urinary retention, and confusion, and blocking adrenergic (alpha-1) receptors leads to dizziness and orthostatic hypotension, while blocking histaminic receptors may cause increased appetite, confusion, weight gain and sedation (Figure 3) (50, 51).

Figure 3

The mechanism of action of TCA



On the other hand, in the 1980s, benzodiazepines were approved, and replaced TCAs and MAOIs, to treat panic and anxiety disorders by acting on gamma-aminobutyric acid-A (GABA-A) receptor in the CNS, the site for GABA inhibitory neurotransmitter, leading to decrease neuron firing resulting in CNS depression and anxiety symptoms reduction (Figure 4) (52-55). Despite the high risk of dependence or abuse, benzodiazepines have a rapid onset of action so

they are used as acute anxiolytic medication (52). After that time, in 1987, studies revealed that increased serotonin concentrations in the synaptic cleft, by inhibiting the reuptake of serotonin rather than binding directly to the post-synaptic receptor, would contribute to treating MDD, so by 1988, selective-serotonin reuptake inhibitors were considered to be the first line anti-depressant agents used to treat depression and other psychiatric disorders, such as generalized anxiety disorder, and in the 1990s they became the main treatment for anxiety, as long-acting agents, or used concomitantly with benzodiazepines (50, 52, 56). Although SSRIs are selective serotonin and have little effect on dopamine, alpha-1, muscarinic and histaminic receptors, few side effects may occur such as sexual dysfunction, weight changes, sleep disturbances, gastrointestinal distress, and headache (Figure 5) (56).

Figure 4

The mechanism of action of benzodiazepines

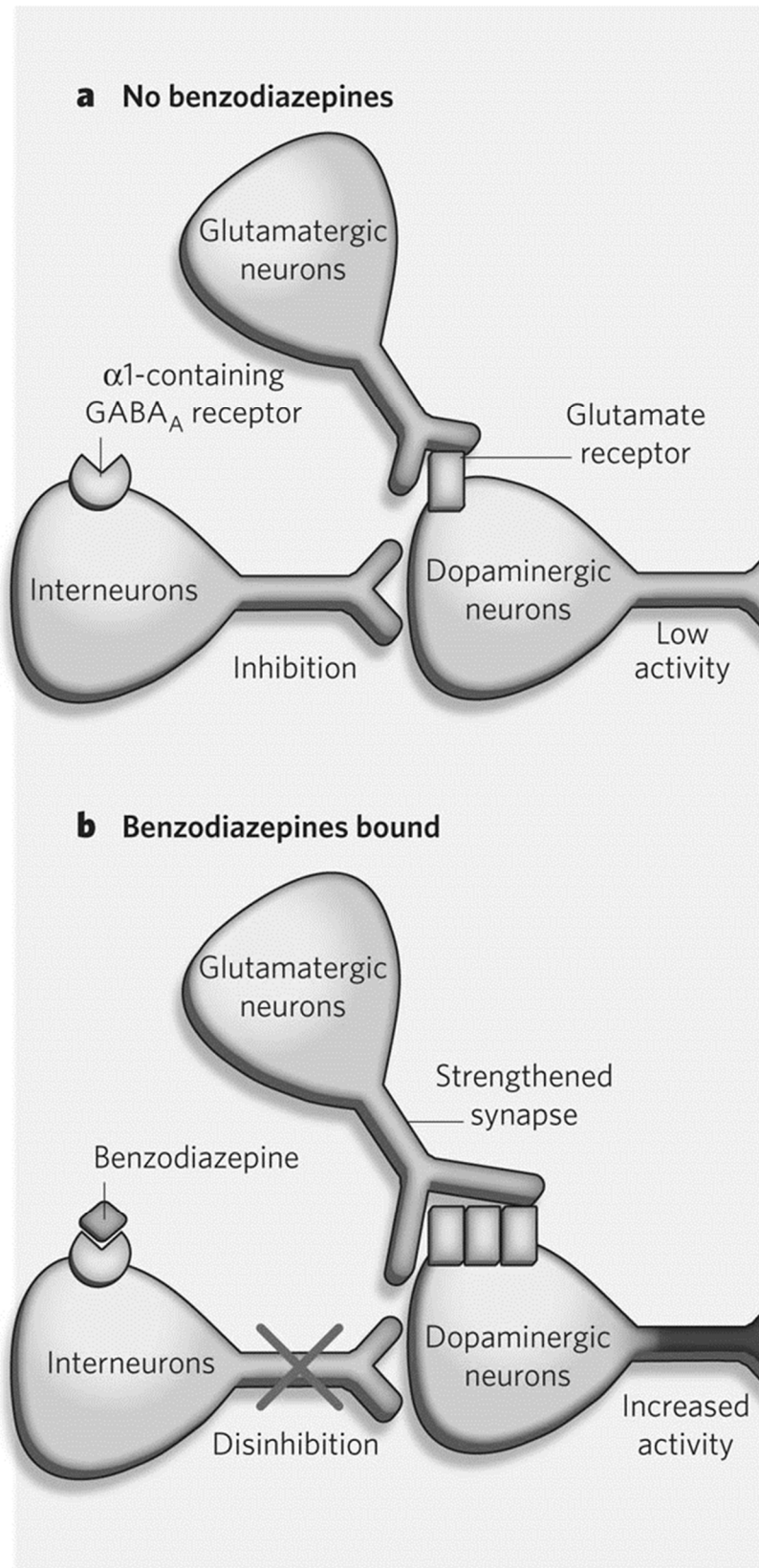
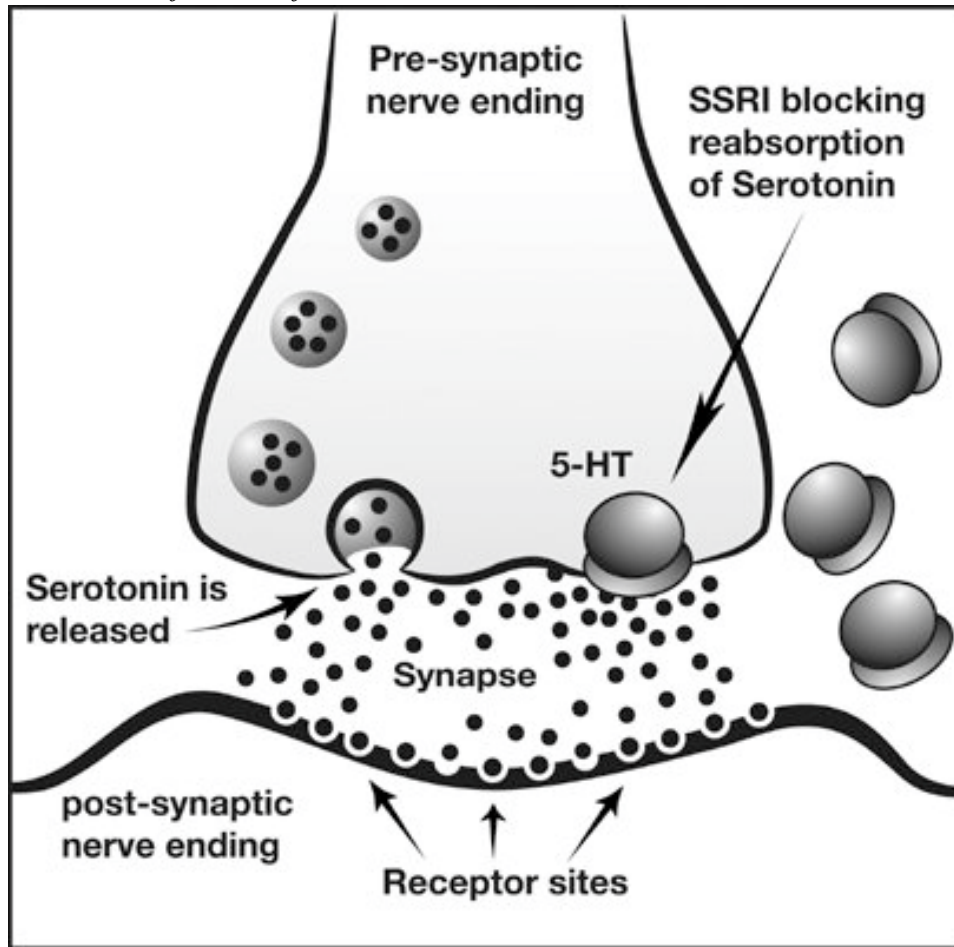


Figure 5

The mechanism of action of SSRIs

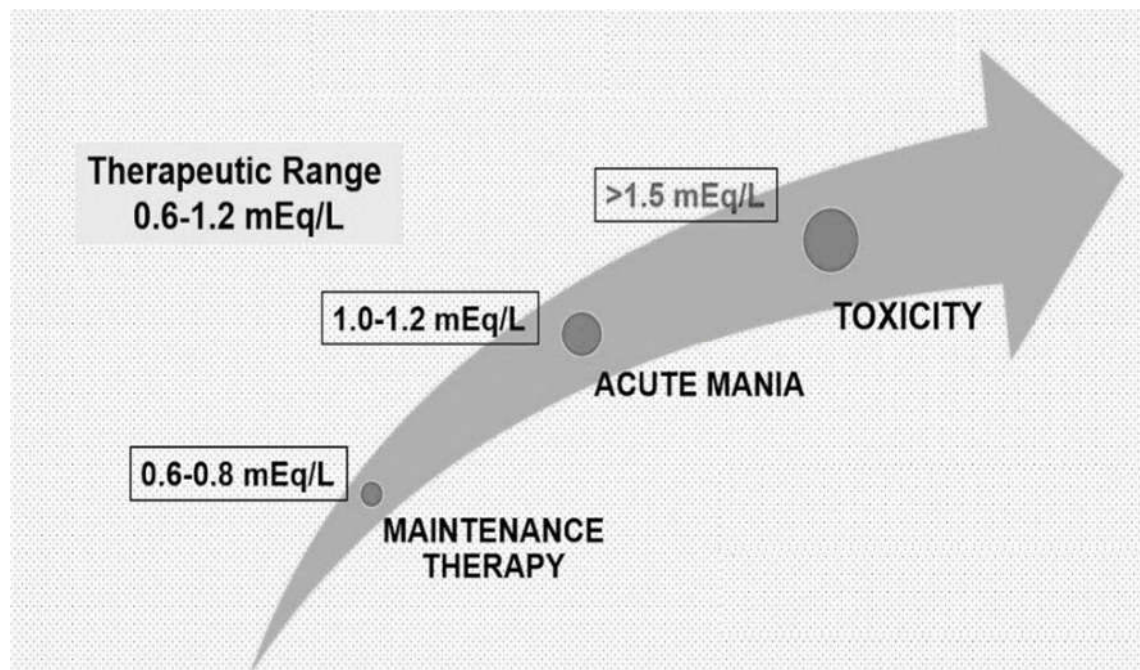


Whereas, over 60 years, lithium was approved to treat acute depressive and manic episodes, minimize the risk of suicide, and, reduce the frequency of mood episodes in patients with bipolar disorder due to its association with the neurotrophic pathways which contribute to the pathophysiology of the disorder, particularly for long-term prophylaxis (57, 58). However, lithium has a narrow therapeutic index and many side effects may occur such as weight gain, reduce urine concentration, hypothyroidism and hyperparathyroidism, and due to these side effects, in 2018, a study reported that 54% of 873 bipolar patients discontinued lithium and the study concluded to discuss the adverse effects before initiation and regularly during treatment with lithium (Figure 6) (57, 59, 60). Therefore, since 1995, valproic acid was approved by FDA to be used as a first-line treatment for acute and mixed mania because it has GABAergic and serotonergic properties and it is better tolerated than lithium, however, if

ineffective or there is no/poor response to valproate, adjunctive treatment with lithium or carbamazepine should be used (61, 62). Furthermore, carbamazepine has the same structure as that of TCA agents and it reduces the firing of action potentials through altering neurotransmission, so it is more effective in treating manic depression than valproate (61, 63). Otherwise, in 2003, lamotrigine was confirmed by FDA to treat bipolar disorder, especially in treating depressive symptoms when compared with carbamazepine because it has little affinity to the 5-HT₃ receptor (63, 64). Whereas, topiramate, another anticonvulsant agent, increases the GABA activation frequency of GABA-A receptors, so it is used to decrease weight and appetite and help with dependence and alcohol abuse which commonly exists in bipolar patients (63, 64).

Figure 6

The therapeutic index of lithium



1.2.3 Treatment guidelines for psychiatric disorders

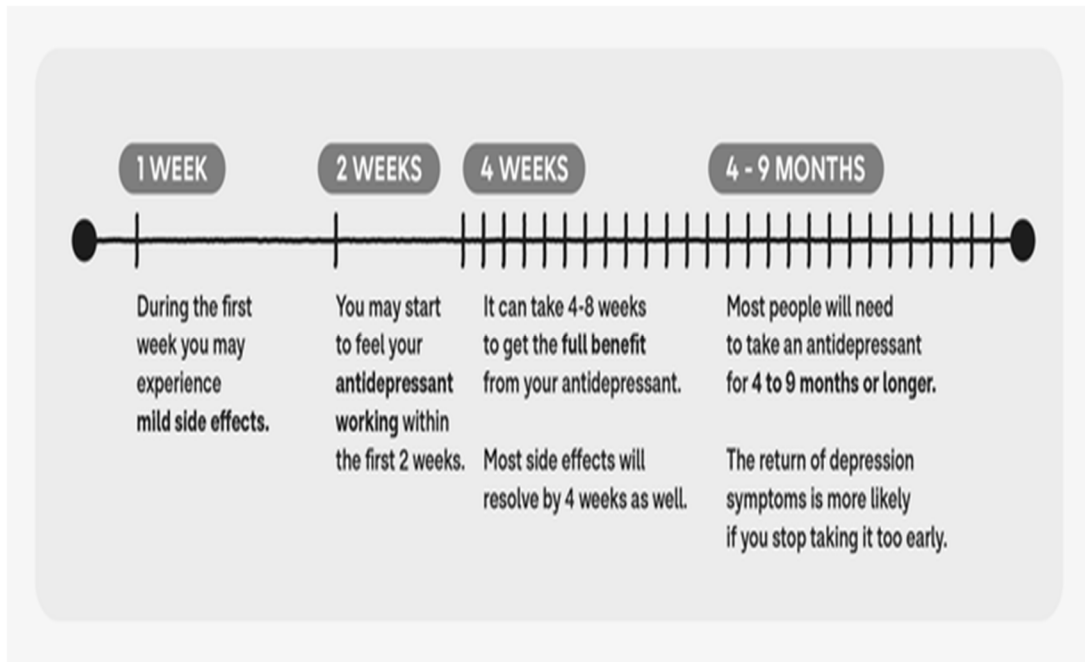
Psychological therapies, such as relaxation, problem-solving or cognitive-behavioral therapy, have minimal effect on anxiety treatment, so, pharmacotherapy is recommended (45). According to the Australian and New Zealand treatment guidelines, antidepressants, such as selective serotonin reuptake inhibitors and, to a lower degree, serotonin-norepinephrine reuptake

inhibitors, are the first-line treatment for GAD-, while using tricyclic antidepressants, as second-line agents, is reserved for patients who cannot tolerate or have not responded to SSRIs and SNRIs (45). According to the onset of action and treatment duration of SSRIs, SNRIs, and TCAs, experts recommended waiting at least six weeks with at least two weeks at the full dose for a response, then continuing for at least six months to a year (Figure 7) (45).

For mood disorders, depression, and bipolar, using some techniques of psychoeducation along with medicines. For example, encouraging self-management, understanding the nature of mood disorders, and decreasing stigma, is recommended to improve treatment outcomes, therefore, psychiatrist preferred using different medications such as antidepressants (SSRIs, SNRIs, and TCAs), mood-stabilizing agents, and second-generation antipsychotics (SGAs) (43). Regarding depression treatment, SSRIs are considered first-line antidepressants, starting with a low dose and titrated according to patients' responses, while TCAs become the second-line agents (65). However, on the other hand, atypical anti-psychotics were the first line agents to treat patients with bipolar disorder especially for the management of acute mania, as well as anticonvulsants, while using atypical antipsychotics in combination with other agents, such as lithium or valproate is recommended to prevent relapse of both depression and mania episodes (38, 66). Also, according to treatment duration, a six weeks trial is considered to be effective in case of depression episodes and, for a shorter duration, a three to four weeks trial for the acute manic episode (66).

Figure 7

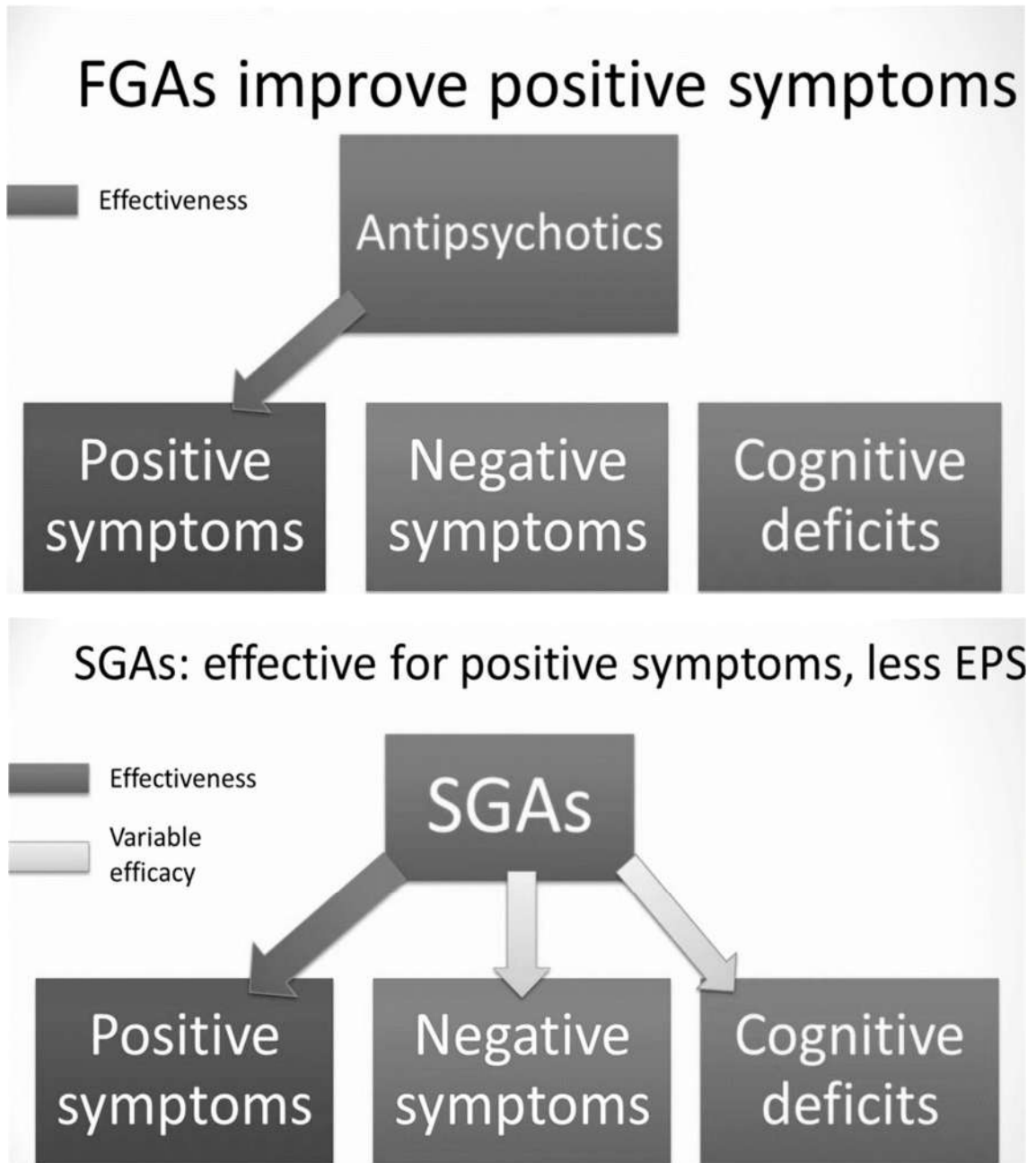
The onset of action and treatment duration of antidepressants



Likewise, a meta-analysis study revealed that atypical anti-psychotics were preferred over typical agents and considered these agents as first-line treatment for schizophrenia (67). Although typical antipsychotics decrease the risk of a psychotic episode and they are better to treat positive symptoms of schizophrenia such as delusions and hallucinations, atypical antipsychotics reduce relapse rates and use for treating both positive and negative symptoms like ambivalence and withdrawal (Figure 8) (42). According to the treatment duration of schizophrenia, in the first psychotic episode, the medication (atypical anti-psychotic) should be taken for at least two weeks along with monitoring the dose and response and after resolution of positive symptoms, maintenance treatment with anti-psychotics should be continued for at least 18 months (67).

Figure 8

First and second generation antipsychotics in treating positive and negative symptoms of schizophrenia



In the same way, because patients diagnosed with schizoaffective disorder are considered schizophrenic patients, atypical antipsychotics, as monotherapy, are the first line of treatment for schizoaffective disorder while using antidepressants or mood disorder agents in combination with anti-psychotics is considered to be a second line treatment (68).

In addition, there are other approved treatment guidelines for psychiatric disorders shown in the table below (Table 1) (69-79).

Table 1

Treatment guidelines for psychiatric disorders in different countries

Country/ treatment guidelines	Anxiety disorders	Depression	Bipolar disorder	Schizophrenia	Schizoaffective
USA	SSRI SNRI TCA BZD	SSRI NDRI SNRI TCA MAOIs	Lithium SGAs Anti- convulsants	SGAs FGAs	SGAs FGAs
UK	SSRI SNRI Pregabalin	SSRI SNRI TCA MAOIs	Lithium SGAs or SSRI Valproate	FGAs SGAs SSRI or SNRI	SGAs Lithium or valproate or lamotrigine SSRI
Canada	SSRI TCA SNRI	SSRI SNRI TCA SGAs MAOIs	or SGAs Lithium carbamazepine	or FGAs SGAs	FGAs SGAs

SSRI: Selective serotonin reuptake inhibitor

SNRI: Serotonin norepinephrine reuptake inhibitor

TCA: Tricyclic antidepressant

BZD: Benzodiazepines

NDRI: Norepinephrine-dopamine reuptake inhibitor

MAOIs: Monoamine oxidase inhibitors

SGAs: Second generation anti-psychotics

FGAs: First generation anti-psychotics

1.2.4 Psychotherapeutic drug interactions

Unfortunately, many unwanted severe drug interactions may occur because of pharmacodynamics or pharmacokinetic effects, so psychiatrists must be aware of these interactions when prescribing combination drugs (45). The most common mechanism of these interactions, as pharmacokinetic effects, is the induction or inhibition of cytochrome P450 (CYP) isoenzymes, which are essential for medication metabolism (80).

For instance, SSRIs, like paroxetine and fluoxetine, are potent inhibitors of CYP2D6 which leads to increase toxicity when used in combination with other drugs that are mainly metabolized by this enzyme such as TCAs, beta-blockers, and some anti-arrhythmic agents (45). In addition, studies reported that using fluoxetine in combination with phenytoin or clozapine leads to increase plasma concentrations of both two drugs, by 160% for phenytoin, and using fluoxetine will inhibit the metabolism of alprazolam, a benzodiazepine, which leads to increase alprazolam concentration leading to increase benzodiazepines' side effects, such as respiratory depression (81-83). Furthermore, carbamazepine concentrations increased when used with other CYP3A4 inhibitors drugs such as verapamil, ketoconazole, and macrolides antibiotics (84, 85).

An additional drug interaction that alters the pharmacokinetic process is drug clearance. For example, co-administration of non-steroidal anti-inflammatory drugs (NSAIDs) (e.g., indomethacin or piroxicam) with lithium will alter prostaglandin, which is involved in renal clearance of lithium, leading to increase lithium concentrations and using lithium in combination with angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin-receptor blockers (ARBs) will also decrease lithium renal clearance, because of sodium depletion, resulting in increased lithium reabsorption (86, 87).

On the other hand, some drug interactions may occur due to the same pharmacodynamic action. For instance, a high risk of serotonin syndrome may occur when a psychiatrist change or add another serotonergic or synergistic medication, taking into consideration appropriate washout time (e.g. required washout period for fluoxetine is at least one week before adding other antidepressants), so in general, using more than antidepressant agents should be avoided and combination of MAOIs with another antidepressant is not recommended (45). Also, using benzodiazepines with ethanol or other sedative agents such as barbiturates will increase the risk of respiratory depression because they have a synergistic effect, so patient respiratory monitoring is recommended and should be regularly performed (53). Moreover, the same pharmacodynamics properties of typical antipsychotics (such as chlorpromazine and haloperidol), in which they both prolong QT interval, will contribute in

increase the risk of cardiac arrhythmia when used together, as well as using atypical anti-psychotics concomitantly with typical agents may increase the number of adverse effects such as EPS, orthostatic hypotension, dizziness and drowsiness (88, 89). Furthermore, anticholinergic effects (blurred vision, delirium, and dry mouth) of clozapine, quetiapine, and olanzapine may increase if they are co-administered with TCAs or anti-parkinsonian agents like trihexyphenidyl (90).

1.3 Treatment-resistant psychiatric disorders

1.3.1 Definition of treatment-resistant psychiatric disorders

Regrettably, despite different types of psychotropic medications involved in treating psychiatric disorders, psychotic patients may not respond to the treatment, and treatment of these patients is still considered a public health problem; this is termed “treatment resistance” (91). Several definitions of treatment resistance were identified; three studies defined it using the term ‘no effect’ and fourteen studies used ‘minimal’ or ‘inadequate’ response, however, the standard definition is “inadequate response to at least two adequate treatment episodes, with the appropriate dose and for at least six weeks, with different drugs” (91, 92). Three components must be confirmed to establish treatment resistance: first, proper psychiatric diagnosis; second, appropriate treatment; third, persistent symptoms even with treatment (91). Nowadays, treatment resistance is common among several psychiatric disorders such as-, MDD, schizophrenia, obsessive-compulsive disorder (OCD), and bipolar disorder, therefore, treatment resistance to antidepressants and antipsychotics focused on the response of psychiatric symptoms with appropriate treatment (91).

1.3.2 Treatment-resistant depression

One review paper-, including articles conducted from 1996 to 2006, concluded that approximately 15% of depressive patients were classified with treatment-resistant depression (TRD) and defined it as inadequate response among patients with MDD despite appropriate antidepressant treatment (dose, duration, and compliance) (93). Different criteria were developed for confirming the presence of TRD, for example: no response to a single TCA, 4-weeks trial of MAOIs, a single antidepressant drug, three or more trials of treatment (one trial

must be with TCA), five or more appropriate treatments (one trial of electroconvulsive therapy) or a single trial of heterocyclic antidepressants (maprotiline, bupropion or trazodone) (93, 94). At last, patients with MDD are considered treatment-resistant when depression episode hasn't improved with at least two sufficient trials (6-8 weeks duration) of various types of antidepressants (93). There are many risk factors related to TRD including: depression character (level of hopelessness, suicidal ideation, and severity), environmental factors (maternal depression, history of abuse, and family conflict), psychosocial stressors, medical and psychiatric comorbidities, and treatment noncompliance (95, 96).

According to TRD management, a report found that physicians should review the initial treatment, re-evaluate the risk factors which may associate with treatment resistance, switch to another antidepressant, and use a combination of medication or psychotherapy (95). Also, other reports established additional choices, like vagal nerve or repetitive transcranial magnetic stimulation, electroconvulsive therapy, and, a more promising technique, deep brain stimulation (DBS) (95, 97).

1.3.3 Treatment-resistant schizophrenia

Similar to TRD, schizophrenic patients with persistent positive symptoms despite two, or more, trials with appropriate doses and duration accompanied with adherence to antipsychotics are classified as patients with treatment-resistant schizophrenia (TRS) (98). Patients with TRS must be confirmed with three criteria: 1) >16-years old patients diagnosed with schizophrenia or schizoaffective disorder; 2) have been using appropriate pharmacological treatment (failed 2 trials of ≥ 600 mg chlorpromazine equivalents per day with a duration of 4 weeks); and 3) still have persistence symptoms (EPS from conventional antipsychotics e.g., tardive dyskinesia) despite adequate antipsychotic treatment and addition of anticholinergic medications (99, 100). More than one study was conducted to estimate the prevalence of TRS. A systemic review report conducted in Australia concluded that approximately 20-45% of schizophrenic patients over 2 years' duration were partially responsive to anti-psychotic medication while 5-10% of them were not responsive at all,

and, to the same extent, in 2014 data from public health agencies and published literature in the United States concluded that nearly 22% of patients with schizophrenia were considered as treatment-resistant patients (100-103).

Two main strategies are usually used to manage treatment-resistant patients; one is to increase the dose of the existing antipsychotic drug or switch to another/new antipsychotic (104). Reports found that using clozapine as monotherapy, with caution and regular evaluation of the adverse effects, is the first option and the only approved treatment of TRS-, if treatment with at least two various antipsychotics has failed (101, 104). However, unfortunately, some patients may still have persistent psychotic symptoms even with using an appropriate dose and adequate duration of clozapine while others may consider being completely resistant or intolerant to clozapine (101, 105, 106). Therefore, psychiatrists tend to prescribe second or more antipsychotic agents, with clozapine, or add another type of psychotropic medications as an adjunctive treatment such as antidepressants, mood stabilizers, psychosocial interventions, or, latest strategy, electroconvulsive therapy (ECT) (100, 103, 105, 106).

1.4 Adherence to treatment guidelines

1.4.1 Definition of adherence to treatment guidelines

All treatments and strategies, which are used to treat various disorders, are termed clinical practice guidelines (CPGs), and they appear as a summary and comparison between the benefits and risks of available science that is translated into understandable form to support the management of clinical conditions leading to preferable outcomes and high safety and quality of healthcare (107, 108).

1.4.2 The benefits of adherence to treatment guidelines

The most important benefit which could be obtained from adherence to treatment guidelines is to reach better health outcomes (109). Also, according to potential benefits for patients, following CPGs could allow patients to consider their preferences and needs in choosing the best choice, reduce mortality and morbidity, in addition, to enhance their quality of life (109). Moreover,

physicians may detect new guidelines when patients inquire about treatment options, therefore, CPGs offer clear recommendations for physicians who are not sure about how to manage (109). On the other hand, there are many potential benefits of CPGs for healthcare systems such as reduction of hospitalization, surgery and procedures, prescription drugs, and money (109).

1.4.3 The adherence to the treatment guidelines in general (Worldwide)

CPGs for cardiovascular diseases have been developed 40 years ago by cooperation between the American College of Cardiology (ACC) and the American Heart Association (AHA) and reports found that the hospitals which followed ACC/AHA guidelines, to treat patients with acute myocardial infarction, had low mortality rates compared to the hospitals which did not adhere with these guidelines (107).

Additionally, in 2018, a cross-sectional study conducted in Spain found that 62.8% of participating physicians reported that they follow the clinical guidelines to manage the treatment of type 2 diabetes mellitus in elderly patients (110). Also, a retrospective cohort study conducted in 2011, to examine the relationship between the adherence to CPGs and outcomes in patients diagnosed with diabetes since 2004 in Korea, revealed that adherence to treatment guidelines leads to better outcomes among diabetic patients; however, following CPGs is still low for some treatment recommendations, such as tests (e.g., eye examination, low-density lipoprotein (LDL) cholesterol and urine albumin-to-creatinine ratio (UACR)), goals management (e.g., hemoglobin A1c (HbA1c) and blood pressure) and using medications (e.g., statins, anti-platelets drugs, ACEIs or ARBs) (111).

On the other hand, in 2008, a prospective observational study in Cyprus reported that 70.4% of physicians had followed the European guidelines for the management of hypertension, but approximately 25% of high-risk hypertensive patients were still untreated and 40% of low-risk hypertensive patients treated with inappropriate medications (112).

In 1990, the National Institutes of Health (NIH) Consensus conference stated that using chemotherapy after surgery for patients with colorectal cancer (CRC) was classified as a CPGs for management of CRC patients, therefore, in Canada, a population-based study conducted in 2005 found that approximately 59% of 1151 patients with CRC followed CPGs and received chemotherapy as an adjunct therapy after surgery (113).

Moreover, different statistics conducted by the National Center for Health Statistics and Centers for Disease Control and Prevention, found that approximately more than 1.3 million Americans are diagnosed with multiple chronic conditions (114, 115). In 2005, a retrospective review was conducted to evaluate the adherence to CPG in American patients who were living in long-term care facilities (LTCFs) and found that the residents who adhered to CPGs and followed disease state management (DSM) (by the pharmacist) were at lower risk of morbidity, mortality and hospitalization compared with who receive traditional drug regimen review (DRR) alone (in general, 28% of the residents were hospitalized at least one time during their stay and most common in patients >65 years old with heart disease), in addition to the reduction in medications' cost (114).

Furthermore, a qualitative study conducted in an Australian hospital to examine the effect of the adherence to CPGs in wound care on surgical site infections (SSIs) and found that nurses' adherence to CPGs (e.g., aseptic techniques and hand hygiene) would reduce and prevent SSIs (116).

Regarding psychiatric disorders (e.g., anxiety and depression), an observational analysis conducted by reviewing data from 1996 to 1998, which includes nearly 1131 patients with depression in American states, to examine how adherence to CPGs would improve depression outcomes and concluded that following the treatment guidelines resulted in clinical improvement and reduction in depression symptoms (117). Another closed-cohort study in outpatients who were treated in mental health centers in the Netherlands was conducted to investigate if adherence to anxiety disorder CPGs yields improved clinical outcomes compared with non-adherence, and found that adherent patients have higher symptoms reduction after 1-year duration than non-adherent patients (118).

1.4.4 The adherence to the treatment guidelines in general (Arab countries)

In Palestine, a cross-sectional study conducted in 2011 on about 400 participants (physicians and nurses) to examine the adherence to diabetes guidelines in primary care clinics revealed that half of them adhered only to 5 out of 11 tests that should be managed for the care of diabetic patients (younger physicians adhere less than older physicians) and they still depend on their science, experience and practice in treating diabetes patients (119). Also, another retrospective study was conducted to examine the adherence to American Diabetes Association (ADA) guidelines in treating pregnant women with gestational diabetes mellitus (GDM), nearly 200 diabetic patients were randomly selected from medical records of primary care clinics in King Khaled University Hospitals, Riyadh, Saudi Arabia, and revealed that there is a lack of diabetes care and poor adherence to ADA guidelines (120). Therefore, because the prevalence of pregnant women with GDM is increasing in low-income countries, the concept of adherence to ADA guidelines should be enhanced, and studies showed that adherence to these guidelines would decrease GDM complications (121). Likewise, physicians in Riyadh were not informed enough about updated diabetes guidelines, which leads to a lack of adherence and results in low patients quality of life, so several research showed the importance of adherence to guidelines and recommend physicians be aware of updated CPGs with enrollment in medical conferences and seminars (122).

According to the adherence to psychotropic medications in Palestine, a cross-sectional study at primary psychiatric centers conducted in North West-Bank (Nablus, Jenin, Tulkaram, and Qalqilia) between August 2011 and February 2012 to evaluate the conformance to schizophrenia treatment guidelines. The study revealed that 85.7% of prescribed antipsychotic agents were first generation antipsychotics which is not in conformance with schizophrenia international treatment guidelines (123). Another study conducted in an outpatient clinic in the North of West Bank between October 2018 to January 2019 to describe the pattern of prescribing psychotropic drugs in treating common psychiatric disorders compared with guidelines issued by the Royal Australian and New Zealand College of Psychiatrists concluded that the

pharmacotherapy of psychiatric disorders not in accordance to international treatment guidelines (38).

1.4.5 Non-adherence to treatment guidelines. Causes and consequences

Many factors are extremely associated with non-adherence to treatment guidelines in Palestine as well as in other countries. For example, there are many reasons associated with physicians, such as physician's lack of awareness about guidelines, lack of agreement with certain guidelines and providing care based on their practice experience, incorrectly applying CPGs to a specific clinical condition in addition to physicians, sometimes, consider that following CPGs is time-consuming treatment approach (109, 124, 125). In addition, other factors associated with non-adherence to treatment guidelines are reasons related to patients. For instance, patients' characteristics (e.g., gender, age, and residency) may be not compatible with CPGs as well as patient's preferences and tolerability may interfere with guidelines recommendations (124). Also, healthcare systems' potential limitations may affect adherence to CPGs by several methods. For instance, CPGs from different societies that cannot be reconciled, lack of availability, affordability, or feasibility of the intervention, limited time to try CPGs, waste of limited resources, and in addition to costly interventions (109, 124). In Palestine, especially, other barriers may interfere with adherence to CPGs, such as lack of specialists, occupation, and type of medical insurance (28).

1.5 The problem statement. Aims and importance of the study

In general, adherence to treatment guidelines is important, especially in treating chronic disorders such as hypertension, diabetes, and mental disorders. However, studies made in Palestine regarding this issue had shown that adherence to treatment guidelines is still inadequate.

In this study, we aimed to assess the Palestinian psychiatrists' adherence to the international treatment guidelines in treating common psychiatric disorders. In addition, we aim to explore the factors associated with non-adherence to the treatment guidelines.

Defining the cause of non-adherence to treatment guidelines-, will make decision-makers able to manage these factors and improve adherence which is very important in the context of treating common psychiatric disorders as shown above.

Chapter Two

Methods

2.1 Study design and setting

The study was conducted in a retrospective design to assess psychiatrists' adherence to treatment guidelines for major five psychiatric disorders (anxiety disorders, depression, bipolar disorder, schizophrenia, and schizoaffective disorders). The documented patients' data were used to obtain information about socio-demographic characteristics (gender, age, and residency), diagnosis, and psychotropic medications from an electronic system called Avicenna used by the medical centers that belong to the Palestinian Ministry of Health. The most common prescribed psychotropic medications were classified into eight classes; typical anti-psychotics (fluphenazine, chlorpromazine, and haloperidol), atypical antipsychotics (clozapine, olanzapine, risperidone, and quetiapine), selective serotonin reuptake inhibitors (escitalopram, citalopram, and fluoxetine), tricyclic antidepressants (amitriptyline and clomipramine), benzodiazepines (clonazepam, alprazolam, and diazepam), anticonvulsants/antiepileptics (carbamazepine, valproic acid/sodium valproate, lamotrigine, phenytoin, and topiramate), mood stabilizer (lithium) and anticholinergic agent (trihexyphenidyl). All prescriptions made between May 2021 and August 2021 were collected and for each of the patients the last visit was considered to decide if the physician was adherent to treatment guidelines or not.

Mental health services in Palestine are provided through 16 specialized psychiatric and community health clinics in West Bank, including a mental health center for children and adolescents in the North Hebron Health Directorate. In addition, there is one central psychiatry hospital located in Bethlehem. It provides secondary psychiatric services for the population in the West Bank. The primary psychiatric health services as well as some of the neurologic disorders services are provided for both adolescents and adults by outpatient health clinics located in the main cities. This study was conducted in the main public outpatient psychiatric clinic in the north of the West Bank of Palestine/Nablus.

2.2 Study population and sample selection

All prescriptions made at the outpatient public psychiatric clinic in Nablus were obtained. We only included those that were issued for patients diagnosed with anxiety disorders, depression, bipolar disorder, schizophrenia, and schizoaffective disorders. Otherwise, prescriptions made for neurological disorders such as epilepsy, intellectual disability, mental retardation, Alzheimer's disease, and obsessive-compulsive disorder (OCD) were excluded.

2.3 Study tools

In this study, we collected the data (patient's information) using a data collection sheet that included the patient's socio-demographic characteristics (age, gender, and residency), diagnosis, time of diagnosis, and the onset of therapy as shown in Appendix A. Also, we used another data collection sheet for physicians to indicate the factors associated with the non-adherence as shown in Appendix B.

Many literatures have mentioned a number of factors that may be associated with physicians' non-adherence to treatment guidelines. For instance, drug unavailability (i.e. when the physician prescribes a drug other than recommended one because it is not available in the pharmacy clinic at that time), drug's lack of efficacy in treating patients (i.e. when the recommended drug failed to achieve the treatment goal with appropriate duration according to the opinion of the treating physician), comorbidity (the patient has more than one psychotic disorder), multiple doses of drugs (the patient should take the drug more than once daily), unwanted drug side effects, medication's cost, multiple drug therapy (the patient has another disease along with psychotic disorders), patient's preference and physician's lack of awareness about updated guidelines (lack of training or education).

2.4 Study procedures and validation indicators

Current guidelines stated by the Royal Australian and New Zealand College of Psychiatrists (which are similar to American Psychiatric Association (APA) guidelines) provide guidance to help psychiatrists and other mental health professionals in their work. Those guidelines were used to compare our results.

On the 1st of May 2021, we began to collect the ID number of outpatients in the psychiatric clinic of the Mental Health Center in Nablus by using documented patients' profiles in the data storage compartment in the clinic. Then, at the beginning of June, we started to obtain patients' medical information by using the Avicenna medical system (version 2.3.10r), which is designed to improve patient safety, reduce unnecessary hospitalizations and help the physician in reaching any patients' data such as-, age, gender, diagnosis, date of diagnosis, treatment history, and current medications, just through writing patients' ID number and all of his/her medical information will be appear. By using the system, we collected the information through data collection sheet (Appendix A). After that, depending on the current international treatment guidelines for the major five psychiatric disorders, we decide if the physician was adherent to these guidelines or not depending on the treatment in the last visit and each patient has only one prescription.

Then, we arranged the data collection sheets and sorted them into two groups. The first one was all data collection sheets which classified as adherent to international guidelines. The second group was the non-adherent data collection sheets which later have been sorted out into different classes depending on the factor associated with non-adherence to treatment guidelines (Appendix B). At the beginning of September, all data was collected and ready to be analyzed.

2.5 Statistical analysis

All collected data were analyzed using Statistical Package for the Social Sciences (SPSS), Version21 (IBM Corp, USA) in about two months. Simple descriptive statistics were used to analyze the socio-demographic characteristics of participants, diagnosis, the most used psychotropic drugs, and adherence to treatment guidelines. In addition, more advanced statistics were performed to

obtain the association of the non-adherence according to the socio-demographic variables and diagnosis considering the p-value to explain if these variables significantly affect the non-adherence to treatment guidelines. After that, we analyzed the factors associated with the non-adherence and then correlated them with the major five psychiatric disorders.

2.6 Ethics approval

This study targeted the prescriptions made by physicians at the target clinics, retrospectively, and no patient interviewing was required during this study. Data were collected anonymously and saved in a flash drive in a safe place with the principal investigator.

The study received ethical approval (appendix C) from the Institutional Review Board (IRB) of An-Najah National University (2nd of March, 2021).

After that, we made a request which was directed to the Palestinian Ministry of Health to get permission to start our data collection of outpatients in the psychiatric clinic of the Mental Health Center in Nablus. Subsequently, on April 22, 2021, our request was approved.

Chapter Three

Results

3.1 Socio-demographic characteristics of participants

In general, approximately 1500 outpatients' prescriptions were found in the psychiatric clinic of the Mental Health Center in Nablus. Of these, only 1070 (71.33%) were analyzed during this study while the rest were excluded because they were for neurological disorders such as epilepsy, mental retardation, intellectual disability, OCD, and Alzheimer's disease. The majority of patients were males (63.8%), whereas the rest were females (36.2%). According to age, more than half of the patients were adults (>18 years), the majority were between 36 and 55 years of age (47.8%), whereas the rest were ≥ 56 years of age. Based on residency, most of the patients are living in the city (50.5%) whereas 27.6% are living in a village and the rest are living in a camp (21.9%). According to the diagnosis documented in the prescriptions, most of the patients were schizophrenia (46%), while the rest were diagnosed with depression (22.7%), bipolar disorder (18.2%), schizoaffective (9.1%), and anxiety (4%) respectively. The frequency and percentage of descriptive characteristics of patients are shown in Table 2.

Table 2

Characteristics of patients and frequency of prescribed psychotropic medications in outpatients' psychiatric clinic in Palestine/Nablus (n=1070)

	Characteristic	Frequency (n)	Percentage (%)
Gender	Male	683	63.8
	Female	387	36.2
Age	(10-17)	3	0.3
	(18-35)	185	17.3
	(36-55)	512	47.8
	(56-65)	251	23.5
	(>65)	119	11.1
Residency	City	540	50.5
	Village	296	27.6
	Camp	234	21.9
Diagnosis	Schizophrenia	492	46
	Depression	243	22.7
	Bipolar disorder	195	18.2
	Schizoaffective	97	9.1
	Anxiety disorder	43	4
Psychotropic drugs	Typical antipsychotics	503	47
	Anti-cholinergic	427	39.9
	Atypical antipsychotics	337	31.5
	SSRI	243	22.7
	TCA	221	20.7
	BZD	164	15.3
	Anti-convulsants	153	14.3
	Mood stabilizer	39	3.6

3.2 Commonly prescribed psychotropic drugs according to diagnosis

Despite the diagnosis, the most commonly prescribed psychotropic drugs were typical anti-psychotics (47%), anti-cholinergic drugs (39.9%), atypical antipsychotics (31.5%), SSRI (22.7%), TCA (20.7%), BZD (15.3%), anti-convulsants (14.3%), and lithium, as a mood stabilizer, (3.6%).

Subsequently, the prescriptions were further analyzed for the type of psychotropic medications used according to patients' diagnoses. The frequency and percentage of psychotropic drugs according to psychotic disorders are shown in Table 3. The most prescribed psychotropic drugs for patients diagnosed with schizophrenia were typical anti-psychotics (71.3%), followed by anticholinergic agents (63%) while 41.3% of prescribed drugs were atypical antipsychotics. For patients who were diagnosed to have depression, the most frequently prescribed anti-depressants were SSRIs (50.2%), TCA (45.3%), and BZD (18.5%). Regarding the patients who were diagnosed with bipolar disorder, 42.1% of them were managed by using typical anti-psychotics, followed by atypical anti-psychotics (36.4%) and anti-cholinergic agents (26.7%). To a lesser extent, 25.1% of the prescriptions were anticonvulsants and the least prescribed agent was lithium (10.8%).

For patients who were classified as schizoaffective, similar to schizophrenic patients, more than half of the cases were managed by using typical antipsychotics (61.9%), followed by anticholinergic agents (55.7%) and atypical antipsychotics (40.2%). Finally, for patients who suffered from anxiety disorders, the most commonly prescribed drugs were SSRIs (39.5%), followed by TCA (30.2%), and to a lesser extent, BZD (27.9%).

Table 3

The most commonly prescribed psychotropic medications according to diagnosis in outpatients' psychiatric clinic in Palestine/Nablus (n=1070)

Psychiatric disorder	Psychotropic drugs	Frequency (n)	Percentage (%)
Schizophrenia (n=492)	Typical antipsychotics	351	71.3
	Anti-cholinergic	310	63
	Atypical antipsychotics	203	41.3
	SSRI	48	9.8
	Anti-convulsants	47	9.6
	TCA	46	9.3
	BZD	43	8.7
	Mood stabilizer	11	2.2
Depression (n=243)	SSRI	122	50.2
	TCA	110	45.3
	BZD	45	18.5
	Anti-convulsants	25	10.3
	Atypical antipsychotics	22	9.1
	Anti-cholinergic	11	4.5
	Typical antipsychotics	10	4.1
	Mood stabilizer	0	0
Bipolar disorder (n=195)	Typical antipsychotics	82	42.1
	Atypical antipsychotics	71	36.4
	Anti-cholinergic	52	26.7
	Anti-convulsants	49	25.1
	BZD	47	24.1
	SSRI	39	20
	TCA	36	18.5
	Mood stabilizer	21	10.8
Schizoaffective (n=97)	Typical antipsychotics	60	61.9
	Anti-cholinergic	54	55.7
	Atypical antipsychotics	39	40.2
	Anti-convulsants	21	21.6
	BZD	17	17.5
	SSRI	17	17.5
	TCA	16	16.5
	Mood stabilizer	5	5.2
Anxiety (n=43)	SSRI	17	39.5
	TCA	13	30.2
	BZD	12	27.9
	Anti-convulsants	11	25.6
	Mood stabilizer	2	4.7
	Atypical antipsychotics	2	4.7
	Typical antipsychotics	0	0
	Anti-cholinergic	0	0

3.3 Physicians' adherence to the international guidelines in treating major psychiatric disorders in outpatients' psychiatric clinic in Palestine/Nablus (n=1070)

Based on the Royal Australian and New Zealand College of Psychiatrists treatment guidelines, which is similar to APA guidelines, we examined if the physicians were adherent to these treatment guidelines. The results found that 76.8% (n=822) of psychiatric prescriptions were not adherent to these guidelines while only 23.2% (n=248) of the prescriptions were follow the treatment guidelines (Table 4).

Table 4

The frequency and percentage of adherence to the psychiatric treatment guidelines in outpatients' psychiatric clinic in Palestine/Nablus (n=1070)

Adherence to treatment guidelines	Frequency (n)	Percentage (%)
Yes	248	23.2
No	822	76.8
Total	1070	100

3.4 The non-adherence to the psychiatric treatment guidelines according to the participant's socio-demographic variables and diagnosis (n=822)

By using statistical analysis, we explored the relationship between physician's non-adherence to treatment guidelines with the socio-demographic variables of patients and their diagnosis (Table 5). The results showed that out of 822 non-adherent prescriptions, 64.7% (n=532) of them were for males, and approximately half of the prescriptions (47.5%) were for patients aged between 36 to 55 years.

Table 5

The frequency and percentage of the non-adherence prescriptions according to the socio-demographic variables and diagnosis (n=822)

	Characteristic	Non-adherence (n=822)	Percentage (%)	p-value
Gender	Male	532	64.7	0.271
	Female	290	35.3	
Age	(10-17)	2	0.24	0.164
	(18-35)	132	16	
	(36-55)	390	47.5	
	(56-65)	204	24.82	
	(>65)	94	11.44	
	City	405	49.27	
Residency	Village	233	28.35	0.362
	Camp	184	22.38	
Diagnosis	Schizophrenia	417	50.73	0.000
	Depression	152	18.49	
	Bipolar disorder	136	16.55	
	Schizoaffective	84	10.22	
	Anxiety disorder	33	4.01	

According to the diagnosis, the non-adherent prescriptions were significantly higher among patients diagnosed with schizophrenia (50.73%) compared to those diagnosed with depression (18.49%), bipolar disorder (16.55%), schizoaffective (10.22%) and anxiety (4.01%) (P-value=0.000). Regarding residency, there was no difference in the prevalence of non-adherence.

3.5 The effect of suggested factors that were associated with the non-adherence to the treatment guidelines

After sorting the data collection sheets into two groups (adherent and non-adherent to treatment guidelines), we classified the non-adherent one into nine factors that could be associated with the non-adherence to the treatment guidelines by interviewing the psychiatric physician. As mentioned above, the potential factors that were associated with the non-adherence are arranged in Table 6 according to the most frequent one in a descending manner.

The factor that has commonly affected the non-adherence to the treatment guidelines is the unavailability of appropriate medication in the psychiatric clinic of the Mental Health Center in Nablus with a percentage of 37%. Approximately, in the same manner, the lack of efficacy of medication represents the second possible factor that may affect adherence to treatment guidelines (28.16%). To a lesser extent, the patients who have more than one psychotic disorder (which is classified as comorbidity), will be less likely to adhere to the treatment guidelines with a percentage of 22.1%. Whereas, 12.75% of the psychiatric prescriptions were non-adherent to the treatment guidelines because of the multiple doses of psychotic medications.

Other mentioned factors, such as drug's side effects, medication cost, physician's lack of awareness about updated guidelines, patient preference, and multiple drug therapy were not found in any non-adherent prescriptions.

Table 6

The frequency and percentage of the factors associated with the non-adherence to the treatment guidelines (n=1,122)

Factors	Frequency (n)	Percentage (%)
Unavailability	415	36.99
Lack of efficacy	316	28.16
Comorbidity	248	22.10
Multiple doses	143	12.75

3.6 The distribution of factors associated with the non-adherence to the treatment guidelines according to the five psychiatric disorders

After analyzing most factors that were associated with the non-adherence to the treatment guidelines, subsequently, we found that the distribution of these factors varies among the major five psychiatric disorders (Table 7).

The results showed that most psychotic prescriptions non-adhere to the international guidelines in treating schizophrenia, depression, schizoaffective, and anxiety disorders because of the unavailability of appropriate medication while non-adherent psychotic prescriptions for bipolar disorder were because of comorbidity.

For all psychotic disorders, lack of drug efficacy is the second factor associated with non-adherence to treatment guidelines except for patients diagnosed with depression where comorbidity is the second factor.

For schizoaffective disorder and anxiety, comorbidity is the third factor affecting adherence to treatment guidelines while multiple doses, unavailability of medications, and lack of drug efficacy are the third cause of regarding schizophrenia, bipolar disorder, and depression, respectively.

Table 7

The frequency (n) of psychiatric disorders related to the factors that associated with non-adherence to the treatment guidelines

Factors/Diagnosis (n)	Schizophrenia (n=579)	Depression (n=187)	Bipolar disorder (n=186)	Schizoaffective (n=118)	Anxiety disorder (n=52)
Unavailability (n=415)	183 (31.6%)	116 (62.03%)	50 (26.88%)	40 (33.9%)	26 (50%)
Lack of efficacy (n=316)	180 (31.1%)	29 (15.51%)	57 (30.65%)	35 (29.66%)	15 (28.85%)
Comorbidity (n=248)	102 (17.6%)	42 (22.46%)	65 (34.95%)	28 (23.73%)	11 (21.15%)
Multiple doses (n=143)	114 (19.7%)	0 (0.00%)	14 (7.52%)	15 (12.71%)	0 (0.00%)

Eventually, multiple drug doses are the least factor associated with non-adherence to international treatment guidelines for schizoaffective, bipolar disorder, depression, and anxiety except for schizophrenia.

3.7 The distribution of factors associated with the non-adherence to the treatment guidelines according to the participant's socio-demographic variables.

By using statistical analysis, we examine the distribution of factors associated with the non-adherence to the treatment guidelines according to the participant's socio-demographic variables (sex, class of age, and residency). The results showed that 64.1% of the non-adherent study forms which associated with unavailability were for male. Moreover, about 56% of the study forms that associated with lack of efficacy were for patients aged between 36 and 55 years. Also, the lack of efficacy was the most factor that associated with the non-adherence according to patients who lived in the city. In addition, we notice that the patients who lived in the city were more likely to be non-adherent due to

unavailability, lack of efficacy and multiple doses (p-value=0.012, 0.033, and 0.004 respectively).

Table 8

The frequency and percentage of socio-demographic variables according to the factors that associated with the non-adherence to the treatment guidelines.

Factors/Socio-demographic variables (n)(%)		Unavailability	Lack of efficacy	Comorbidity	Multiple doses
Sex	Male	266 (64.1%)	209 (66.1%)	153 (61.7%)	101 (70.6%)
	Female	149 (35.9%)	107 (33.9%)	95 (38.3%)	42 (29.4%)
	p-value	0.886	0.309	0.424	0.069
Class of age	(10-17)	2 (0.5%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
	(18-35)	55 (13.3%)	56 (17.7%)	49 (19.7%)	15 (10.5%)
	(36-55)	182 (43.9%)	178 (56.3%)	115 (46.4%)	73 (51%)
	(56-65)	118 (28.4%)	65 (20.6%)	49 (19.8%)	38 (26.6%)
	(>65)	58 (13.9%)	17 (5.4%)	34 (13.7%)	17 (11.9%)
	p-value	0.000	0.000	0.259	0.199
Residency	City	193 (46.5%)	170 (53.8%)	127 (51.2%)	61 (42.6%)
	Village	112 (27.0%)	93 (29.4%)	61 (24.6%)	56 (39.2%)
	Camp	110 (26.5%)	53 (16.8%)	60 (24.2%)	26 (18.2%)
	p-value	0.012	0.033	0.381	0.004

3.8 Comorbidity in association with psychiatric disorders

The main five psychiatric disorders are maybe combined with other types of psychotic conditions (Table 8). For instance, most patients who are diagnosed with bipolar disorder-, may have depressive episodes in addition to the usual symptoms of the disorder itself. Moreover, schizophrenic patients may complain of different mood conditions and anxiety with insomnia as well as depressed patients.

Table 9

The main psychiatric disorders associated with comorbidity

Diagnosis/ Comorbidity (n)	Depressive episodes	Mood disorder	Anxiety with insomnia	Seizures	Depressive type
Schizophrenia	1	62	37	0	2
Bipolar disorder	57	0	6	0	2
Depression	0	0	42	0	0
Schizoaffective	1	10	8	0	9
Anxiety disorder	0	0	0	11	0

Similar to schizophrenia, the patients who are diagnosed with schizoaffective disorder may have depression symptoms and are classified as a depressive type of schizophrenia. Also, they may suffer from different mood conditions in addition to anxiety symptoms with insomnia. Whereas, regarding anxiety disorder, some anxious patients may have epilepsy episodes along with anxiety symptoms more than other psychotic conditions.

In conclusion, all these psychotic conditions (depressive episodes, mood disorder, anxiety with insomnia, and epilepsy) when combined with the main psychotic disorder, may affect physicians' adherence to prescribing appropriate treatment that follows the international treatment guidelines.

Chapter Four

Discussions, Limitations, and Conclusion

4.1 Discussions

This study was conducted to assess Palestinian psychiatrists' adherence to the international treatment guidelines for treating five major psychiatric disorders in Palestine (schizophrenia, depression, bipolar disorder, schizoaffective, and anxiety). The study was conducted in a retrospective design of (1070) psychiatric prescriptions that were issued by the main public outpatient psychiatric clinic in the north of the West Bank of Palestine. In addition, we explored the factors that contributed to the non-adherence to the treatment guidelines. In general, the results showed that the treatment of psychiatric disorders in Palestine does not comply with the international treatment guidelines and the most common factor which contributed to the non-adherence is the unavailability of the recommended medication.

According to diagnosis, the data showed that the most commonly diagnosed psychiatric disorder in the outpatient psychiatric clinic in Palestine was schizophrenia followed by depression, bipolar disorder, schizoaffective and the least common was anxiety. In contrast with our results, the global prevalence of psychiatric disorders is different. A systematic review conducted in China and India to examine the prevalence of the most common mental disorders showed that depression was the most prevalent disorder followed by anxiety disorders, while schizophrenia was the least common (126). However, another meta-analysis conducted to estimate the global prevalence of psychiatric disorders in 39 countries showed that anxiety disorders had the largest prevalence rates (38). This difference may be explained by the fact that our study was conducted among patients visiting an outpatient psychiatric clinic, while the systematic review and the meta-analysis were made on the general population.

Our data showed that the most frequently prescribed antipsychotic drugs for treating patients who were diagnosed with schizophrenia were typical agents.

These findings were incompatible with the international trend of using the atypical anti-psychotics as the first-line therapy in treating schizophrenia rather than typical agents, because of their tolerability, safety, and ability to monitor negative symptoms of schizophrenia (127).

In addition, the combination of anti-psychotics and anti-cholinergic drugs was observed among patients diagnosed with schizophrenia to monitor EPS associated with anti-psychotics use. Furthermore, because the pharmacotherapy of schizoaffective disorder is not well confirmed yet, the physicians in this study tended to treat the patients who were diagnosed with schizoaffective disorder in the same way as patients with schizophrenia (38).

The prescribed medications for the treatment of major depression in this study partially followed the updated international guidelines, which suggest using the newer anti-depressant agents, namely SSRIs, because they have higher efficacy and are better tolerated compared with other anti-depressants (96). Actually, in this study, SSRIs were the most frequently prescribed anti-depressants, followed by TCAs (50.2% and 45.3%, respectively). However, none of the patients was prescribed SNRIs, and this observation could be explained by the low cost of TCAs compared with SNRIs, mostly because the study was conducted in an outpatient public psychiatric clinic rather than a private center. On the other hand, a meta-analysis study was conducted to compare the adverse effects and the remission rate of the different anti-depressant agents, and revealed that SNRIs had the highest response rate followed by TCAs and SSRIs. Therefore, we believe that physician's prescriptions for treating major depressive disorder were relatively acceptable (128).

For bipolar disorder, similar to schizophrenia treatment, the most prescribed medications used in treating patients diagnosed with bipolar disorder were typical antipsychotic, atypical antipsychotic, and anti-convulsant agents (42.1%, 36.4%, and 25.1% respectively).

Also, as mentioned above in treating schizophrenia, nearly 25% of the patients with bipolar disorder were used anticholinergic agents to control EPS which associated with antipsychotic use. Although lithium is considered a toxic agent,

due to its narrow therapeutic index, it has the largest evidence in preventing long-term relapse, while anti-psychotic drugs are potent in treating acute mania, as well as anti-convulsant agents (one of the first-line antipsychotic drugs is olanzapine, as recommended by The National Institute for Health and Care Excellence (NICE)) (38, 128). In our study, the least prescribed agent in treating bipolar disorder was lithium (10.8%).

Regarding the patients who were diagnosed with anxiety disorders, the most prescribed medications in our study were SSRIs, followed by TCAs, and then, to a lesser extent, BZD (39.5%, 30.2%, and 27.9% respectively). Our results showed that the treatment of anxiety disorders is compatible with the international treatment guidelines, which prefer SSRIs over BZD due to their safety and efficacy (38). Relatively, the data showed a high rate of using anticonvulsant agents in treating patients diagnosed with anxiety disorders and this could be explained due to the combination of anxiety and epilepsy episodes, which was mentioned above as a comorbidity factor. In addition, we observed a small percentage of patients diagnosed with anxiety were treated with atypical antipsychotics, which is could be interpreted, according to a systematic review and meta-analysis study, due to their efficacy in treating patients with SSRI-resistant anxiety disorder (128).

After analyzing the data, the results concluded that physicians were non-adherent to international treatment guidelines in treating the major five psychiatric disorders (schizophrenia, depression, bipolar disorder, schizoaffective and anxiety disorders) in outpatient's clinic in Palestine. Out of the 1070 psychiatric prescriptions which were analyzed, 822 of them (76.8%) were classified as non-adherent prescriptions. The majority of them were for male patients, patients aged from 36 to 55 years and who are living in the city. However, after using multivariable statistics, the results showed that there is no significant difference ($p\text{-value}>0.05$) between gender, age, and residency with physicians' non-adherent. In contrast, the data showed that there is a significant difference in the five psychiatric diagnoses ($p\text{-value}<0.05$).

Therefore, from the results, physicians' prescriptions for patients who were diagnosed with schizophrenia are more likely to be non-adherent to treatment guidelines followed by depression, bipolar disorder, schizoaffective, and, to a lesser extent; anxiety disorders (Table 5). We notice that our results similar to the study conducted in an outpatient clinic in the North of West Bank which concluded that the pharmacotherapy of psychiatric disorders not in accordance to international guidelines.

Away from diagnosis and sociodemographic characteristics, we aimed to explore some factors associated with the non-adherence to treatment guidelines for the five major psychiatric disorders. Therefore, from different kinds of literature, we obtained several possible factors such as drugs' unavailability in the current city, drugs' lack of efficacy, patients who have psychotic disorders/episodes (which is mentioned as comorbidity), drugs that have multiple doses per day, drugs' adverse effects, physicians lack awareness about updated treatment guidelines, patients' preferences, multiple drug therapy, and cost. Of these factors, nearly 37% of psychiatric prescriptions were classified as non-adherent due to drugs' unavailability, particularly in patients who were diagnosed with schizophrenia, followed by depression, bipolar disorder, schizoaffective, and anxiety (Table 7). Also, 28% of the prescriptions were non-adherent because of the lack of drug efficacy, which makes the physician tend to prescribe other medications rather than those that comply with the international treatment guidelines (such as, prescribing SSRI agent with BZD in treating patients with anxiety). Moreover, the comorbidity factor represents 22% of the non-adherent psychiatric prescriptions, especially for patients diagnosed with schizophrenia, followed by bipolar disorder, depression, schizoaffective, and anxiety. Furthermore, the least factor associated with the non-adherence was drugs' multiple doses, which account for approximately 13% of the prescriptions. We notice that the other mentioned factors (drugs' side effects, cost, physicians' lack of awareness about updated guidelines, patient preference, and multiple drug therapy) didn't affect the physician's adherence to international treatment guidelines. Therefore, we reviewed the results with the physician and concluded that because our study was conducted

on outpatients in the psychiatric clinic of the Mental Health Center, the cost factor may already have been included in the drug's unavailability.

Also, multiple drug therapy may already have been taken into account when physicians prescribe the medication according to international treatment guidelines. In addition, one of the suggested factors was physicians' lack of awareness of updated guidelines. However, we believe that the answer was subjective.

4.2 Limitations

There are some strengths which relevant to this study. For instance, we examined the pharmacotherapy for the most common five psychiatric disorders instead of focusing on one disorder. On the other hand, this study had a few limitations. Firstly, all the data was collected from one outpatient clinic in Palestine rather than different cities because of logistic problems and limited time. Secondly, inpatient prescriptions were not performed and our study was limited to the outpatients' prescriptions. In addition, although physician's lack of awareness of updated guidelines may affect the non-adherence to treatment guidelines, we didn't found it within the factors associated with non-adherence.

4.3 Conclusion

In this study, we examine the pharmacotherapy for five major psychiatric disorders at the outpatient's clinic of the mental health center in Palestine. Unfortunately, the results were relatively incompatible with the latest international treatment guidelines. In addition, we noticed that the patients diagnosed with schizophrenia and drugs' unavailability in the selected clinic were the common factors associated with the non-adherence to treatment guidelines. Therefore, we recommend the Palestinian Ministry of Health to provide appropriate medications in order to improve the treatment of psychiatric disorders, especially schizophrenia. In addition, we recommend to follow one international treatment guidelines in all mental health centers in Palestine as well as to create our own treatment guidelines taking into consideration the genetic differences between population. Also, we recommend to use lithium to treat patients with bipolar disorder rather than atypical antipsychotic agents and

regularly monitor the toxicity. Finally, we recommend to provide continuous update and education for physicians in addition to conduct a multi-centric studies.

List of Abbreviations

Abbreviation	Meaning
EMR	Eastern Mediterranean Region
WHO	World Health Organization
PTSD	Post-traumatic Stress Disorder
DASS	Depression, Anxiety, and Stress Scale
BDI	Beck Depression Inventory
BAI	Beck Anxiety Inventory
GHQ	General Health Questionnaire
GAD	Generalized Anxiety Disorder
CNS	Central Nervous System
FGAs	First-generation Anti-psychotics
SSRI	Selective Serotonin Reuptake Inhibitors
SNRI	Serotonin Noradrenaline Reuptake Inhibitors
NRI	Noradrenergic Reuptake Inhibitors
NDRI	Noradrenaline Dopamine Reuptake Inhibitor
NASSA	Noradrenergic and Specific Serotonergic Antagonist
SARI	Serotonin Antagonist and Reuptake Inhibitor
TCAs	Tricyclic Antidepressants
MAOIs	Monoamine Oxidase Inhibitors
CBZ	Carbamazepine
BZD	Benzodiazepines
5-HT _{2A}	5-hydroxytryptamine 2A
EPS	Extrapyramidal Symptoms
MDD	Major Depressive Disorder
GABA-A	Gamma-aminobutyric Acid-A
FDA	Food and Drug Administration
SGAs	Second-generation Anti-psychotics

CYP450	Cytochrome P450
NSAIDs	Non-steroidal Anti-inflammatory Drugs
ACEIs	Angiotensin-converting Enzyme Inhibitors
ARBs	Angiotensin-receptor Blockers
OCD	Obsessive Compulsive Disorder
TRD	Treatment-resistant Depression
DBS	Deep Brain Stimulation
TRS	Treatment-resistant Schizophrenia
ECT	Electroconvulsive Therapy
CPGs	Clinical Practice Guidelines
ACC	American College of Cardiology
AHA	American Heart Association
LDL	Low-density Lipoprotein
UACR	Urine Albumin-to-creatinine Ratio
HbA1c	Hemoglobin A1c
NIH	National Institutes of Health
CRC	Colorectal Cancer
LTCFs	Long-term Care Facilities
DSM	Disease State Management
DRR	Drug Regimen Review
ADA	American Diabetes Association
GDM	Gestational Diabetes Mellitus
LRTI	Lower Respiratory Tract Infection
OCD	Obsessive Compulsive Disorder
SPSS	Statistical Package for the Social Sciences
IBM	International Business Machines
IRB	Institutional Review Board
NICE	National Institute for Health and Care Excellence

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Appendices

Appendix A

Data collection sheet

ID				
Sex	Male		Female	

Age	2-9		36-55	
	10-17		56-65	
	18-35		>65	

Residency	City		Village			
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Diagnosis	Schizophrenia		Bipolar	
	Depression		Anxiety disorders	
	Schizoaffective disorder		Others	

Time of diagnosis and onset of therapy	
---	--

Treatment history	Initial treatment	
	After 1 year	
	After 2 years	
	Actual prescription	

Appendix B

The suggested factors that were associated with the non-adherence to the treatment guidelines

Adherence	Yes			
	No	Side effects		
		Multiple doses		
		Comorbidity/drug-drug interactions		
		Liver/kidney failure		
		Cost		
		Unavailability		
		Lack of awareness about updated guidelines		
		Patient preference		
		Multiple drug therapy		
		Lack of efficacy		
		Others		

Appendix C

IRB approval letter

An-Najah National University
Faculty of medicine Sciences Health
Institutional Review Board



جامعة النجاح الوطنية
كلية الطب وعلوم الصحة
لجنة أخلاقيات البحث العلمي

Ref: Mas. March.2021/3

IRB Approval Letter

Study Title:

“Physicians adherence to international treatment guidelines for major psychiatric disorders: A descriptive study from North West Bank/Palestine.”

Submitted by:
Huda shebli

Supervisor:
Suhaib Hattab

Date Approved:
2nd March 2021

Your Study Title “Physicians adherence to international treatment guidelines for major psychiatric disorders: A descriptive study from North West Bank/Palestine.” viewed by An-Najah National University IRB committee and was approved on 2nd March 2021


Hasan Fitian, MD



IRB Committee Chairman
An-Najah National University

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جامعة النجاح الوطنية
كلية الدراسات العليا

مدى إلتزام الأطباء للمعايير العالمية لعلاج أبرز الأمراض النفسية:
دراسة وصفية في فلسطين

إعداد

هدى سعيد شبلي

إشراف

د. صهيب حطّاب

قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في علم الأدوية، من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين.

2022

مدى إلتزام الأطباء للمعايير العالمية لعلاج أبرز الأمراض النفسية: دراسة وصفية في

فلسطين

إعداد

هدى سعيد شبلي

إشراف

د. صهيب حطّاب

الملخص

المقدمة: لا تزال الأمراض النفسية تنتشر بشكل مستمر في جميع أنحاء العالم، مما يجعلها ذات أهمية على مستوى الصحة العالمية، لذلك هناك العديد من الدراسات التي قامت بتحديد طرق ومعايير العلاج المناسب لكل من هذه الأمراض.

أهداف الدراسة: تهدف هذه الدراسة إلى تقييم مدى إلتزام أطباء العلاج النفسي في فلسطين لمعايير العلاج المناسب لأبرز الأمراض النفسية. كما أنها تهدف إلى استكشاف العوامل المرتبطة بعدم الإلتزام لهذه المعايير.

منهج الدراسة: دراسة وصفية مرجعية أقيمت في عيادة الصحة النفسية في مدينة نابلس-فلسطين للمرضى المصابين بمرض الإنفصام، الإكتئاب، القلق، ثنائي القطب و الفصام العاطفي، في الفترة الواقعة بين شهر أيار الى شهر أيلول من عام 2021.

النتائج: لقد تم دراسة 1070 وصفة طبية، ولوحظ أن أغلبية المرضى من فئة الذكور وأعمارهم تتراوح ما بين 36 و55 سنة. وبعد تحليل جميع الوصفات الطبية، وجد أن أغلبيتها كانت لمرضى الإنفصام، يليها مرضى الإكتئاب، ثنائي القطب، الإنفصام العاطفي والقلق. ولوحظ أيضاً أن أكثر الأدوية المستخدمة هي مضادات الذهان التقليدية ثم مضادات الذهان غير التقليدية ومثبطات استرداد السيروتونين الانتقائية

وغيرها من أدوية العلاج النفسي. إضافة على ذلك، أظهرت هذه الدراسة أن أغلبية الوصفات الطبية غير تابعة لمعايير العلاج العالمية وأن معظم هذه الوصفات كانت للمرضى من فئة الذكور البالغين الذين تتراوح أعمارهم ما بين 36 و55 سنة. كما بيّنت النتائج أن أكثرية الوصفات الطبية غير التابعة للمعايير كانت للمرضى الذين يعانون من مرض الإنفصام، ويُعزى السبب الأكثر ارتباطاً بعدم الإلتزام لمعايير العلاج إلى عدم توافر الأدوية المناسبة في عيادة الصحة النفسية.

الخلاصة: أظهرت نتائج هذه الدراسة أن العلاج الدوائي لأبرز الأمراض النفسية في فلسطين لا يتوافق مع معايير العلاج المناسب المثبت عالمياً. كما أظهرت أن مرض الإنفصام وعدم توفر الأدوية في عيادة الصحة النفسية هي من أهم العوامل التي تؤثر على عدم إلتزام الأطباء في وصف العلاج المناسب.

الكلمات المفتاحية: الإلتزام، الأمراض النفسية، العوامل، المعايير، عيادة الصحة النفسية.