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ASSOCIATION OF COMMUNITY PHARMACISTS OF NIGERIA

DRUG

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Bulletin

A PUBLICATION OF THE DRUG INFORMATION CENTRE (ACPN)



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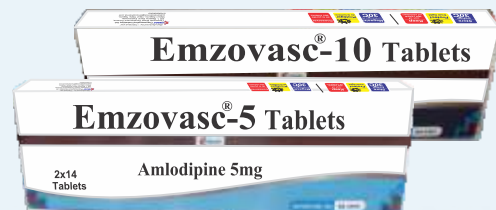
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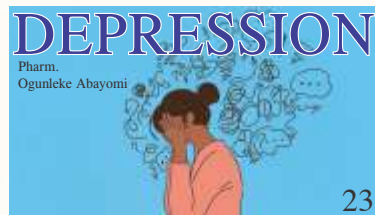
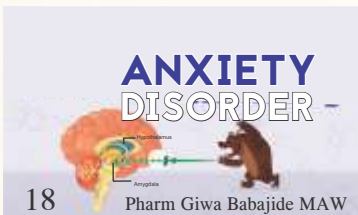
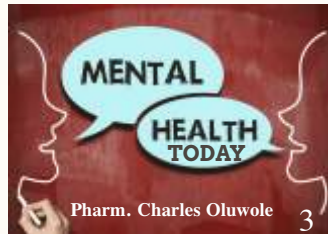


Contents

EDITOR'S NOTE 2



Continuing Education



COMMUNITY PRACTICE 29



**Mental Health Disorders and Medication Adherence:
 The Role of Community Pharmacists**

Pharm. Olanike Olatawura B.Pharm, MMP

33

**The Past and the Present
 Roles of Community Pharmacists
 in Mental Healthcare:
 Is There Room for More?**
Pharm Charles Akinsete, MAW.



37



**THE EFFECT OF CHRONIC AND
 TERMINAL ILLNESS ON MENTAL HEALTH:
 HOW CAN HEALTH PROFESSIONALS
 AND FAMILIES HELP?**
Pharm. Charles Oluwole



40

**Herbals Remedies in
 Mental Health Disorders**

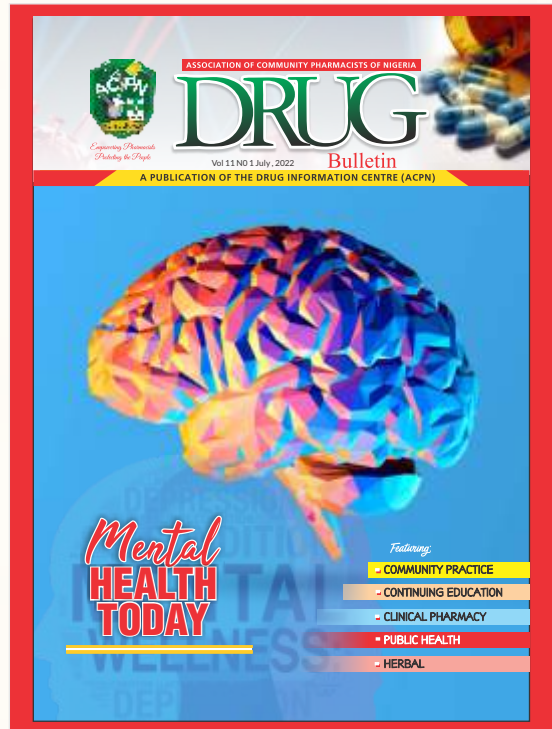
Dr. Faderemi Adekunle



49

**Substance Use Disorder, Withdrawal Symptoms and
 their Effects on Mental Health**

Pharm Abubakar Samira Umar FPCPharm, DCPharm, MAW



**NEWS FROM
 THE NATIONAL SECRETARIAT**

- We are transiting from our old website www.acpnigeria.org.ng to a new website www.acpnnigeria.org. The latter is the one we have adopted since last year because it allowed us to easily synchronize our registration portal with the website. All the features and resources in the old website can still be accessed before the final transition to the new one.
- The Emblem Form as well as the Application Form for the Distinguished Community Pharmacists Award are available on our website for download.
- The Emblem Form is available on our website for download.
- You can read this Publication and other Educative Journals on the DIC Section on our website: www.acpnnigeria.org or on the old website: www.acpnigeria.org.ng



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EDITOR'S NOTE

A few decades ago, mental illnesses are usually regarded as some form of spiritual attack. Trado-medical practitioners and spiritual healers are usually the first and the last points of care. The route between mental health and the environment, social lifestyle, jobs, and relationships is not well cultivated.

Today, the improved medical and psychological knowledge has enabled us to gain insight into the workings of the brain and how our actions, inactions, relationships, environment, etc can impact cognitive functions.

This edition will help health professionals to refresh as well as update their knowledge on mental health. The language and choice of words are carefully crafted so that the non-health professional readers can also benefit maximally without battling with many technical terms. Our team has painstakingly put together what will impact the readers and the practitioners in a pragmatic way.

In addition to the general knowledge on Mental Health, we direct our focus on depression and anxiety disorders which are the leading mental health disorder globally. We also pick on the link between substance use disorder (drug abuse) and mental health. While it is fully established that substance abuse can affect mental health significantly, especially on prolonged use, there is also a direct link between mental health and substance use disorder. Readers may find this intriguing to find out more.

Drug adherence is a pivotal issue in



patients with mental illness, we write on how Community Pharmacists can help. Also, as the gap between the mental health care-seekers and caregivers widens, we identify additional roles Community Pharmacists can play in mental health.

Under the herbals section, we seek to explore the recent studies on some antiquated medicinal plants which have been known and used to treat mental illness.

These and much more you will enjoy in this edition.

We appreciate God for another successful edition of the Drug Bulletin and we are indebted to our numerous readers who always found this publication to be worth their reading time.

Kindly direct any input, correction or suggestions to our mail at dicacpn2017@gmail.com

Thank you.

Pharm Giwa Babajide MAW

National Editor-in-Chief/

Drug Information Committee Chairman.



Pharm. Charles Oluwole



Continuing Education

Outline

- i. Why do we write on Mental Health?
 - ii. What is Mental Health?
 - iii. Mental Illness
 - iv. Classes of mental illness
 - v. Symptoms of Mental Illness
 - vi. Causes and Risk Factors for Mental Illness
 - vii. Diagnosis and Treatment of Mental Illness
 - viii. Treatment/Management of Mental Illness
 - ix. References:
- i. **Why do we write on Mental Health?**

On May 27, 2022, news circulated about a renowned accountant working with one of the leading telecommunication companies in Nigeria who just committed suicide in her residence in the highbrow area of Lagos. As usual, the voices of condemnation, finger-pointing, accusations, and counter-accusations soon buzzed on social media. The information from a verified source blamed the incident on chronic depression. What a horror to lose such a

resourceful individual to such an ignominious death! Yet, that is just one of the over 800, 000 suicide deaths that happen around the globe every year; an estimate of one death in every forty seconds. Whether by jumping into the river, self-hanging with rope, ingesting poisonous chemical substances, engaging in mass shootings, etc.; the burden and consequences of poor mental health keep piling on the world at an incalculable rate.

As the first point of contact with consumers of health, Community Pharmacists are most often the early witnesses of poor mental health; a few weeks in an average pharmacy in Nigeria will clear all doubts.

It may interest us that most of those seemingly irrational behaviors, disproportionate reactions and responses, as well as easily-irritable manners that are so rampant in our society today, are

actually the offshoot of undiagnosed poor mental health.

According to the World Health Organization (WHO), mental health conditions contribute to poor health outcomes, premature death, human rights violations, and global and national economic loss. Depression and anxiety disorders cost the global economy about US\$1 trillion per year, while deaths from poor mental health (suicide) is the leading cause of death among young people (15-28years). Mental, neurological and substance use disorders make up 10% of the global burden of disease and 30% of non-fatal



disease burden. There can be no health or sustainable development without mental health.

In this edition, you will update your knowledge on various dimensions of mental health as it relates to your practice including the practical ways to improve your patient/client's mental health without depriving yourself of the same.

This knowledge has become essential with the current evolving society, with its attendant hydra-headed challenges which may not yield to pharmacological solutions alone.

II. What is Mental Health?

Mental health is the bedrock for the well-being and effective functioning of individuals. It is the ability to think, learn, and understand one's emotions and the reactions of others. Mental health is a state of balance, both within and with the environment. Physical,

psychological, social, cultural, spiritual and other interrelated factors participate in producing this balance.

Mental health refers to cognitive, behavioral, and emotional well-being. It is all about how people think, feel, and behave. "Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community."

There are inseparable links between mental and physical health. Mental health can affect daily living, relationships, and physical health. For example, mental illness such as depression increases the risk of many types of physical health problems, particularly chronic diseases such as diabetes, heart disease, and stroke. Similarly, the presence of chronic diseases can increase the risk of

mental illness.

III. Mental Illness

Mental illness, also known as mental health disorder, or poor mental health, refers to a wide range of mental health conditions that affect mood, thinking, and behavior. It involves changes in emotion, thinking or behavior (or a combination of these). Mental illnesses are associated with distress and/or problems functioning in social, work or family activities.

Mental illnesses include many different conditions that vary in degree of severity, ranging from mild to moderate, to severe. According to National Institute for Mental Health, (NIMH), mental illness can be categorized into two: Any Mental Illness (AMI) and Serious Mental Illness (SMI). AMI encompasses all recognized mental illnesses. SMI is a smaller and more severe subset of AMI.

- A. Any Mental Illness (AMI) is defined as a mental, behavioral, or emotional disorder. AMI can vary in impact, ranging from no impairment, to mild, moderate, and even severe impairment.
- B. Serious mental illness (SMI) is defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major



Stress



Anxiety



Schizophrenia



Depression



Personality Disorder



Sleep Disorder

life activities. The burden of mental illnesses is particularly concentrated among those who experience disability due to SMI.



IV. Classes of mental illness
 The main classes of mental illness are:

A. Neurodevelopmental disorders.

This class covers a wide range of problems that usually begin in infancy or childhood, often before the child begins grade school. Examples include autism, spectrum disorder, attention-deficit/hyperactivity disorder (ADHD) and learning disorders.

B. Schizophrenia spectrum and other psychotic disorders.

Psychotic disorders cause detachment from reality, such as delusions, hallucinations, and disorganized thinking and speech. The most notable example is schizophrenia, although other classes of disorders can be associated with detachment from reality at times. Signs of schizophrenia typically develop between the ages of 16 and 30, according to the NIMH. The individual will have thoughts that appear fragmented, and they may also find it hard to process information.

Schizophrenia has negative and positive symptoms. Positive symptoms include

delusions, thought disorders, and hallucinations. Negative symptoms include withdrawal, lack of motivation, and a flat or inappropriate mood.

C. Bipolar and related disorders:

This class includes disorders with alternating episodes of mania, periods of excessive activity, energy and excitement and depression. A person with bipolar disorder experiences unusual changes in their mood, energy levels, levels of activity, and ability to continue with daily life. Periods of high mood are known as manic phases, while depressive phases bring on low mood.

D. Depressive disorders:

These include disorders that affect how you feel emotionally, such as the level of sadness and happiness, and they can disrupt your ability to function. Examples include

I. Major depression and Seasonal affective

disorder (SAD).

An individual with major depression experiences a constant low mood and loses interest in activities and events that they previously enjoyed. They can feel prolonged periods of sadness or extreme sadness. Examples include major depressive

premenstrual dysphoric disorder and postpartum depression. SAD is often associated with reduced daylight triggers during the fall, winter, and early spring months triggering this type of major depression. It is most common in countries far from the equator.

ii. Anxiety disorders:

Anxiety is an emotion characterized by the anticipation of future danger or misfortune, along with excessive worrying. It can include behavior aimed at avoiding situations that cause anxiety. Examples of anxiety disorders include:

a. Generalized anxiety disorder (GAD):

The American Psychiatric Association defines GAD as a disproportionate worry that disrupts everyday living. It may also manifest in physical symptoms including restlessness, fatigue, tense

muscles and interrupted sleep. A bout of anxiety symptoms does not necessarily need a specific trigger in people with GAD. People with GAD may experience excessive anxiety on encountering everyday situations that do not present a direct danger, such as chores or keeping appointments. A person with GAD may sometimes feel anxiety with no trigger at all.

b. Panic disorders:

People with a panic disorder, experience regular panic attacks, which involve sudden, overwhelming terror or a sense of imminent disaster and death.

c. Phobias:

There are different types of phobias.

- Simple phobia might involve a disproportionate fear of specific objects,

scenarios, or animals. A fear of spiders is a common example.

- Social phobia is sometimes known as social anxiety, this is a fear of being subject to the judgment of others. People with social phobia often restrict their exposure to social environments.
- Agoraphobia refers to a fear of situations in which getting away may be difficult, such as being in an elevator or moving train. Many people misunderstand this phobia as a fear of being outside.

E. Obsessive-compulsive and related disorders.

These disorders involve preoccupations or obsessions and repetitive thoughts and actions. Examples include obsessive-compulsive disorder, hoarding disorder and hair-pulling disorder (trichotillomania). In other

words, they experience constant, stressful thoughts and a powerful urge to perform repetitive acts, such as hand washing.

F. Trauma- and stressor-related disorders.

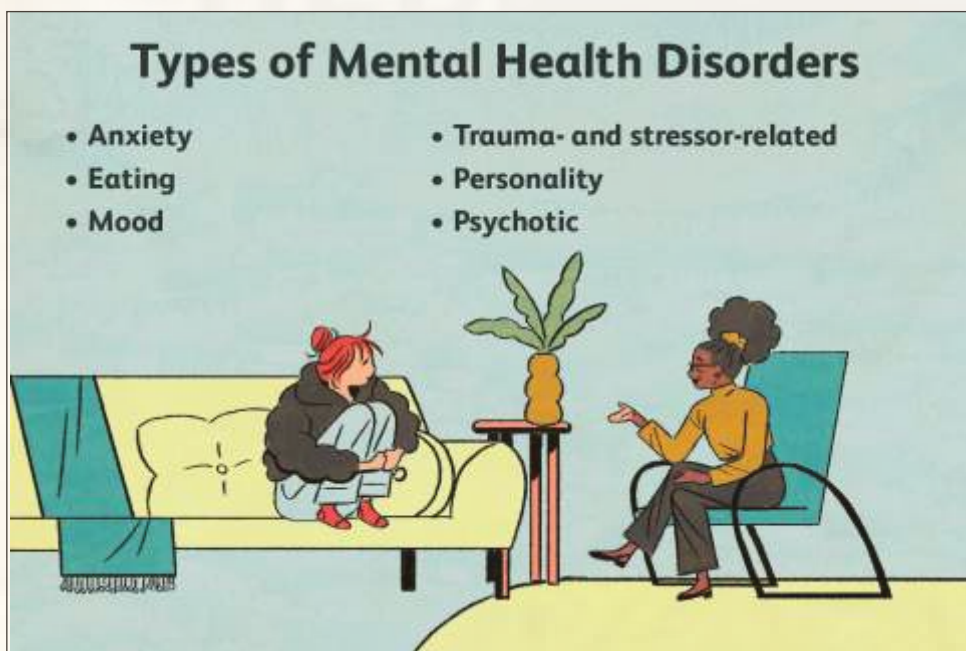
These are adjustment disorders in which a person has trouble coping during or after a stressful life event. Examples include post-traumatic stress disorder (PTSD) and acute stress disorder. PTSD can occur after a person experiences or witnesses a deeply stressful or traumatic event such as a robbery attack, abduction, or war. During this type of event, the person thinks that their life or other people's lives are in danger. They may feel afraid or that they have no control over what is happening.

G. Dissociative disorders:

These are disorders in which the sense of self is disrupted, such as dissociative identity disorder and dissociative amnesia.

H. Somatic symptoms and related disorders:

A person with one of these disorders may have physical symptoms that cause major emotional distress and problems functioning. There may or may not be another diagnosed medical condition associated with these symptoms,



activities

- Significant tiredness, low energy or problems sleeping
 - Detachment from reality (delusions), paranoia or hallucinations
 - Inability to cope with daily problems or stress
 - Trouble understanding and relating to situations and to people
 - Problems with alcohol or drug use
 - Major changes in eating habits
 - Sex drive changes
 - Excessive anger, hostility or violence
 - Suicidal thinking
- Sometimes symptoms of a mental health disorder appear as physical problems, such as stomach pain, back pain, headaches, or other unexplained aches and pains.

VI. Causes and Risk Factors for Mental Illness

Just as there are many types of mental illness, a number of factors can trigger or contribute to the risk of mental illness. A large proportion of people with a mental health disorder have more than one condition at a time.

A 2015 Study of 903 families in Iran identified several socioeconomic causes of mental health conditions, including poverty and level of employment. The researchers categorize these factors basically into two – Modifiable factors, which can change over time, and the non-modifiable factors,

which are permanent.

A. Modifiable factors for mental health disorders include:

a. Socio-economic conditions:

Continuous social and economic pressure such as experiencing financial hardship or belonging to a marginalized or persecuted ethnic group can increase the risk of mental health disorders.

b. Occupation:

When the demands placed on a person exceed their resources and coping abilities, their mental health could be impacted. For example, if someone is working long hours, or caring for a relative, they may experience poor mental health. People with a “weak economic status” also scored highest for mental health conditions in this study.

c. A person’s level of social involvement

d. Education

e. Housing quality

B. Non-modifiable factors include:

a. Gender

b. Age

c. Ethnicity

The study lists gender as both a modifiable and non-modifiable factor. The researchers found that being female increased the risk of low mental health status by 3.96 times.

C. Biological factors or chemical imbalances in the brain:

As suggested by National Institute for Mental Health (NIMH), genetic and family history can increase the likelihood of mental health conditions. Certain genes and gene variants put a person at higher risk. However, many other factors contribute to the development of these disorders. Having a gene with links to a mental health disorder, such as depression or schizophrenia, does not guarantee that a condition will develop. Likewise, people without related genes or a family history of mental illness can still have mental health issues.

D. Chronic Medical Conditions:

Mental health conditions such as stress, depression, and anxiety may develop due to underlying, life-changing physical health problems, such as cancer, diabetes, and chronic pain.

E. Other Risk Factors for Mental Illness include:

a. Early adverse life experiences, such as trauma or a history of abuse (for example, child abuse, sexual assault, witnessing violence such as war, etc.)

b. Protracted isolation



VII. Diagnosis and Treatment of Mental Illness

Diagnosis of Mental illness may involve:

a. *Physical examination:*

This is to rule out any physical problems that could be responsible for the symptoms.

b. *Laboratory analysis:*

These may include a thyroid function assay or a screening for alcohol and drugs.

c. *Psychological evaluation:*

This may involve subtle questioning, assessment of symptoms, thoughts, feelings, and behavioral patterns.

The defining symptoms for each mental illness are detailed in the WHO International Statistical Classification of Diseases and Related Health Problems (ICD) or Diagnostic and Statistical Manual of Mental Disorders Volume 5 (DSM-5), published by the American Psychiatric Association.

VIII. Treatment/Management of Mental Illness

Treatment of mental health is far from a one-size-fits-all approach. According to National Alliance on Mental

Health (NAMI), *“Innovations in the range of evidence-based medications, therapy and psychosocial services such as psychiatric rehabilitation, housing, employment, and peer supports have made wellness and recovery a reality for people living with mental health conditions.”*

Medication, counseling (therapy), social support, and education have been identified as the mainstay of treatment/management of mental illness.

Therapy, for example, can take many forms, from learning relaxation skills to intensively reworking your thinking patterns. Social support, acceptance, and encouragement from friends, family, and others can also make a difference.

Education about how to manage a mental health condition along with other medical conditions can provide the skills and supports to enrich the unique journey toward overall recovery and wellness.

Thus, the treatment/management of mental illness may require a concerted effort of various experts including physicians (general practitioners and psychiatrists), pharmacists, nurses, psychotherapists such as a psychologist or licensed counselors, social workers, and family members.

A. Psychosocial Treatment: Examples of psychosocial treatment include:

a. *Psychotherapy, or talking therapies*

This type of treatment takes a psychological approach to treating mental illness. Examples include cognitive behavioral therapy, exposure therapy, and dialectical behavior therapy. Psychiatrists, psychologists, psychotherapists, and some trained primary care physicians or pharmacists can carry out this type of treatment. It can help people understand the root of their mental illness and start to work on more healthful thought patterns that support everyday living and reduce the risk of isolation and self-harm.

b. *Psychosocial rehabilitation*

Psychosocial rehabilitation helps people develop the social, emotional, and intellectual skills they need in order to live happily with the smallest amount of professional assistance they can manage.

Psychosocial rehabilitation uses two strategies for intervention:

i. Learning coping skills so that patients are more successful in handling a stressful environment and developing resources that reduce future stressors.

ii. Treatments and resources which vary from case to case but can include medication management, psychological support, family counseling, vocational and independent living, training, housing, job coaching, educational aide and social support.

c. Psychoeducation

Psychoeducation teaches people about their illness and how they'll receive treatment.

Psychoeducation also includes education for family and friends where they learn things like coping strategies, problem-solving skills and how to recognize the signs of relapse. Family psychoeducation can often help ease tensions at home, which can help the person experiencing the mental illness to recover.

d. Self-Help and Support Groups

Self-help and support groups can help address feelings of isolation and help people gain insight into their mental health conditions. Members of support groups may share frustrations, successes, referrals for specialists, where to find the best community resources, and tips on what works best when trying to recover. They also form friendships with other members of the group and help each other on the road

to recovery. As with psychoeducation, families, and friends may also benefit from support groups of their own.

B. Substance Abuse Treatment Centers

Some people with mental health conditions also have substance abuse concerns. The most widely used form of treatment is integrated intervention. With this treatment, a person receives care for both a specific mental illness and substance abuse. Types of substance abuse centers include:

a. Rehabilitation centers: According to Rehabs Africa (www.rehabs.africa), there are 16 standard Rehabilitation Centers in Nigeria with about ninety percent of them located in the south (you can check their location and other details on the website). With the rising pace of substance abuse and economic downturn which seems to crystallize mental illness, the religious organizations and private investors are turning to succor through the establishment of more Rehabilitation centers across Nigeria.

b. Detoxification facilities: Withdrawal from alcohol can be life-threatening and requires

medical supervision. Opiate withdrawal is less risky, but detox can be important to organize community-based efforts to provide sobriety supports.

C. Pharmacological Treatment

Current medications do not cure mental disorders. They are however helpful in mitigating symptoms and help a person resume social interaction and a normal routine.

Some of these medications work by boosting the body's absorption of "feel-good" chemicals, such as serotonin, norepinephrine, and dopamine from the brain. Other drugs either boost the overall levels of these chemicals or prevent their degradation or destruction.

Some of the most commonly used classes of prescription psychiatric medications include:

a. Antidepressants:

They are effective for the treatment of depression, anxiety, phobias, and obsessive-compulsive disorders. Antidepressants work by influencing the production and reuptake of neurotransmitters that relate to emotion, including serotonin, norepinephrine, and dopamine. Although exactly why they work is not yet known, as the amount of the neurotransmitters in the CNS is increased through the action of the drugs, the

person often experiences less depression.

The original antidepressants were tricyclic antidepressants, with the brand names Imipramine and Amitriptyline, and the monoamine oxidase inhibitors (MAOIs). These medications work by increasing the amount of serotonin, norepinephrine, and dopamine at the synapses, but they also have severe side effects including potential increases in blood pressure and the need to follow particular diets.

The antidepressants most prescribed today are the selective serotonin reuptake inhibitors (SSRIs), including Prozac, Paxil, and Zoloft, which are designed to selectively block the reuptake of serotonin at the synapse, thereby leaving more serotonin available in the CNS. SSRIs are safer and have fewer side effects than tricyclics or MAOIs (Fraser, 2000; Hollon, Thase, & Markowitz, 2002). SSRIs are effective, but patients taking them often suffer a variety of sometimes unpleasant side effects, including dry mouth, constipation, blurred vision, headache, agitation, drowsiness, as well as a reduction in sexual enjoyment.

b. Anti-anxieties:

Also known as anxiolytics, work by increasing the action of the neurotransmitter

GABA. The increased level of GABA helps inhibit the action of the sympathetic division of the autonomic nervous system, creating a calming experience. The most common class of antianxiety medications is the tranquilizers, known as benzodiazepines. This include diazepam, nitrazepam, bromazepam, etc. The benzodiazepines act within a few minutes to treat mild anxiety disorders but also have major side effects. They are addictive, frequently leading to tolerance, and they can cause drowsiness, dizziness, and unpleasant withdrawal symptoms including relapses into increased anxiety (Otto et al., 1993). Furthermore, because the effects of the benzodiazepines are very similar to those of alcohol, they are very dangerous when combined with it.

c. Mood-stabilizers:

Mood stabilizers are most commonly used to treat bipolar disorders, which involve alternating episodes of mania and depression. Sometimes mood stabilizers are used with antidepressants to treat depression. Examples include lithium.

d. Antipsychotics:

Antipsychotics reduce the positive symptoms of schizophrenia by reducing the transmission of dopamine at the synapses in the limbic system, and they improve

negative symptoms by influencing levels of serotonin (Marangell, Silver, Goff, & Yudofsky, 2003). Despite their effectiveness, antipsychotics have some negative side effects, including restlessness, muscle spasms, dizziness, and blurred vision. In addition, their long-term use can cause permanent neurological damage, a condition called tardive dyskinesia that causes uncontrollable muscle movements, usually in the mouth area (National Institute of Mental Health, 2008). Newer antipsychotics treat more symptoms with fewer side effects than older medications do (Casey, 1996).

The discovery of chlorpromazine and its use in clinics has been described as the single greatest advancement in psychiatric care, because it has dramatically improved the prognosis of patients in psychiatric hospitals worldwide. Other recent drugs include Risperidone, Clozapine and Olanzapine.

e. Psychostimulants Attention-deficit/hyperactivity disorder (ADHD) is frequently treated with biomedical therapy, usually along with cognitive-behavioral therapy (CBT). The most commonly prescribed psychostimulants for ADHD include Methylphenidate (Ritalin), Amphetamine salts

(Adderall), and Dextroamphetamine (Dexedrine). Short-acting forms of the drugs are taken as pills and last between four and 12 hours, but some of the drugs are also available in long-acting forms (skin patches) that can be worn on the hip and last up to 12 hours. The patch is placed on the child early in the morning and worn all day.

Stimulants improve the major symptoms of ADHD, including inattention, impulsivity, and hyperactivity, often dramatically, in about 75% of the children who take them (Greenhill, Halperin, & Abikof, 1999). But the effects of the drugs wear off quickly. Additionally, the best drug and best dosage varies from child to child, so it may take some time to find the correct combination.

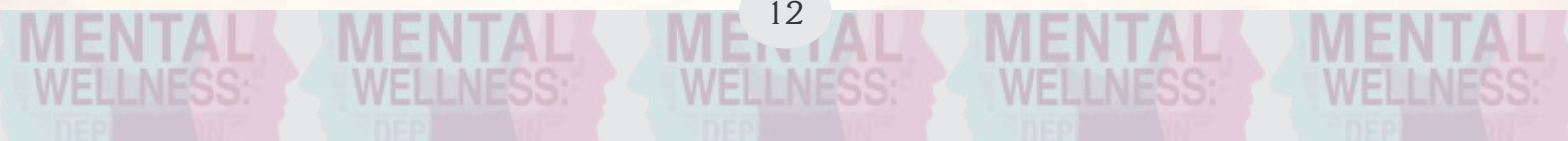
The most common side effects of psychostimulants in children include decreased appetite, weight loss, sleeping problems, and irritability as the effect of the medication tapers off. Stimulant medications may also be associated with a slightly reduced growth rate in children, although in most cases growth isn't permanently affected (Spencer, Biederman, Harding, & O'Donnell, 1996).

Table 1.1: Anti-depressants

Adult Antidepressants				
Generic	Brand	Class	Indications	Dosage
fluoxetine	Prozac	SSRI	Depression, OCD	20-80mg
sertraline	Zoloft	SSRI	Depression, Panic, OCD	50-200mg
paroxetine	Paxil CR	SSRI	Depression, Panic	20-50mg
citalopram/escitalpram	Celexa/Lexapro	SSRI	Depression, Anxiety	20-40mg 10-20mg
venlafaxine/desvenlafaxine	Effexor XR/Pristiq	SNRI	Depression, Panic	75-350mg 50mg
trazodone	Trazodone Hydrochloride	SARI	Depression, Panic	100-500mg
fluvoxamine	Luvox (XR)	SSRI	Panic, OCD	50-300mg
bupropion	Wellbutrin SR, XL/Zyban/Forfivo XL	NDRI	Depression, Smoking Cessation	150-400mg
mirtazapine	Remeron	NaSSA	Depression, Panic	15-45mg
duloxetine	Cymbalta	SNRI	Depression, Pain, GAD	30-120mg
vilazodone	Viibryd	SSRI/SA	Depression	10-40mg
levomilnacipran	Fetzima	SNRI	Depression	40-120mg
vortioxetine	Trintellix	SSR/SA	Depression	5-20mg

Table 1.2: Anti-anxieties (anxiolytics)

Anxiolytic Medications					
Generic/Brand	FDA Indications	Onset of Action	Half-Life	Duration of Action	Dose Range
Alprazolam/Xanax	GAD, Panic	30min IR,ODT 1-2hrs(XR)	11-16 hours	3-4hrs, 10hr (XR)	0.25-2mg TID (IR), 0.5mg-3mg (XR)
Buspirone/Buspar	GAD	1-2 weeks	2-3 hours	24hrs	15-60mg, divided TID
Clonazepam/Klonopin	Panic	1hr	20-80hrs	4-8hrs	0.5-2mg TID
Diazepam/Valium	GAD, ETOH W/D	30min	>100hrs	4-6 hours	2mg BID-10mg QID
Lorazepam/Ativan	GAD	30-60min	10-20hrs	4-6hrs	10-40mg PRN, LA 60-120mg QHS
Propranolol	Performance/Test Anxiety, GAD, Nightmares(off-label)	60min	3-6hrs	4-6hrs	10-40mg PRN, LA 20-120mg QHS
Prazosin	PTSD, Nightmares (off-label)	1-2hrs	2-3hrs	4-6hrs	1-25mg/d or divided BID
Hydroxyzine, Diphenhydramine	Insomnia, Pruritus, Sedation, Nausea	1-2hrs	20-25hrs	6-8hrs	25-50mg PRN TID



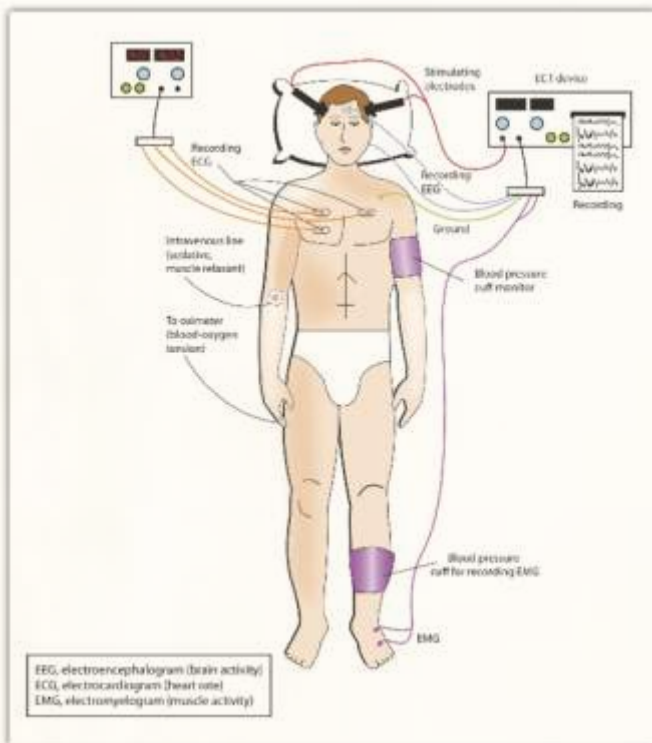
D. Brain Stimulation Therapy

a. *Electroconvulsive Therapy (ECT)*

ECT is a non-invasive medical treatment that is

its safety.

Treatment with ECT occurs in a series, usually a couple of times a week. People are asleep during the procedure and wake up about 5-10 minutes after it has finished. They are able to resume normal activity in about an hour. Some people receive occasional "maintenance ECT" treatments after they complete their initial series. Between 70 and 90% of individuals who receive ECT treatment report an improvement in their depression.



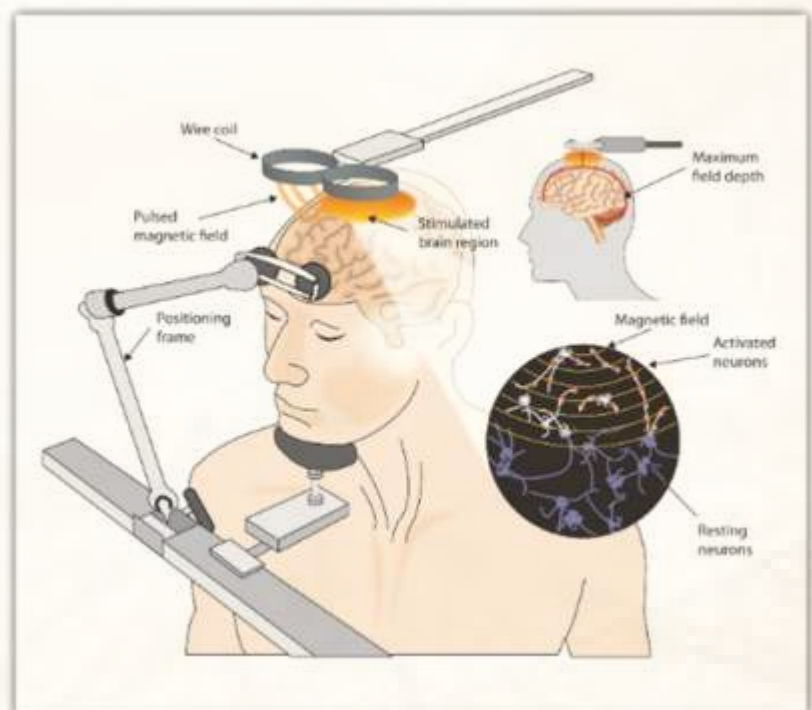
Side effects of ECT are usually mild and may include headaches, muscle soreness, or nausea, short-term memory loss (may occur during treatment and tends to be brief), longer-term memory loss (rarely permanent).

b. *Transcranial Magnetic Stimulation (TMS)*

TMS is a non-invasive treatment that uses magnetic fields to stimulate nerve cells in the brain. TMS is safe and effective, and is used to treat a range of mental and physical health conditions, including depression, obsessive compulsive disorder, PTSD, pain and substance use disorders, and others. This can be particularly important for individuals who have not benefitted from other treatments. For

most often used with individuals who have a serious mental illness, such as major depression or bipolar disorder. It's performed under anesthesia and involves using small electric currents to trigger a brief, controlled seizure in the brain. ECT appears to create changes in brain chemistry that can quickly improve certain mental health symptoms.

ECT has been proven to be a safe and effective treatment option although its use has not gained popular acceptance due to fear about



example, 30-64% of patients report an improvement in symptoms of depression.

During TMS, an electromagnetic coil is placed on a person's scalp near their forehead. Short magnetic pulses are painlessly directed into an area of the brain that controls moods. TMS treatments usually last between 40-60 minutes. TMS does not require the use of anesthesia and person remains awake during treatment. Like ECT, several sessions occur over a period of weeks. Rapidly administered pulses are called repetitive TMS (rTMS), and can provide longer lasting changes in brain activity.

There are few reported side effects of TMS, which are usually mild and diminish over the course of treatment. The most commonly reported side effect is a headache. Less commonly, people report scalp pain or facial twitching. The most serious risk of TMS is seizures, however current evidence suggests the risk of seizures is very rare (about 0.03%), with no evidence of permanent damage.

c. *Deep Brain Stimulation (DBS)*

Deep brain stimulation (DBS) is used to treat symptoms of movement disorders, such as tremors associated with Parkinson's

disease, and conditions like dystonia and treatment-resistant epilepsy. DBS is also used to treat severe obsessive-compulsive disorder (OCD) that hasn't responded to traditional treatment. Although DBS is used less frequently for OCD, studies indicate that it can be effective for debilitating symptoms.

More recently, DBS is being studied as a potential treatment for Tourette's syndrome, as well as for psychiatric conditions such as treatment-resistant depression associated with major depression and bipolar disorder. More information is needed on its effectiveness for these conditions, though studies involving severe and highly treatment-resistant depression have been encouraging. A promising area of research focuses on the use of DBS to target specific symptoms and brain circuits to develop unique, patient-tailored treatments. This approach has in part led to improvements in effectiveness for treating other conditions, including OCD.

DBS involves one or more tiny wires, or electrodes, that are surgically placed in the brain. These electrodes are connected to a very small pulse generator that is placed in the chest. There are possible side effects from surgery, or from the

stimulation itself. Surgical side effects may include infection, headache, confusion, or hardware complications. Side effects related to stimulation may include numbness or tingling, tightness in facial or arm muscles, speech problems, unwanted mood changes, or lightheadedness. Once the device is ready to be used for stimulation, treatment providers work with individuals to establish device settings, and make further adjustments. This process can take weeks or up to a few months, and is designed to help find the best stimulation level for symptom relief, as well as for reducing any side effects that are experienced.

d. *Vagus Nerve Stimulation (VNS)*

The vagus nerve carries messages between the brain and other areas of the body, controlling important functions such as heart rate, digestion, immune response, and moods. Treatment with VNS involves the use of a pulse generator, about the size of a stopwatch, that's placed in the upper left side of the chest to stimulate the vagus nerve.

VNS alters nerve activity in the body by sending mild electrical pulses through the vagus nerve to the brainstem. This pulse is then sent throughout the brain to change the way brain cells function, much like a

pacemaker. VNS has been used for decades to treat seizure disorders, as well as for treatment-resistant depression.

Stimulation usually occurs without the person feeling it, but it can sometimes cause tingling in the skin, mild cough, voice changes, or hoarseness when stimulation is active. Side effects that are troubling can be addressed with a change to stimulation settings.

More studies are needed on the effectiveness of VNS for treatment-resistant depression, given that other forms of stimulation such as TMS and ECT have provided more supporting research on their effectiveness. However, current VNS study results appear promising, with estimates ranging from a 50-70% response rate.

A non-invasive version of VNS is also being investigated, known as transcutaneous auricular VNS, or taVNS. One such device has already been approved by the FDA for treating migraine and cluster headaches. Another version of taVNS has received a Breakthrough Device Designation by the FDA for the treatment of PTSD.

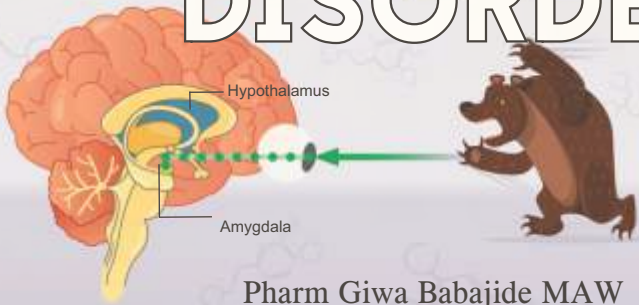
In conclusion, as the world braces for the realization of universal health coverage (UHC), mental health should

top part of integrative care. There is also a need for improved research into mental health, both in terms of diagnosis and treatment. The spate of tolerance, dependence, addiction, and even failure of the currently available medicines, calls for more advanced research on mental health.

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ANXIETY DISORDER



Pharm Giwa Babajide MAW



Outline

- I. Definition
- ii. Causes
- iii. Types
- iv. Symptoms
- v. Effect on the body
- vi. Management
- vii. References

I. Definition

Anxiety disorders are a type of mental health condition characterized by feelings of nervousness, panic, and fear as well as sweating and rapid heartbeat. These symptoms are severe enough to result in significant distress or significant impairment in functioning.

According to the World Health Organization, 1 in 13 people globally suffer from anxiety. The report shows that anxiety disorders are the most common mental disorders worldwide with specific phobia, major depressive disorder, and social phobia being the most common anxiety disorders. The advent of Covid-19 triggers a 25% increase in the prevalence of anxiety worldwide in 2022.

Concerns about potential increases in Anxiety disorders and other mental health conditions had already

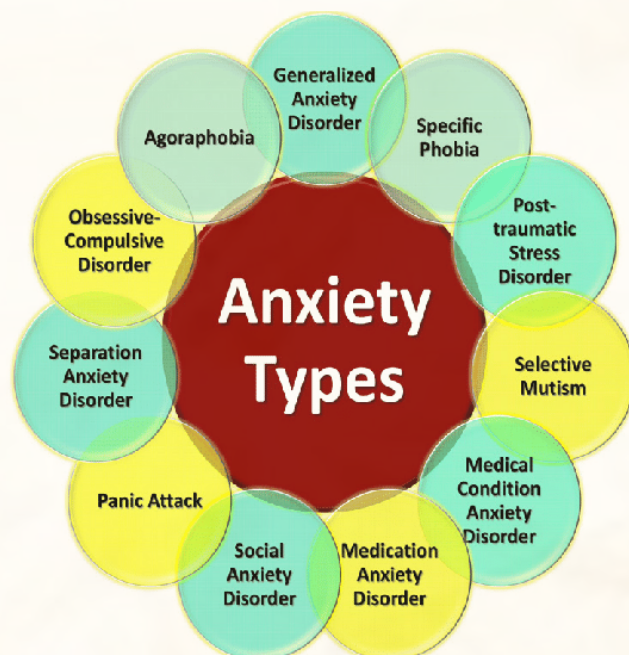
prompted 90% of countries to include mental health and psychosocial support in their Covid-19 response plan other factors such as political instability, wars, and meeting up with daily occupational and personal commitments have also contributed to the advent of anxiety disorder and the worst hit are the young people and women. This has resulted in reduced productivity and more suicide cases being witnessed worldwide.

II. TYPES OF ANXIETY DISORDER

Anxiety disorders comes in different forms but the

symptoms are similar. Major forms of anxiety disorders include.

- **Generalized Anxiety Disorder (GAD)**
GAD involves constant worrying over everyday things. The anxiety might have no clear cause or trigger. The patient feels that the worry continues from one thing to the next. Physical symptom of GAD include restlessness, difficulty concentrating and sleeping problems.
- **Panic Disorder**
This is characterized by intense, sudden panic attacks. These attacks often feature stronger, more intense feelings



than other types of anxiety disorders. The feeling of terror may start suddenly and unexpectedly or may come from a trigger, like facing a dreaded situation. Panic attacks can resemble heart attacker major symptom of *Panic disorder* are:

- I. Sweating
- ii. Heart Palpitation
- iii. Chest Pain
- iv. Feeling of Choking

- **Phobia**

Phobias are an intense fear of certain situations or objects some of these fears may make sense such as fear of snakes, like with other anxiety disorders a lot of time is spent avoiding situation that may trigger phobia. Some specific phobias include fear of:

- i. Animals e.g. Spiders, Dogs or Snakes
- ii. Blood
- iii. Flying
- iv. Heights
- v. Injections

- **Social Anxiety Disorder**

This is also called social phobia and it's characterized by overwhelming worry and self-consciousness with daily social situations. People with social phobia may worry about others judging them and are also anxious about being embarrassed or ridiculed. People with a social anxiety disorder may avoid the social situations entirely.

- **Separation Anxiety Disorder**

This condition mostly happens to children or teens who may worry about being away from their parents. Children with separation anxiety disorder

may fear that their parents will be hurt in some way or not come back as promised. Older children and adults who experience stressful events may also have separation anxiety disorders.

- **Agoraphobia**

Agoraphobia is the fear of space where it is difficult to escape or receive help if something goes wrong. People with this type of phobia tend to avoid specific places or situations e.g. crowds or public transport.

- **Obsessive – Compulsive Disorder**

This causes distressing, intrusive thoughts that a person may manage by carrying out repetitive behaviors that gives temporary relief e.g. Compulsive hand washing in fear of contamination.

- **Selective Mutism**

Is a consistent failure of children to speak in certain situations such as school, even when they can speak in other situations such as at home with close family members. This can interfere with school, work and social functioning.

III. CAUSES OF ANXIETY

The causes of Anxiety are not fully understood life experiences such as traumatic events appear to trigger anxiety disorders in people who are already prone to anxiety other factors could be.

1. **Medical Causes**

Underlying health issues could result in anxiety in some people. While anxiety signs and symptoms are the first that can be linked to anxiety include.

- i. Heart Disease

POSSIBLE ROOT CAUSES OF ANXIETY

@corylrodriguez

@ellenworamd



Blood sugar roller coaster



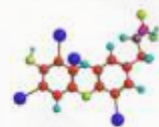
Caffeine sensitivity



Sleep deprivation



Constant stressful situations



Hormonal imbalance and thyroid problems



Gut dysfunction



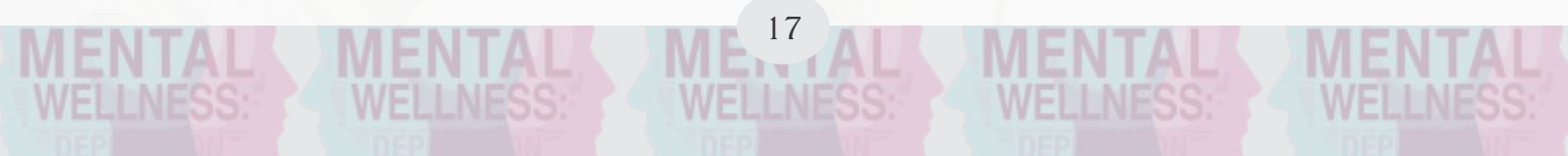
Chronic inflammation



Food sensitivities



Micronutrient deficiencies



- ii. Diabetes
- iii. Hyperthyroidism
- iv. Respiratory Disorder
- v. Drug Misuse
- vi. Alcohol Withdrawal

2. Environmental Causes

A person's life experience, upbringing, and home environment have a significant impact on whether, someone develops anxiety or not.

Studies have suggested that some parenting styles increase the risk of anxiety disorder.

Experiencing a trauma might trigger anxiety disorder.

Trauma and experience like child abuse, rape, etc could easily trigger anxiety disorders in people who have experienced them.

3. Genetics

People with a family history of anxiety disorders are more likely to develop one. If his possible to inherit AD from one or both parents. In most cases the younger the person is when they experience anxiety, the more likely it is to be hereditary. It could still be genetic if found in older family members, Relationship between anxiety Disorder (AD) and Gene have been shown in studies involving Twins and results show that identical twins since they share similar genetic component tend to have move occurrence of (AD) than fraternal twins. No single gene has been found that causes anxiety Combinations of different genes from parents may also predispose to AD.

IV. SYMPTOMS OF ANXIETY DISORDERS

Symptoms vary depending on the

type of anxiety disorder. However genera symptoms include.

- Cold or Sweaty Hands
- Dry mouth
- Heart Palpitation
- Nausea
- Numbness or Tingling in Hands or Feet
- Muscle Tension
- Shortness of Breath

Other Symptoms include

- Excessive worrying
- Agitation
- Restlessness
- Fatigue

Mental Symptoms

- Feeling panic, Fear and Uneasiness
- Nightmares
- Repeated thought or flashback of traumatic experience
- Uncontrollable, Obsessive thought

Behavioral Symptoms

- Inability to be still and calm
- Ritualistic behaviors such as washing hands repeatedly
- Trouble sleeping

V. EFFECT OF ANXIETY ON THE BODY

Anxiety is a normal part of life e.g One may feel anxiety before addressing a group or job interview.

In the short term anxiety increases breathing and heart rate, concentrating blood flow to the brain and where needed. This very physical response is preparing one to face an intense situation. If it gets too intense one may feel lightheaded and nervous. An

excessive or persistent state of anxiety can have a devastating effect on physical and mental health

Anxiety disorders can happen at any stage of life, but they usually begin by middle age and women are more likely to have an anxiety disorder than men.

Stressful life experiences may increase the risk of an anxiety disorder. Symptoms may begin immediately or years later.

Having a serious medical condition or a substance use disorder can also lead to an anxiety disorder. Some of the effect of anxiety on the body system are:

- **Central Nervous System**
 Long-term anxiety and panic attacks can cause the brain to release hormones on a regular basis. This can increase the frequency of symptoms such as headaches, dizziness, and depression. When you feel anxious and stressed the brain floods the nervous system with hormones and chemicals e.g. Adrenaline and Cortisol. While helpful for the occasional high-stress event, long-term exposure to stress hormones can be more harmful to the health in the long run e.g. Long-term exposure to cortisol can contribute to weight gain.
- **Cardiovascular System**
 Anxiety disorders can cause rapid heart rate, palpitation and chest pain. It also increases the risk of high blood pressure and other heart diseases like ischemia.



- **Excretory & Digestive System**
 Anxiety affects the excretory system and digestive system with symptoms like nausea, diarrhea and other digestive issues. Loss of appetite can also occur. Studies have also established connection between anxiety disorders and the development of irritable bowel syndrome (IBS) after a bowel syndrome. IBS can cause vomiting, diarrhea or constipation.

- **Immune System**
 Anxiety can trigger the flight-or-fight stress response and release a flood of chemicals and hormones like adrenaline into the system. In the short term, this increases the pulse and breathing rate which leads to high perfusion of the brain hence, prepares one to respond appropriately to an intense situation. The immune system gets a brief boost. With occasional stress, the body returns to normal functioning when the stress passes.

However with repeated anxiety or stress the body never gets the signal to return to normal functioning. This can weaken the immune system thus making the body more vulnerable to viral infections and frequent illnesses. Also, regular vaccines may not work with repeated anxiety.

- **Respiratory System**
 Anxiety causes rapid, shallow breathing. With Chronic Obstructive Pulmonary Disease (COPD) one may be at an increased risk of hospitalization and anxiety-related complications. Other effects of anxiety disorders include

- Headaches
- Muscle Tension
- Insomnia
- Depression
- Social Isolation

VI. MANAGEMENT AND TREATMENT

Anxiety disorders are like any other health problem that

requires treatment and cannot be willed away. It's not a matter of self-discipline or attitude. A lot of progress has been made through research over the years in treating mental health. Medications cannot cure anxiety disorders but can improve symptoms and help the patient function better. Medications for anxiety disorders include

- **Benzodiazepines**
 Benzodiazepines through their actions decrease anxiety, panic, and worry. They work quickly but easily build up tolerance in patients. This makes them less effective over time. Healthcare providers may prescribe an anti-anxiety such as benzodiazepines for the short term, then taper off or may add an anti-depressant to the mix.

- **Antidepressants**
 Antidepressants help balance the level of neurotransmitters, which are chemicals responsible for communication between neurons in the brain. These chemicals include serotonin, dopamine and norepinephrine. Selective serotonin reuptake inhibitors (SSRIs) are the antidepressant of choice in the management of Anxiety Disorders. They can relieve anxiety symptoms and help reduce the symptoms of depression that often accompany anxiety disorders.

It usually takes 2 to 6 weeks for SSRIs to start reducing anxiety. Escitalopram and paroxetine are two SSRIs for people with generalized anxiety disorders. If an SSRI is effective it is recommended to take the medication for another



6 to 12 months and then gradually reduce the dose. Research suggests that this lowers the risk of relapse. Possible side effects of SSRIs include nausea, insomnia and sexual dysfunction. Some people have less interest in sex or can't have an orgasm. Men may ejaculate only a small amount of semen or may not ejaculate at all.

Other Medications

There are a number of other medications that can be used to treat anxiety disorders. But many of them are considered if treatment with SSRIs doesn't work or isn't possible for particular reasons.

- Selective Norepinephrine Re-uptake Inhibitors (SNRIs) e.g. Duloxetine and venlafaxine. They have a similar effect as the SSRIs.
- Pregabalin: This drug is mainly used to treat nerve-related pains but is also approved for the treatment of generalized anxiety disorders as studies have shown its effectiveness. But it often causes dizziness and tiredness.
- Buspirone: This drug can relieve anxiety. It's usually only used if for example SSRIs are not effective or are not well tolerated. Side effects include drowsiness, nausea, and sleep problems.
- Hydroxyzine: This antihistamine can also probably reduce the symptoms of generalized anxiety disorder. There has been less research on it than on other drugs, so it's hardly ever used.

Medications such as Imipramine (a tricyclic antidepressant) or quetiapine (a neuroleptic) have also been found to be effective in studies.

- **Psychotherapy**



This is also known as talk therapy or psychological counseling. Psychotherapy involves working with a therapist to reduce anxiety symptoms. It can be an effective treatment for anxiety.

Cognitive Behavioral Therapy (CBT) is the most effective form of psychotherapy for anxiety disorders. Generally a short-term treatment, CBT focuses on teaching the patient the specific skills to improve symptoms and gradually return to the activities that have been avoided due to anxiety.

CBT includes exposure therapy, in which the patient gradually encounters the object or situation that triggers anxiety so as to build confidence to manage the situation and anxiety symptom.

Other forms of managing Anxiety disorders are:

- Physical Activities
 Keeping physically active helps in relieving symptoms of anxiety. Exercise is a powerful stress reducer. It also helps to

improve the mood and boost the immune system.

- Life style modifications like avoiding Alcohol, recreational drugs, quitting smoking and caffeinated beverages have been found useful in managing anxiety.
- Stress management and Relaxation techniques like Yoga, meditation, and visualization techniques also help to ease anxiety
- Healthy eating such as focusing on vegetables, fruits, whole grains, and fish has been linked to reducing anxiety.

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Continuing Education/Clinical Pharmacy

DEPRESSION

Pharm.Ogunleke Abayomi



Outline

1. Overview
2. Symptoms and manifestations of depression
3. Conditions which may contribute to depression
4. Drugs and other substances which may contribute to depression
5. Treatment of depression

1. OVERVIEW

Depression is a common illness worldwide, with an estimated 3.8% of the population affected, including 5.0% among adults and 5.7% among adults older than 60 years. Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when recurrent and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at

school and in the family. At its worst, depression can lead to suicide. Over 700 000 people die due to suicide every year. Suicide is the fourth leading cause of death in 15-29-year-olds. Depression is twice as common in women as in men and may increase during times of changing hormonal levels such as menopause.

Depression is characterized by depressed mood. Factors, such as genetics, social life, environment, body hormones, life stages and several exogenous substances have been implicated in the etiology of depression. There are treatment options for depression. The combination of pharmacological and psychological treatment has been proven to have the highest efficacy in most patients with episodes of depression.

2. SYMPTOMS AND MANIFESTATIONS OF DEPRESSION

During a depressive episode, the person experiences depressed mood (feeling sad, irritable, empty) or a loss of pleasure or interest in activities, for most of the day, nearly every day, for at least two weeks. Several other symptoms are also present, which may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness about the future, thoughts about dying or suicide, disrupted sleep, changes in appetite or weight, and feeling especially tired or low in energy, a decline in hygiene, relatively diminished interest or loss of pleasure in things (sometimes in almost all things), and indecisiveness.

The exact pathophysiology of depression is not known, as there are several theories which attempt its explanation. However, low level of certain neurotransmitters, such as serotonin, has been associated with depression.

During a depressive episode, the person experiences significant difficulty in personal, family, social, educational, occupational, and/or other important areas of functioning. A depressive episode can be categorised as mild, moderate, or severe depending on the number and severity of symptoms, as well as the impact on the individual's functioning.

There are different patterns of mood disorders including:

- i. Single episode depressive disorder - The person's first and only episode.
- ii. Recurrent depressive disorder - The person has a

history of at least two depressive episodes; and

iii. Bipolar disorder -

Depressive episodes alternate with periods of manic symptoms, which include euphoria or irritability, increased activity or energy, and other symptoms such as increased talkativeness, racing thoughts, increased self-esteem, decreased need for sleep, distractibility, and impulsive reckless behaviour.



OTHER MANIFESTATIONS OF DEPRESSION:

I. Depression and Chronic Constipation:

Up to a third of people with depression have chronic constipation. A few studies report that people with depression rate their accompanying bowel difficulties as one of the biggest factors reducing their quality of life.

A 2019-published study suggests that for some people, depression and accompanying constipation arise from the same factor: low serotonin. A study conducted in mice shows that a shortage of serotonin in the neurons of the gut can cause constipation, just as serotonin shortage in the brain can lead to depression.

ii. Depression and Coronary Heart Disease:

Depression is associated with increased risk for or worsening of coronary heart disease and death.

iii. Depression and Sleep Disturbance:

Difficulty in staying asleep is a characteristic of depression. There is usually early waking and frequent awakenings. In some cases, biological symptoms are reversed and excessive eating and sleeping may occur.

iv. Depression and Pain Exacerbation:

Depression may contribute to exacerbation of physical pain.

v. Depression and Low Sexual Drive:

Sexual drive is often reduced and some people may lose interest in sex, altogether.

3. CONDITIONS WHICH MAY CONTRIBUTE TO DEPRESSION

Depression results from a complex interaction of social, environmental, psychological, and biological factors. People who have gone through adverse life events (unemployment, bereavement, traumatic events, impaired social support, loneliness) are more likely to

develop depression. Depression can, in turn, lead to more stress and dysfunction and worsen the affected person's life situation and the depression itself.

Conditions which may contribute to depression include:

i. Chronic Eczema and Psoriasis:

Chronic eczema could cause psychological effects which can lead to isolation and depression. Psoriasis could also cause depression.

ii. Hypothyroidism:

Sometimes, depression could be a sign of hypothyroidism.

iii. Parkinson's disease:

Depression is common in Parkinson's disease. It is the major determinant of quality of life among people with Parkinson's disease, though it is often missed.

iv. Persistent Pain:

Persistent pain is accompanied frequently by anxiety and depression. Up to 30% of rheumatoid arthritis patients experience depression at the onset of the disease. Thus, it might, sometimes, be necessary to use antidepressants during pain management.

v. Folate Deficiency:

Folate deficiency produces depression as one of its manifestations.

vi. Myocardial infarction:

There is post-myocardial infarction depression, which is associated with poor medication compliance, a lower quality of life score and a four-fold increase in mortality.



vii. **Chronic Obstructive Pulmonary Disease (COPD):** COPD can lead to feelings of hopelessness, social isolation, reduced physical functioning and sedentary lifestyle, all of which are associated with an increased level of depressive symptoms. Around 40% of people with COPD are affected with severe depressive symptoms or clinical depression.

viii. **Menstruation:** Depression could be a part of premenstrual syndrome, occurring some days before menstruation. Also, any change in menstruation, whether real or perceived, may be disturbing with respect to social, occupational or sexual activities and can lead to other problems, including depression.

ix. **Perimenopause:** The perimenopausal period

increases the risk for depression.

x. **Old age:** Older people are more likely to have reduced social interaction and social activities, which often could be a risk factor for depression.

4. DRUGS AND OTHER SUBSTANCES WHICH MAY CONTRIBUTE TO DEPRESSION

i. **Benzyl alcohol, Polysorbates and Propylene glycol:** These are commonly used excipients which may induce a range of adverse effects, such as central nervous system depression. Knowledge of drugs that contain these ingredients may influence drug selection.

ii. **Levodopa and Dopamine Agonists:** Levodopa, as well as dopamine agonists, such as cabergoline and bromocriptine, could cause depression as side effect.

This side effect may persist for several months after discontinuation of the drugs.

iii. **Oral Contraceptives:** Several studies have established the relationship between the use of oral contraceptives and depression, one of which is a 2019-published study. The study arrived at higher concurrent depressive symptom scores among women using oral contraceptives. Oral contraceptive users particularly reported more crying, eating problems and hypersomnia, compared with non-users.

iv. **Corticosteroids:** Systemic corticosteroids, including inhalation forms, lowers serotonin levels and can cause depression. Abrupt withdrawal or huge dosage reduction could also precipitate withdrawal symptoms, such as depression.

v. **Acetazolamide:** This drug could cause depression as side effect.

vi. **Benzodiazepines:** Chronic use of benzodiazepines can aggravate depression. It can also cause depression in patients with no history of previous depressive disorder.

5. TREATMENT OF DEPRESSION

Antidepressant medications should not be used to treat patients with mild



depression. Non-pharmacological strategies are preferable in this group. Social interaction, physical activity and education are proven to help alleviate symptoms of depression.

In moderate and severe depression, pharmacological intervention is important, but should never be considered in isolation from social, cultural and environmental influences on the patient. In children and adolescents, pharmacotherapy by itself is insufficient.

In all populations, the combination of medication and psychotherapy generally provides the quickest and most sustained response. It is also associated with increased quality of life and better treatment compliance, especially when treatment is needed for longer than 3

months. There is also empirical support for the ability of brief psychotherapy (CBT) to prevent relapse.

According to the 2008 American College of Physicians guideline, the treatment for major depressive disorder should be altered if the patient does not have adequate response to pharmacotherapy within 6 to 8 weeks. Once satisfactory response is achieved, treatment should be continued for 4 to 9 months in patients with a first episode of major depression that was not associated with significant suicidality or catastrophic outcomes. In those who have had 2 or more episodes of depression, a longer course of maintenance treatment may prove beneficial. Virtually all antidepressants

are equally effective. However, they differ in their side effect profile, toxicity in overdose, need for titration and monitoring. In general, the SSRI antidepressants appear to be better tolerated than tricyclics.

Antidepressants should generally be taken in adequate doses for some 4 to 6 weeks, and up to 12 weeks in older people, to achieve a full response. When sleep disturbance is secondary to depression, antidepressants with sedative properties, such as amitriptyline, may be helpful.

While various forms of psychotherapy are available and have been used, below is a summary of various pharmacological interventions that can be used in the treatment of depression:

CLASS OF ANTI-DEPRESSANT	COMMON EXAMPLES	MECHANISM OF ACTION	ADVANTAGES OF CHOOSING THIS CLASS	ADVERSE/SIDE EFFECTS
Selective Serotonin Reuptake Inhibitors (SSRIs)	Escitaloram, Fluoxetine, Sertraline, Paroxetine.	Inhibit reuptake of serotonin, increasing its extracellular availability in the brain, and thereby reducing depression.	Ease of dosing; low toxicity in overdose; generally preferred in children and adolescents; first-line for late-onset depression; less prominent adverse-effect profile than that of some other agents, which promotes better compliance; less anticholinergic side effects	Sexual dysfunction, fatigue.



Venlafaxine, Duloxetine, Desvenlafaxine		Inhibition of serotonin and norepinephrine reuptake	Can be used as first-line, particularly in patients with significant fatigue or pain syndromes associated with episodes of depression.	Similar to those of SSRIs; hypertension.
Atypical antidepressants	Bupropion, Mirtazapine, Nefazodone.	Very widely form other antidepressants; vary among members of the same class.	Low toxicity in overdose; less sexual dysfunction and less GI distress than SSRIs	Mirtazapine is associated with increased risk of weight gain.
Serotonin-dopamine activity modulators (SDAMs)	Brexipiprazole, Aripiprazole	Modulate the activity of serotonin and dopamine		Insomnia, weight gain, agitation, extrapyramidal symptoms, insomnia.
Tricyclic antidepressants (TCAs)	Amitriptyline, Clomipramine, Imipramine, Nortriptyline	Majority act primarily as SNRIs by blocking serotonin and norepinephrine transporters.		Used less commonly due to side effect profile and considerable toxicity in overdose; largely replaced by SSRIs and SNRIs
Monoamine oxidase inhibitors (MAOIs)	Isocarboxazid, Phenelzine, Selegiline and Tranylcypromine	Inhibit the activities of MAO enzymes A or B or both, thereby making monoamines, such as serotonin, norepinephrine and dopamine, more available, thereby reducing depression.	Effective in treatment-resistant depression and atypical depression.	Patient must follow a low-tyramine diet due to reduced uptake and consequent excessive build-up, leading to risk of hypertensive crisis; insomnia; anxiety; weight gain; sexual dysfunction; orthostasis
St. John's wort		May act as an SSRI	Considered first-line in many European countries	Only effective for mild to moderate depressive symptoms.

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COMMUNITY PRACTICE



Mental Health Disorders and Medication Adherence: The Role of Community Pharmacists

Pharm. Olanike Olatawura B.Pharm, MMP

Outline

- I. The Prevalence and Impact of Mental Health Disorders
- II. What is Medication Adherence?
- III. Reasons for Nonadherence
- IV. Consequences of Nonadherence
- V. How Pharmacists Can Intervene
- VI. References

I. The Prevalence and Impact of Mental Health Disorders
One in four adults and one in 10 children experience mental illness. Based on Community for Disease Control (CDC) data for 2019, mental-health disorders were diagnosed in 21% of adult patients mainly during hospital visits. About 19.2% of diagnosed patients received treatment. Patients had a mean delay of 11 years between the onset of symptoms and receipt of treatment; more than 50% of persons with mental illness do not receive therapy for it. In 2020, 15.8% of adult patients were taking prescription drugs

and 9.5% received counselling or therapy from a mental-health professional.

Throughout the world, depression continues to be one of the most common mental-health disorders and the foremost cause of disability. It is predicted that by 2030, major depression will be the leading global disease burden. The National Alliance on Mental Illness has stated that depression, at its worst, may

result in suicidal tendencies or suicide which is responsible for an estimated 800,000 deaths worldwide each year.

Research indicates that mental-health disorders may result from genetic, biological, environmental, and psychological factors, singly or in combination and often coexists with other medical conditions. Various life stressors can contribute to or exacerbate depression in



some patients, such as traumatic life events (e.g. death of a loved one, divorce or end of a relationship, loss of employment), financial problems, lack of a support system, and chronic stress, to name a few.

The incidence of major depressive episodes was greater among adult females compared with adult males (10.5% vs. 6.2%, respectively), and the age group with the greatest incidence was 18 to 25 years (an estimated 17%). In a comparison of rates of depression before and during the pandemic, the incidence of depressive symptoms was more than three times greater during the pandemic due to social isolation resulting from lockdowns as well as financial struggles due to loss of employment. Healthcare workers demonstrated higher rates of depression and anxiety related to extreme stress and inadequate emotional support.

It is important to be aware that the characteristics common to all of the depressive disorders include feelings of sadness or emptiness, irritable mood, and somatic and cognitive shifts that considerably impact the patient's ability to function. The U.S. Preventive Services Task Force (USPSTF) recommends depression screening in the general population aged 12 years and older, and in pregnant and postpartum women.

Depression is common and can manifest at any stage of life;

however, it is greatly under recognized and frequently under treated. This is alarming because "there is no health without mental health".

II. What is medication adherence?

There are multiple effective therapies for depression, including medication, psychotherapy (counselling, cognitive-behavioural therapy), and combinations of these. Combination therapy has been linked to significantly higher rates of improvement of depressive symptoms, enhanced quality of life (QOL), and better treatment compliance.

Adherence to pharmacological treatment is essential for alleviation of symptoms. However, an estimated 50% of those who respond well to medications are non-adherent to their treatment regimen; ranging from patients who refuse to take medications due to lack of acceptance of the need, to patients who recognize the need for medication and are committed to treatment but are nonadherent due to forgetfulness or financial constraints.

The consensus definition for adherence is taking more than 80% of prescribed medications; partial adherence is defined as taking 50% of prescribed medications while non-adherence can be defined as being off medications for 1 week. Medication non-adherence is a major public health problem that has been

called an "invisible epidemic".

III. Reasons for non-adherence

Many people with a mental-health disorder do not seek help or discuss it with their loved ones or healthcare providers because of the stigma attached to mental illness.

Common reasons for non-adherence to antidepressants include both patient factors (e.g., medication costs, worries about adverse effects, fears of addiction, misconceptions about depression and antidepressants) and clinician factors (e.g. insufficient patient education, poor follow-up). Non-adherence may also be due to poor memory, anxiety, low motivation, or insufficient understanding of or lack of support in managing depression and the selected therapy.

Approximately 33% of patients discontinue antidepressant therapy within the first month, and 44% of patients discontinue by the third month.

IV. Consequences of nonadherence

Partial or complete lack of adherence to medications is associated with several negative outcomes. Medication non-adherence is associated with an increased risk for relapse of psychosis, persistent symptoms, and suicide attempts. Among people experiencing a first episodes of psychosis, symptom recurrence rates are an average of 77% within 1 year of

stopping medications, and over 90% within 2 years of stopping medications.

Non-adherence to medications during the first week after discharge from an inpatient hospitalization was associated with a high risk for rehospitalization within 1 month of discharge. Length of hospital stay is also extended due to non-adherence. Average hospital costs in non-adherent inpatients were three times higher than costs for adherent inpatients.

V. How Pharmacists can intervene in addressing Adherence to Mental Health therapy

Progress in the recognition and treatment of mental illness requires more effort to encourage and support those struggling with these disorders. Successful treatment depends on early recognition, management, adherence to selected therapy, and routine monitoring.

The overall goals of therapy are to

- a. Alleviate symptoms
- b. Enhance patient’s quality of life and
- c. Minimize the incidence of adverse effects from all medications.

To improve adherence, the treatment plan should be tailored to the individual patient and adjusted as needed. Additionally, patients should be encouraged to take an active role in their health.

Pharmacist-provided patient care is associated with improved clinical outcomes;

when patients sense their pharmacist is comfortable discussing mental-health problems, they feel comfortable discussing depression. This enables patients to more readily seek help and receive therapy.

The role of Community Pharmacists in ensuring adherence in patients with mental health disorders should therefore include:

i. Building Trust Through Pharmaceutical Care

Community Pharmacists have unique, sustained access to patients, establishing trust through relationship. Most people would rather deal with a known face that cares, than a stranger.

Many of the medicines used to treat mental health problems are associated with health risks. As the experts in medicines and their use, pharmacists can ensure people get the best outcomes from their medicines, reduce adverse events, minimise avoidable harm and unplanned admissions to hospital, ensuring resources are used more efficiently to deliver the standard and level of care people with mental health conditions

deserve.

ii. Active Training of Pharmacists in Mental Health Disorders

Pharmacists trained in mental-health disorders prevent negative outcomes and also enhance positive clinical outcomes by promoting appropriate drug choices and regimen adherence.

iii. Make mental health care a core part of services with routine mental health screening

Pharmacists can be instrumental in identifying patients with signs or at risk of depression, and also medical conditions and drugs that carry an increased risk of depression. Any services offered by pharmacy should routinely take into account mental health..

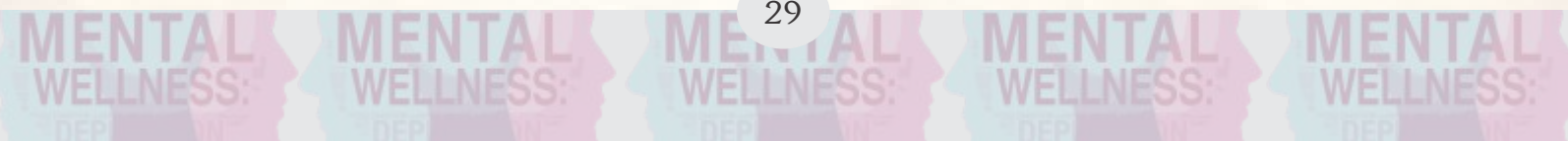
iv. Recognition of mental illness triggers

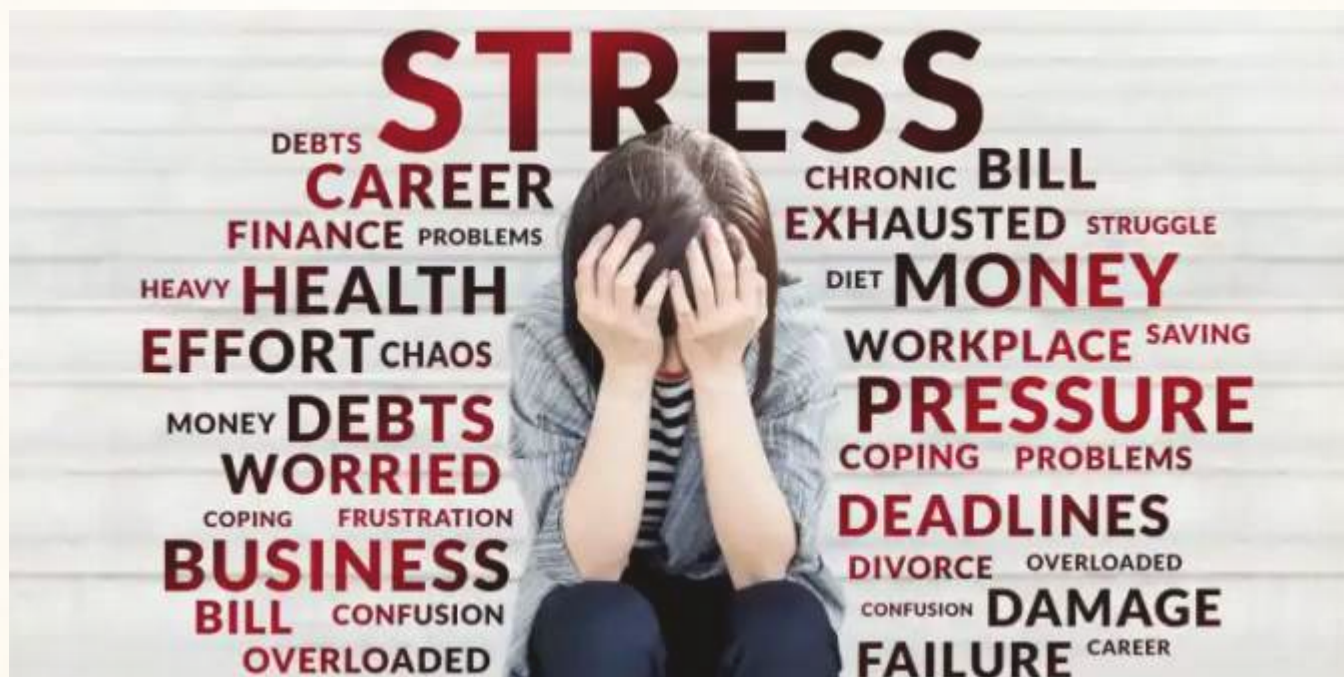
Pharmacists need to be aware of common trigger points (for example, bereavement or

WHAT TRIGGERED ME

- | | |
|----------------------------------|--------------------------------|
| 1. I felt excluded. | 13. I felt like the bad guy. |
| 2. I felt powerless. | 14. I felt forgotten. |
| 3. I felt unheard. | 15. I felt unsafe. |
| 4. I felt scolded. | 16. I felt unloved. |
| 5. I felt judged. | 17. I felt like it was unfair. |
| 6. I felt blamed. | 18. I felt frustrated. |
| 7. I felt disrespected. | 19. I felt disconnected. |
| 8. I felt a lack of affection. | 20. I felt trapped. |
| 9. I felt I couldn't speak up. | 21. I felt a lack of passion. |
| 10. I felt lonely. | 22. I felt uncared for. |
| 11. I felt ignored. | 23. I felt manipulated. |
| 12. I felt I couldn't be honest. | 24. I felt controlled. |

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diagnosis of a long-term condition) in order to help early identification of illness. Trigger points should prompt the question “how does this make you feel?”

A considerable percentage of the population are diagnosed with a long-term physical health condition, and one in three of this group will experience a mental health problem. Community pharmacists should consider mental health problems when talking to patients newly diagnosed with a long-term condition; knowing when and how to initiate conversations about mental health. 25% of over 55s think that depression and anxiety are a normal part of ageing, and a third of those living with anxiety and depression think that it is an inevitable consequence of getting older.”

v. *Recognition of Mental illness*

Early identification of depression and anxiety is a potential role for pharmacists working in primary and community care settings which can be integrated with ongoing monitoring of medicines.

vi. *Collaboration with other health care professionals and caregivers*

A collaborative effort between pharmacists, prescribers, patients and caregivers is essential, along with patient education and emphasis on the importance of adherence to the selected therapy to effectively manage depression and prevent the adverse consequences of nonadherence. This will also facilitate prompt referral and follow-up of patients.

Depression can complicate other medical conditions; lead to substance abuse; affect productivity as well as

personal and professional relationships; and, in some cases, result in suicidal tendencies or suicide. Keep the lines of communication open with both patients and prescribers.

Transitions of care are a particular area of risk for patients with mental health problems. The transfer of inaccurate or incomplete information about a patient’s medicines can lead to patient safety being compromised. Pharmacists can liaise with patients and their care-givers in the capacity of a care navigator and provide integrated services that lead to longer and healthier lives.

vii. *Creating Awareness of Mental health Disorders as commonplace*

Affected individuals and their loved ones should be encouraged, by showing empathy, to discuss and seek help for depression as well as



overcome the associated stigma based on the understanding that everyone is at risk and liable to suffer from mental disorder sometime in their lifetime due to the pressures of life; without a genetic basis.

There should be routine awareness campaigns about the cause and treatable nature of mental disorders to quell the associated fear, lack of understanding, and misconceptions about mental illness to enable people seek medical evaluation, obtain appropriate therapy, and possibly enhance overall clinical outcomes and health-related quality of life.

Viii. Educating about therapy options for mental health disorders

Pharmacists can also educate patients about depression, pharmacologic treatment options (including proper use and potential adverse effects), and nonpharmacologic measures such as psychotherapy and patient-support groups thus acting as a patient educator and advocate, encouraging patients with depression to discuss it with their primary healthcare provider.

ix. Evolution of patient specific remedies to medication or therapy nonadherence

Identify signs of nonadherence in patients prescribed antidepressants. Make recommendations to improve adherence, such as refill reminders.

x. Solicitation of support for patients

Expanding access to patient-support resources from the community, relatives, friends, alumni associations and other social groups, will help reduce the financial burden and its attendant anxiety and lead to better treatment outcomes.

Encourage patients to take an active role in their health and provide information about patient-support and cost-savings programs as well as other resources available.

Xi. Support the physical health of patients with mental health problems

Improving the physical health care of patients with mental health problems and helping to close the 15-20year mortality gap was thought to be an area where community pharmacy in particular could have a significant role. "If you have a Severe Mental Illness, you are likely to die 15-20 years earlier than average. We need to help people with their physical health as well as their mental health.

"A key role for community pharmacy should be to conduct physical health checks for patients with mental health problems. Supporting patients with physical activity, smoking cessation and diet as part as a multidisciplinary team."

Xii. Adverse drug effect monitoring and counselling

Being instrumental in the management of depression

through provision of pharmacovigilance by engaging in medication therapy management, making clinical recommendations tailored to patient need, counselling on the appropriate use of prescribed therapy, screening for contraindications and potential drug-drug interactions, and addressing the patient's concerns about the selected therapy.

Counsel patients about the benefits of therapy, importance of adherence, routine monitoring, and what to expect from therapy, including that once it is initiated it takes time for symptoms to improve. Educate patients about potential adverse effects, how to manage them, and when to contact their primary healthcare provider; if the patient experiences agitation, anxiety, or any suicidal thoughts or behaviours after initiation of an antidepressant.

Xiii. Monitoring of concomitant disease treatment regimen of patients

Risks in terms of premature death include diabetes, obesity and hypertension, lack of exercise and smoking. Suicide is also a significant risk. Over a quarter of suicides (28%) are people who have been in contact with mental health services in the 12 months before their deaths.

Xiv. Convening of Support groups for shared concerns

Patient-support groups offer hope for persons with depression due to identification with other people who have

shared experiences and common problems.

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The Past and the Present Roles of Community Pharmacists in Mental Healthcare: Is There Room for More?

Pharm Charles Akinsete, MAW.



Outline

- I. Introduction
- II. The Past Role of Community Pharmacists in Mental Healthcare
- III. The Present Role of Community Pharmacists in Mental Healthcare
- IV. The Future Role of Community Pharmacists in Mental Healthcare.
- V. Conclusion
- VI. References

I. Introduction:

Mental illnesses cause significant disease burden globally and in Nigeria specifically, with medicines being a major modality of treatment for most mental illnesses. Community Pharmacists are accessible and trusted healthcare professionals who have been playing very unique and important roles in supporting people living with mental illness.

This submission is aimed at highlighting the role of Community pharmacists in mental healthcare, as part of the multidisciplinary healthcare teams. An attempt will be made at looking at the current evidence to support these roles, and the training, remuneration and policy

changes needed to recognize these roles of Community Pharmacists being the core members of the mental healthcare team.

Pharmacists are well-placed to contribute to the mental health and psychological wellbeing of the individuals and communities they serve. However, their contribution to, and impact on mental healthcare has often been “anecdotal” – known and discussed, but not measured, analysed and disseminated in published scientific literature, due to a lack of funding for research in this area as well as the difficulties in exploring effectiveness given the diverse services and interventions pharmacists provide.

II. The Past Role of Community Pharmacists in Mental Healthcare

The Community Pharmacists have long been at the forefront of promoting the efficacious and effective use of Psychotropic drugs and control and counseling of patients. The various drug laws have served as a veritable tool and guide for them to control and continue to provide the platform for review and

effective dispensing of mental health services including administration of drugs.

However, this enormous responsibility has not been adequately rewarded.

III. The Present Role of Community Pharmacists in Mental Healthcare

In recent years, this has started to change with key pharmacy bodies including the International Pharmaceutical Federation, the United Kingdom’s Royal Pharmaceutical Society and the Pharmaceutical Society of Australia publishing reports and frameworks highlighting pharmacists’ roles in mental healthcare, which can include early detection of mental illness, supporting access to mental health services and optimizing therapies.

Mental health pharmacists and multidisciplinary mental healthcare teams are beginning to emerge. The second half of the 20th century brought a shift in the treatment of people living with mental illness in many countries around the world, including Nigeria with a transition from

institutionalisation to outpatient care.

This transition created the need for multidisciplinary teams to optimise care for people living with mental illness and the role of the mental health or 'psychiatric' pharmacist, as a specialised area of practice has been described since at least the early 1970s.

Early descriptions of the role of these specialized pharmacists include working with nurses and physicians in community mental health centres to optimize drug therapy, in addition to their roles in dispensing and providing education regarding medicines. These roles have continued into the 21st century, making mental health pharmacists key players in clinical management within in-patient and outpatient settings.

As the role of mental health pharmacists expands, sub-niches of practice have developed. Examples include pharmacists working in pharmacist-led clozapine clinics, administering injections in long-acting injectable antipsychotic services, and supporting students' mental health in psychiatric pharmacist services at tertiary education campuses.

The role of independent prescribing pharmacists in the care of people living with mental illness is another emerging area, with studies reporting on positive outcomes relating to pharmacist-led prescribing, such as significant

reductions in psychiatric emergency service visits, demonstrating pharmacists' ability to expand their roles and potentially relieve pressure on health systems.

Furthermore, mental health pharmacists may also be well-placed to educate other members of the healthcare team. These sub-niches allow pharmacists to use their expertise in pharmacotherapy to play integral, yet diverse, roles in caring for people living with mental illness.

Community Pharmacists can also play an active role in mental healthcare through the provision of pharmaceutical care interventions.

Pharmaceutical care interventions can include medication review services,

IV. The Future Role of Community Pharmacists in Mental Healthcare.

a. Education and training: Current State and Future Directions.

It is evident that the growing role of Pharmacists in mental healthcare is not restricted to those that specialize in psychiatry, but also includes Community Pharmacists who are among the most accessible healthcare professionals.

Community pharmacists are well-placed to identify people at risk of mental health crises, screen for mental illness, run mental health promotion campaigns, and provide education to people living with mental illness and their carers.

As the profession moves away from traditional dispensing



such as the Home Medical Screening and promotion of wellness as a component of their roles.

roles and starts to place more emphasis on service delivery and disease state management, pharmacists can continue to cement their place as integral members of the mental

healthcare team by contributing to broader public health priorities. The higher rates of morbidity and mortality among people living with mental illnesses are often attributed to poor physical health among this population, often a result of the adverse effects of medications (e.g., weight gain with antipsychotics), as well as the symptoms of the illness itself.

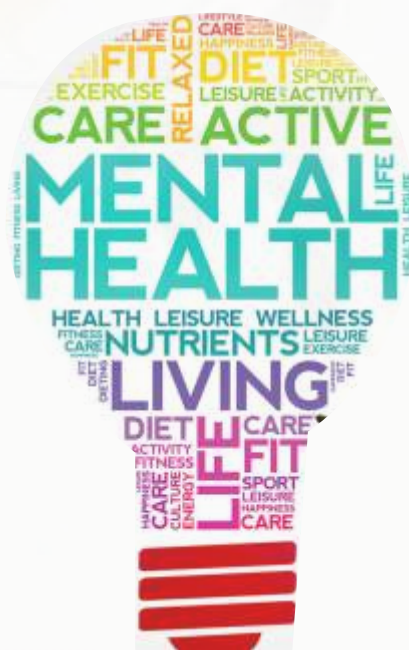
Furthermore, smoking rates are much higher among people living with mental illness, also contributing to lower life expectancy for this population. Hence, Community pharmacists can provide important services such as nicotine replacement therapy and weight management, supply medicines once restricted to hospital settings such as clozapine, as well as administer mental health medicines such as long-acting antipsychotics.

However, to take on these roles, Community Pharmacists' roles in mental healthcare need to be recognized and supported, not only through remuneration but also through appropriate education and training.

Adequate training is needed to equip the pharmacist workforce with the necessary skillset to support the management of mental health problems and crises within their scope of practice. Well-trained pharmacists can also contribute to the reduction of stigma against people living with mental illness, as well as

promote awareness of and access to mental health services, all of which are often barriers to seeking mental healthcare. There is a growing body of evidence relating to mental health education incorporated into pharmacy curricula for pharmacy students, as well as continuing professional education for pharmacists.

Mental Health First Aid (MHFA), has gained international recognition as a relevant and necessary training for frontline healthcare professionals, including



pharmacists, and has been taught to pharmacy students and pharmacists alike. The evidence pertaining to MHFA training in pharmacy dates back to 2011, when a controlled trial conducted on Australian pharmacy students demonstrated improved self-reported knowledge, confidence, attitudes and behaviours among MHFA-

trained pharmacy students.

Over the last decade, other studies involving pharmacy students in the United States and Australia have also demonstrated improved learning and behavioral outcomes. A recent systematic review exploring MHFA training and assessment in university curricula, generally, reported that a considerable proportion of studies exploring integration and evaluation of MHFA training were among pharmacy students in the United States and Australia, and we are increasingly seeing MHFA being taught within healthcare and other curricula internationally. While MHFA training is not uniformly offered to all pharmacy students or pharmacists, there has been support by researchers and pharmacy associations to embed it within pharmacy education.

The Association of Community Pharmacists of Nigeria (ACPN) in conjunction with the West African Postgraduate College of Pharmacists and the Pharmacists Council of Nigeria (PCN) should as a matter of urgency and necessity create the milieu for the training of Community Pharmacists in this all important area of specialization. Community Pharmacists are well positioned to play specific roles in suicide prevention and control. In due course, these services will be increasingly recognized and valued.

There is a need to upskill the frontline pharmacy profession

in suicide prevention, intervention and postvention, especially as studies have found that a minority of pharmacists and pharmacy staff have completed suicide prevention or mental health crisis training, ranging from 8.8% in the United States, 12% in Canada and 29% in Australia.

It is evident that suicide education is often lacking from healthcare, including pharmacy, curricula – an issue noted in the 1970s and confirmed again in 2019 as per the findings of a systematic review.

Mental illness and suicide prevention are public health priority areas, globally, and their omission from pharmacy curricula may stem from the lack of public health education in pharmacy curricula, more generally.

Mandatory, standardized basic mental health crisis education and training is needed for pharmacists to contribute to the public health response to suicide prevention and mental healthcare. Another critical area is the incorporation of Traditional medicine into the management of mental illness.

V. Conclusion.

Community Pharmacists have a significant role to play in supporting people living with mental illness in their communities. However, further work is required in demonstrating the clinical outcomes and cost-effectiveness of these roles to allow pharmacists to be

embedded into mental healthcare teams routinely across various practice settings.

In addition, standardized, mandatory mental health and crisis first aid training is required for all pharmacists to ensure they are able to confidently and appropriately care for people living with mental illnesses and experiencing crises, thereby becoming integral to mental healthcare teams and the public health response to suicide prevention.

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THE EFFECT OF CHRONIC AND TERMINAL ILLNESS ON MENTAL HEALTH: HOW CAN HEALTH PROFESSIONALS AND FAMILIES HELP?

Pharm. Charles Oluwole

Outline

- I. Introduction
- II. Chronic and Terminal Illness
- III. Depression
- IV. How Health Professionals Can Help?
- V. How family members can help?
- VI. Conclusion
- VII. References

I. Introduction

“Everyone has a plan until you are punched.” - Mike Tyson

Mr. Kashmir is a middle-aged man who was diagnosed with Diabetes and hypertension about 7yrs ago. He is a regular visitor to his Community Pharmacist, Pharm. Benson, who has been working synergistically with his physician for a desirable outcome.

During his last visit to refill his medication, Mr. Kashmir requested to see the Pharmacist. Seated with a deep sigh, the Pharmacist could fairly predict the impending outpour; Mr. Kashmir is tired of the ritual

of daily medications and diet restrictions. He confesses a lack of adherence to his medicines until close to the next appointment with his physician. “Are you sure this is not what will kill me?” “For how long will this last?” These are part of the grouses of Mr. Kashmir’s disquieted, wrangling soul.

II. Chronic and Terminal Illness

Poor health conditions can be worrisome. Being on a sickbed can make one feel like being stuck in a mire in a race where everyone is flying. This becomes even more magnified with patients with chronic medical conditions and terminal illnesses.

“Being diagnosed with a chronic illness produces a myriad of intense and long-lasting feelings; from exhaustion and fear to guilt and resentment because of the demands on family and friends. Feelings of frustration and sadness are

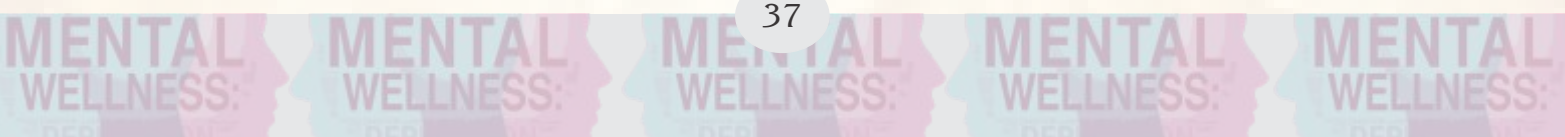
also quite common when you realize the life you once knew is now different”, said Sarah Lindberg, a health correspondent.

Depression is the easiest route that is common in patients with chronic and terminal illnesses. It is estimated that up to one-third of individuals with serious medical conditions experience symptoms of depression.

According to the National Institute of Mental Health (NIMH), people with other chronic medical conditions have a higher risk of depression, and tend to have more severe symptoms of both illnesses.

This could be as a result of a convergence of many factors ranging from psychological, physiological, emotional, or even the effects of the medications they take.

It is normal to feel sad when diagnosed with a chronic or terminal illness such as cancer or diabetes. A few sentences



from the physician could send reverberating waves across the nerves that keep bombarding one's skull.

When these feelings become consistent with cascaded actions such as persistent sadness, anxious or "empty" moods, feelings of hopelessness or pessimism; feeling irritable, easily frustrated, or restless, feeling guilty, worthless, or helpless, loss of interest or pleasure in hobbies and activities, decreased energy, fatigue, or feeling "slowed down", difficulty in concentrating, remembering, or making decisions, difficulty sleeping, early-morning awakening, or oversleeping, changes in appetite or weight, aches or pains, headaches, cramps, or digestive problems without a clear physical cause that do not ease even with treatment, suicide attempts or thoughts of death or suicide; it may be a clear indication of an active depression.

III. Depression

Depression is common among people who have chronic illnesses such as:

- Alzheimer's disease
- Autoimmune diseases, including systemic lupus erythematosus, rheumatoid arthritis, and psoriasis
- Cancer
- Coronary heart disease
- Diabetes
- Epilepsy
- HIV/AIDS
- Hypothyroidism
- Multiple sclerosis
- Parkinson's disease
- Stroke
- Sickle cell disease

Some people may experience symptoms of depression after being diagnosed with a chronic medical illness. Those symptoms may decrease as they adjust to or treat this condition, while some may escalate. Research suggests that people who have depression and another medical illness tend to have more severe symptoms of both

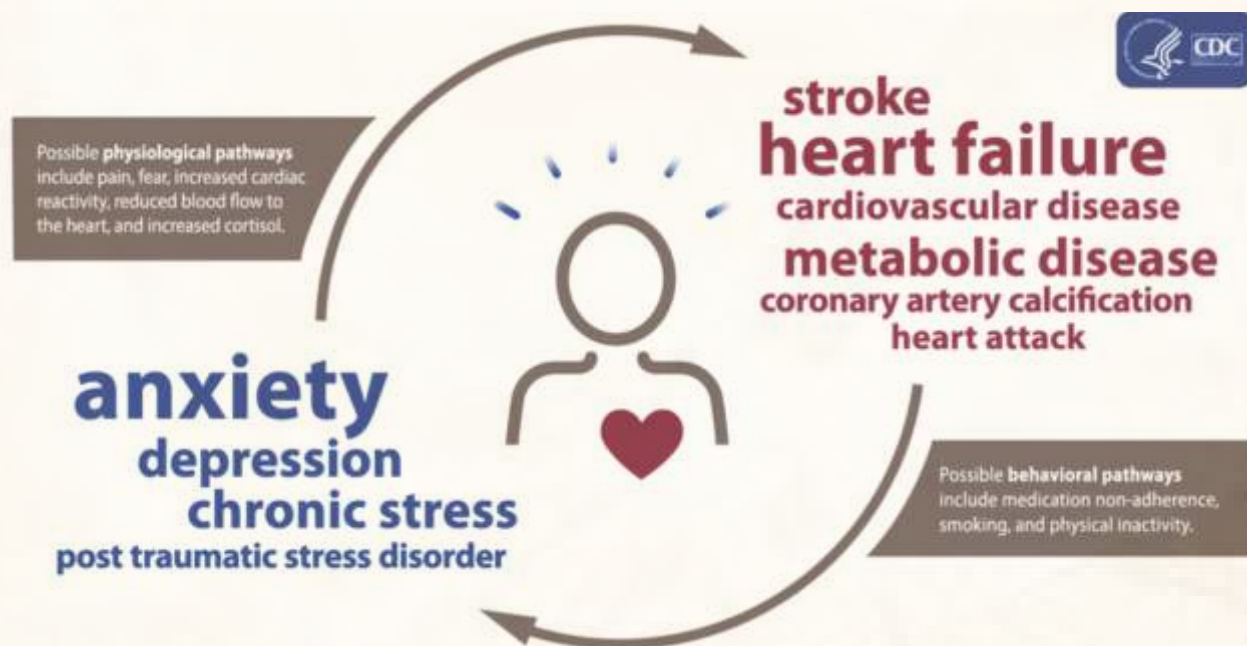
illnesses. They may have more difficulty adapting to their medical condition, and they may have higher medical costs than those who do not have both depression and a medical illness. Symptoms of depression may continue even as a person's physical health improves.

Certain medications used to treat the illness can trigger depression.

IV. How Health Professionals Can Help?

a. Identification of patients with such tendencies:

Health professionals must look out for their patients with chronic medical conditions who are vulnerable to mental illness. This may require periodic, record checking in addition to physical interactions. For example, enquiries reveal that Pharm. Benson (in the opening case scenario) started a relationship with



Mr. Kashmir from the early visits to his pharmacy for refills. Community Pharmacists for example could identify patients who come for medication refill.

b. Effective Communication:

Psychotherapy (talking therapy) is an essential treatment plan in mental illness. Health professionals can prioritize the patients with chronic medical condition for heart-to-heart interactions. For physicians, this may involve separate consultation days for such patients. For Pharmacists, this may require initiated consultation with such patients for a targeted pharmaceutical care. This may be time-consuming and inconvenient but the fact that the lack of it may render all other efforts useless should be an impetus to drive such a task.

c. Group Seminar:

Sometimes, pains become bearable when you are not alone. Health professionals can organize group seminars for people of similar categories, e.g., Diabetes patients. This could also involve some subtle discussion sessions where participants share their experiences to encourage others. This method is already common in the hospital setting, especially in antenatal care but can also be cascaded to other departments such as diabetes, heart disease, and

cancer patients. Community Pharmacists can set up a social media platform such as a WhatsApp group for patients with similar health conditions for periodic seminars and health talks.

d. Periodic Review of Patients' Prescriptions:

From the opening case sample scenario, the Community Pharmacist, after listening to the complaints of Mr. Kashmir, decided to do a robust drug therapeutic review of his medications. Working alongside his physician, they were able among others, to identify certain medicines tagged "no longer necessary" as well as other helpful dietary plans.

Periodic prescription review is a necessary action for patients on chronic medications so as to rule out any possible side effects that may reverse the gains of the treatment. Drugs such as beta-blockers, statins, interferon-alfa, opioids, anticonvulsants, corticosteroids, and stimulants have been known to affect mental health, especially in a prolonged regimen.

e. Referrals:

Mental illness is a composite of many factors which must be approached with an integrative and collaborative approach for a desirable outcome. The best prescription for some patients may be a referral.

Specialists such as psychiatrists, psychologists or counselors might be contacted to assist the patient.

V. How family members can help?

"Life with a chronic illness can feel lonely. Isolation, mental health issues, and physical restrictions all make it difficult to connect with other people and get the support you need. That's why it's essential to surround yourself with support." – Sarah Lindberg.

Family can provide the necessary social and relationship support. The fact that conditions of life do not discriminate should keep all humble to assist whosoever is in such a situation. Family members can also help the patient in ensuring adherence to their medications.

VI. Conclusion

Knowing the inseparable links between physical and mental health, health professionals must deal with their patients holistically for a better health outcome.

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Herbals

Herbals Remedies in Mental Health Disorders

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MD/CEO Living Faith Pharmacy

OUTLINE

- I. INTRODUCTION
- II. DEFINITIONS
- III. TREATMENT FOR MENTAL HEALTH DISORDERS:
- IV. HOW ARE HERBAL REMEDIES DIFFERENT FROM PSYCHIATRIC DRUGS?
- V. HERBAL REMEDIES
- VI. CONCLUSION
- VII. REFERENCES

i. Introduction:

Herbal remedies have grown tremendously in popularity globally, becoming a major component of healthcare and general wellness. The ready availability of these remedies and their generally good tolerability and safety contribute to this popularity and often, in cases when conventional treatments have failed or caused intolerable side effects (David Mschoulon M.D).

ii. Definition:

Herbal medicines include herbs, herbal materials, herbal

preparations and finished herbal products that contain as active ingredients parts of plants, or other plant materials or combinations (WHO).

iii. What is a Mental Health Disorder?

Mental (behavioral) health disorders or mental illnesses affect the way you think and behave. They change your mood and make it difficult to function at home, work, and school or in your community. Examples of mental health disorders include;

- a. Anxiety disorders
- b. Attention-deficit / hyperactivity disorder (ADHD)
- c. Autism spectrum disorder
- d. Depression, bipolar disorder and other mood disorders.
- e. Disruptive behavior disorders
- f. Eating disorders
- g. Obsessive-compulsive disorder (OCD)
- h. Personality disorders
- i. Post-traumatic stress disorder (PTSD)
- j. Schizophrenia and other psychotic disorders
- k. Substance use disorders, including drug addiction and

alcohol use disorder.

iv. Treatment for Mental Health Disorders:

Treatment for mental health disorders may include;

a. Medication:

Some mental illnesses respond well to medication such as antidepressants and antipsychotics.

b. Psychotherapy:

Talking to a mental health professional can help you work through the challenges of an illness and manage its symptoms. Psychotherapy can be in a one-to-one setting with a healthcare provider or a group setting.

c. Cognitive Behavioural Therapy (CBT)

This is a form of psychotherapy. It focuses on helping you change negative behaviors and thought patterns.

d. Alternative Therapies:

Some mental illnesses such as depression may improve

with alternative therapies. Examples include herbal remedies, massage, acupuncture, yoga and meditation.

e. **Brain Stimulation**

Therapies:

Not all disorders improve with medication. These treatments change the way nerves and other cells in your brain process chemicals and respond to stimuli. Examples include electroconvulsive therapy and transcranial magnetic stimulation (TMS) (my.clevelandclinic.org).

V. **How are Herbal Remedies Different from Psychiatric Drugs?**

Unlike psychiatric medication, most herbal remedies are;

- a. Based on long standing traditional use (not based on scientific research studies using clinical trials).
- b. Available to buy over the counter without a Doctor's prescription.
- c. Licensed under a different licensing scheme.
- d. Occasionally prepared (specifically for you based on your needs) by an herbal practitioner (ming.org.uk).

David Mschoulon M.D PHD, reviewed six of the most commonly used natural remedies for mental illness; St John's wort, Omega-3 fatty acids, S-adenosyl methionine (SAME); the sedative-hypnotics valerian and melatonin; nootropic ginkgo biloba. He outlined general indications for use, suggested doses, possible mechanism and adverse effects to give clinicians a good

summary of the benefits and inabilities of each.

Although there is growing evidence of efficacy and safety to support the use of these remedies, clinicians must be aware of the limitations of the evidence base and take that into account with all the other factors that contribute to clinical decision making.

Vi. **Herbal Remedies**

a. **ST. John's Wort.**

Early clinical studies in depressed samples conducted mostly in Europe, supports SJW as more effective than placebo and comparable to TCAS particularly for milder forms of depression. Some reports have supported the efficacy for seasonal affective disorder and for menopausal symptoms.

More recent studies have been more rigorous, including comparisons between SJW and SSRIS. In some studies, SJW performed comparably to fluoxetine and Sertraline. Other trials comparing SJW to sertraline, thioxetine and placebo have suggested no advantage for either medication in samples with moderately severe major depressive disorder (MDD) (7-10). However, upon closer scrutiny, the data from these studies suggest that remission rates may in fact be higher for SJW and that SJW may be more effective for individuals

with less severe depression.

SJW contains more than 150 chemicals some of which have been proposed as the main psychotropic ingredients. Hypericin and Hyperforin are the best understood of these and SJW preparations are typically standardized to one of these chemicals.

SJW's mechanism of action is probably multifactorial, involving an interaction with hypothalamus – pituitary – adrenal (HPA) axis that results in decreased cortisol production. Other proposed mechanisms include decreased serotonin neurotransmitter reuptake and direct serotonergic activity. SJW also has very slight monoamine oxidase inhibitor (MAOI) activity. Taking SJW does not require one to follow an MAOI diet but combinations of SJW and SSRI have resulted in serotonin syndrome. It is therefore not advisable to combine SJW with SSRIS.

Typical doses of SJW range from 300 to 1,800mg/day usually divided on a three times daily basis with 900mg/day considered as a standard therapeutic dose. Different manufacturing methods may produce variability in efficacy.

The most common side effects are dry mouth,

dizziness and constipation. Less common side effects include phototoxicity, cycling mark in patients with bipolar disorder and drug-drug interactions via the liver enzyme CYP-450-3A4. These interactions may result in decreased activity of warfarin, cyclosporine, oral contraceptives theophylline, digoxin and olanzapine and possibly others. Therefore, extreme caution is required for patients with HIV who are taking protease inhibitors as well as for patients with cancer who are receiving chemotherapy and transplant patients taking immunosuppressive drugs.

b. Omega-3 Fatty Acids

Omega-3 fatty acids are a family of poly-unsaturated lipids, including eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) derived primarily from fish and fish oil



preparations and alpha linolenic acid (ALA) which is derived from vegetable sources such as flaxseed oil. EPA or a combination of EPA and DHA have mostly been used as an adjuvant therapy for

unipolar depression but also as monotherapy.

Evidence for DHA therapy alone is more limited despite its important role in the development of the human brain. The optimal dose of omega-3 fatty acids remains unclear. Early studies have used doses as high as 9-10g/day, but more recent studies suggest benefit with as little as 1-2g/day. Mischoulon and colleagues suggest that omega-3s may be more effective in individuals who are overweight and/or have high levels of inflammatory markers.

Proposed mechanism of action of omega-3s with regards to psychiatric symptoms include inhibiting G-protein signal transduction, membrane stabilization and anti-inflammatory effects among others.

c. Melatonin: Melatonin is a hormone derived from serotonin in the pineal gland that helps to

regulate circadian rhythms. Melatonin appears to be an effective hypnotic that works fairly quickly upon administration. It may be more effective for generally healthy people with insomnia due to circadian disturbances as opposed to those with diagnosed psychiatric disorders. Melatonin may function by interaction with the suprachiasmatic nucleus to reset the circadian pacemaker and attenuate the alerting process and it may have a direct sedative effect.

There are about 20 clinical studies of melatonin for insomnia, including some with children and elderly individuals. Studies in children with sleep disorders and neurodevelopmental disorders have produced encouraging results. Recommended doses range widely from 0.5mg/day to 10mg/day, with commercial preparations reflecting this range. There is a long-acting version of melatonin dosed at 2mg/day that has been shown to be effective, particularly in older individuals.

Side effects from melatonin



appear to be few and benign. High doses may cause daytime sedation or confusion. Serious adverse effects, although rare, may include decreased fertility and sex drive, hypothermia and retina damage. Because of potential interactions with the HPA axis and thymus gland, melatonin may cause immunosuppression and should therefore be used with caution in individuals taking steroids or those who are HIV positive. In summary, melatonin is a promising hypnotic, generally accepted as safe and effective.

d. *Ginkgo Biloba:*

Ginkgo biloba, the seed from the ginkgo tree has been used in traditional Chinese medicine for thousands of years.

Ginkgo's primary indication is for improving cognitive function (including memory, abstract thinking and psychomotor function) in individuals with organic brain diseases such as Alzheimer's dementia.

Over 30 placebo-controlled double-blind trials in populations with dementia have been published. These



trials suggest that dementia improves with ginkgo treatment. These trials suggest that dementia improves with ginkgo treatment. Zhang and colleagues reviewed applications of ginkgo in Alzheimer's disease (AD) Vascular dementia, Mixed dementia, and Mild cognitive impairment (MCI). Overall Ginkgo demonstrated a dose-dependent improvement in cognition, neuropsychiatric symptoms and daily activities with optimal results at doses of 240mg/day. Tolerability was comparable to that of placebo, and its application for AD did particularly well, with fewer incidence of vertigo, tinnitus, angina pectoris and headache.

Ginkgo has been compared with synthetic nootropic drugs. Cholinesterase inhibitors are somewhat more effective but not as well tolerated and may be combined with ginkgo. *Ginkgo*'s strongest advantage may lie in its lower incidence of side effects, consequently, many physicians have favored ginkgo biloba over the synthetic nootropics as a first line treatment. *Ginkgo* appears to have no clear preventive effects on dementia.

Ginkgo contains many active components such as flavonoids (quercetin, kaemferol, and isorhamnetin). Also terpene lactones (ginkgolides,

bilobalide, and ginkgolic acids. It appears to have multiple mechanisms of actions. It is thought to stimulate and protect functional nerve cells from hypoxia and ischemia and free radical damage and it may stabilize neuronal membrane. Other functions may include preservation of muscarinic choline receptors and alpha-2 adrenergic receptors and promotion of choline uptake in the hippocampus. The suggested dose of ginkgo is 120-240mg/day, dosed two to three times a day.

Side effects may include mild G.I upset, headache, irritability, dizziness or allergic reactions. There are no established interactions with other drugs but caution is recommended with patients who have bleeding disorders or are taking anticoagulant medications such as Coumadin, because ginkgo inhibits platelet - activating factor (PAF).

e. *Ashwagandha*

Ashwagandha or *Withania Somnifera* is among a group of herbs called 'Adaptogens'. Adaptogens affect systems and hormones in the body that regulate a person's stress response. *Ashwagandha* has



a long history of use in traditional Indian, or Ayurvedic medicine.

A small 2019 clinical trial investigated the efficacy of Ashwagandha for stress and anxiety. The 8-week study involved 58 participants with perceived stress. Each participant randomly received one of three treatments Ashwagandha extract at doses of either 250mg per day or 600mg per day or a placebo. The participants who took Ashwagandha showed less of the stress hormone CORTISOL than those in the placebo group. They also experienced improved sleep quality. People can take Ashwagandha as a tablet or in liquid tincture form.

f. Chamomile

Chamomile is a flowering herb similar in appearance to a daisy. There are two types of Chamomile that people can use medicinally; Roman Chamomile in the following forms to help

relieve stress and anxiety;

- I. Tea
- ii. Extract
- iii. Tablet
- iv. Skin Cream

A 2016 Clinical trial investigated the efficacy and safety of Chamomile as a long-term treatment for generalized anxiety disorder (GAD). All 93 participants received 1,500mg of Chamomile daily for 12 weeks. Some then continued taking chamomile for the next 26 weeks, while the remainder switched to a placebo.

Researchers observed that those participants who continued taking Chamomile were no less likely to experience a relapse of GAD symptoms than those switched to placebo. However, when relapse did occur, the

symptoms were less severe. Some people may experience allergic reactions to Chamomile, particularly if they experience reactions to the following plants.

- I. Ragweed
- ii. Chrysanthemums
- iii. Marigolds
- iv. Daisies

Chamomile may interact with certain drugs, including the blood thinner Warfarin, and the antirejection drug cyclosporine. Other medically reviewed herbs for anxiety by the same researcher include Lavender, Gaphmia glauca, Passion flower and Valerian.



SPECIES	FAMILY	VERNACULAR/ COMMON NAME	PART USED (MODE OF USE)	APPLICATIONS
Achirantes aspera Lii	Amaranthaceae	Abe	Twig (decoction)	Rapid dog bite
Allium Sativum Lii	Liliaceae	Tabasi Ogwu, Garlic	Garlic is added to canthium glabriforum (infusion) leaves.	Hypnotic and sedative
Bixa Orellana L.	Bixaceae	Ose Uta	Seeds (infusion)	Sorcery, Spiritual madness.
Boerhavia diffusa L.	Nyctaginaceae	Ara, hogweed	Leaves, Stem bark (decoction)	Insomnia, Amnesia

<i>Boswellia dalzielii</i>	Burseraceae	Otiti	Leaves, root bark decoction	'Normal' madness.
<i>Caesalpinia bonduc</i> (Lii) Roxb.	Fabaceae	Senna tea	Leaves (infusion)	Purgative
<i>Cidigyna</i> L.	Fabaceae	Senna	Root bark decoction	Senile dementia
<i>Carica papaya</i> L. Var. <i>Indica</i> L.	Caricaceae	Okwulu beke, Pawpaw	Male plant- inflorescences and ginger rhizomes (decoction)	Amnesia Insomnia
<i>Canthium glabriflorum</i> Lam.	Rubiaceae		Root-bark, leaves (decoction)	Depression [psychosomatic cases].
<i>Cassia augustisepala</i>	Fabaceae	Leaves (infusion)	Leaves (infusion)	schizophrenia
<i>Cissampelos mucronata</i> A. Rich	Menispermaceae		Leaf, Stem bark, root (decoction).	Nervousness [causes relaxation}
<i>C. Ocvariensis</i> Beauv. Ex DC	menispermaceae	Paireira brava	Leaf, root (decoction)	Depression
<i>Datira stramonium</i> L.	Solanaceae	Devil eggplant, anarandi muo.	Leaves infusion	Schizophrenia (sedative effect)
<i>Erythrina senegalensis</i> DC	Fabaceae		Ground dried seeds, leaves (infusion)	Purgative
<i>Euphorbia hotal</i>	euphorbiaceae	Ogwu afo, Asthma herb	Stem exudate	Purgative, (normal) madness, senile dementia.
<i>Khaya senegalensis</i> (Desv.) Juss	Meliaceae	Dry zone mahogany cail cedrat	Leaf, stem bark decoction	Depression
<i>Kolobopetalium auriculatum</i> Ergl.	menispermaceae	Ubele, Uba	Seeds, leaf infusion	Insomnia (when taken in higher dose causes depression.
<i>Myristica fragrans</i> Houst	Myristicaceae	Efuru, Nutmeg	Dried seeds (roasted and added to meal)	Depression (stimulates CNS and causes relaxation).
<i>Pauridiantha viridiflora</i> Schweinf ex Hiern	Rubiaceae	Leaves, root-bark (infusion, inhalation of steam bath		Insomnia, Amnesia, Induces hypnotic effect
<i>Phyllanthus discoideus</i> (Baill)	Euphorbiacae	Uze	Leaf, Stem infusion	Moon madness, depression.

Passiflora foetida L.	Passifloraceae	Ogwu agwo, passion flower	Fruits, leaves infusion	Hysteria (5-10) table spoonful induce a hypnotic and sedative effect
Psidium guajava L.	Mybaceae	Gova, Guava	Leaves, Stem, fruits infusion	Sorcery, Spiritual madness
Strychnos afzelili	Loganiaceae	Ufe	Stem bark	'Normal' madness induces sleep
Tetrapleura tetraptera (Schum et Thonn.)	Fabaceae Mimosoidea			

CONCLUSION:

Natural remedies remain a very popular alternative or complement for individuals with psychiatric disorders. Therefore, it is important for practitioners to be reasonably well versed in their use, particularly with regard to safety. The best candidates for natural treatments include patients with mild illness, who would be unlikely to have a catastrophic outcome if the treatment did not work. Likewise, patients with refractory illness who have not benefitted from approved treatments (or suffered from side effects) may have nothing to lose by trying a natural remedy, under supervision by a physician.

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PUBLIC HEALTH

SUBSTANCE USE DISORDER, WITHDRAWAL SYMPTOMS AND THEIR EFFECTS ON MENTAL HEALTH

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Drug abuse is both a universal health and social problem, with distinct conditions and problems that vary from place to place. A yearly report of the United Nations Office on Drugs and Crime (UNODC) reveals that, globally, over 246 million people used drugs illicitly, with 27 million people having drug use disorders and about 400,000 deaths resulting from drug use.

A study on perception of drug abuse amongst Nigerian undergraduates, identified dependence and addiction as some of the major consequences of drug abuse, characterized by compulsive drug craving seeking behaviors, that persist even in the face of negative consequences (Oshikoya and Alli, 2006; Oshodi, Aina, Onajole, 2010).

The 2018 UNODC Drug Use Report in Nigeria crystallizes the verifiable facts. South-West zone had a drug use prevalence of 22.4%, followed by the South-South (16.6%), South-East (13.8%), North-East (13.6%), North-West (12%) and North-Central (10%).

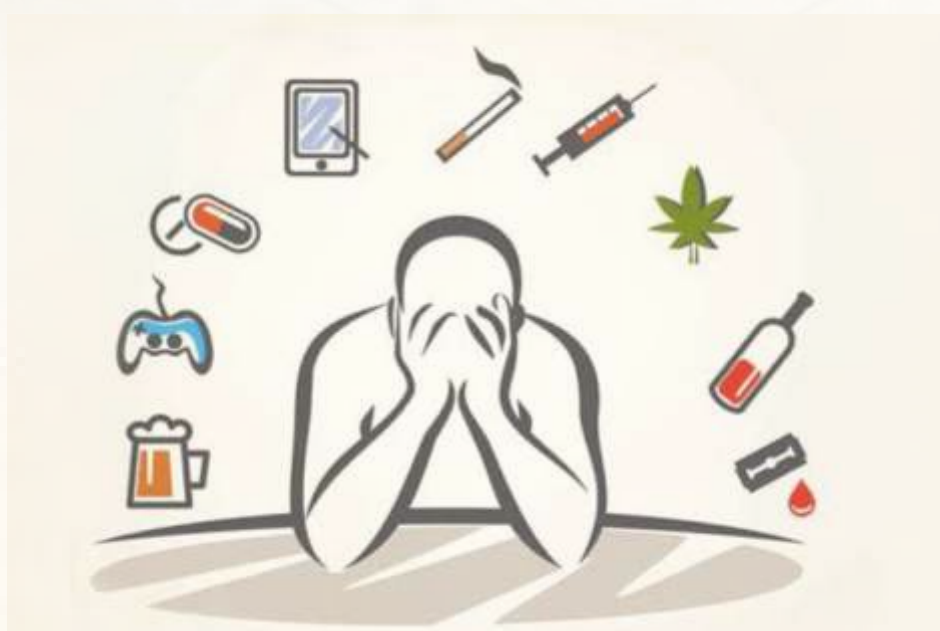
The consequence of withdrawal from substance use is also as complex as its use. The fear of withdrawal symptoms has kept some users permanently hooked on drugs with its attendant effects. Although, there exists a profound connection between substance use disorder and mental illness, researchers have not been able to agree on which one always lead to the other.

According to Oregon Recovery Trail, a 'rehabilitation' centre in USA, "people who suffer from mood or anxiety disorders are almost twice as likely to also

suffer from a substance abuse disorder, and people who suffer from substance abuse disorders are approximately twice as likely to also suffer from a mood or anxiety disorder."

While Chronic use of Psychoactive substances such as cannabis, stimulants, opioids and alcohol may change an individual's brain function and structure which can result in cognitive and behavioural changes, researchers have suggested whether there are actually underlying mental disorders in people who venture





into substance use despite the stark consequences.

In the year 2020, a study conducted by a group of researchers among 1970 young outpatients in 11 cities across Sweden, aimed to analyze self-reported mental health problems among young people receiving outpatient treatment for substance use problems, indicated that, “self-reported mental health problems were common among the young people in the study.

A relatively large percentage of the total group (34–54%) reported problems such as concentration difficulties, sleeping difficulties, anxiety and depression. At the same time, many of the young people did not report any symptoms and only a small group, about 20%, reported diagnosed mental health disorders. The study noted that the majority of young people with drug and alcohol problems suffer from concurrent mental health problems, referred to as co-occurring disorders or

comorbidity.

Externalizing disorders such as Conduct Disorder (CD) and Attention Deficit Hyperactivity Disorder (ADHD) appear to be the most common mental health problems, but internalizing disorders such as depression, dysthymia and anxiety also commonly occur.” The study concluded that “the link between more severe drug problems and mental health problems points to the importance of exploring this relationship in treatment.

A multidisciplinary approach, in which co-occurring problems can be addressed simultaneously, may be the best treatment form for many young people with drug problems.”

In conclusion, while more study is needed to establish this connection, healthcare professionals, regulatory agencies and other stakeholders on substance use disorder must recognize the interwoven linkage between mental health and

substance use. Above all, this will help them to approach every patient differently as well as influence the choice of the treatment plan.

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Topic C

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