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PARAPHILIA AND MAJOR DEPRESSIVE DISORDERS: PREVALENCE AND PATHOGENESIS

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REVIEW **OPEN ACCESS**

ABSTRACT

Introduction - Paraphilia disorders are defined as an abnormal intense sexual deviant followed by behaviors to fulfill fierce sexual erotic activities. Major depressive disorder (MDD) is a mood disorder marked by the appearance of a depressed mood, decreased interest, poor cognitive function, and vegetative symptoms including sleep or eating disorders. There is a study about the prevalence of paraphilia in the US, 15,9%. Meanwhile, there is about 6,1% of the prevalence of depressive disorders in Indonesia. According to DSM-5, Paraphilias, and paraphilia-related disorders, depressive disorders are the most frequent comorbid axis I diagnoses with a lifetime prevalence of life by 56%. Based on these case numbers, this study aims to discuss the correlation between these two events.
Methods - Researchers used several journals and textbooks discussing the prevalence and pathogenesis of paraphilia and major depressive disorders; and the correlation between these two disorders.
Results - Paraphilias are rarely diagnosed in clinical settings because many cases of paraphilia are related to illegal and criminal acts (such as sexual harassment), and reporting methods are unreliable, meanwhile depression is ubiquitous in both high and low-income countries. This shows that any government needs to be aware of the effects of depressive disorders. Those who have not sought treatment are still high, amounting to 87 to 91% of depressive disorders that have not sought treatment.
Discuss - There is a significant correlation between paraphilia and major depressive disorder, MDD is one of the paraphilia-related disorders comorbid axis I diagnosis with a lifespan prevalence of 56%. From the pathogenesis, monoamine neurotransmitters dopamine, norepinephrine, and serotonin serve a modulatory role in human sexual motivation, appetitive, and consummatory behavior.
Conclusion - In pathogenesis, there's a degradation in function, amount, and production of neurotransmitter monoamine, dopamine, norepinephrine, and serotonin that cause the person with paraphilia usually show symptoms such as mood changes, decreased interest, depression, decreased cognitive function, and the appearance of vegetative-related symptoms such as impaired appetite or sleep activity.

Keywords: paraphilias, depression, pathogenesis.

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INTRODUCTION

Paraphilia (also known as sexual perversion and deviation) is a biomedical word for defining sexual arousal by objects, people, or situations as abnormal with a sense of pleasure in unusual and extreme conditions. A few types of paraphilia disorder are pedophilic disorder, voyeuristic disorder, exhibitionistic disorder, sexual masochism, sexual sadism, frotteurism disorder, and fetishistic disorder.[1,2]

There is study show only very little information. This occurs within a paraphilia desire that has been obtained from nonclinical patients. In 2016 Dawson et, al; took a sample of young adults and college students, and it was found that about 52% had an interest in voyeurism, and 28% had an interest in fetishism. The latest study was conducted to look at how specific desires and experiences of behavior from a population sample represent the general population. The amount of sample included 1,040 people classified by ethnicity, sex, age, religion, education level, and location of residence. The researchers found that almost half of the study's population stated they were experiencing more than one paraphilic category. About a third of this population was interested in the hobby at least once. Specifically, narcissism, lust, voyeurism, and masochism had a prevalence of 15.9%, with interest in both men and women. The level of interest in masochism and fetishism did not show a statistically significant difference between men and women. Based on research, it is found that the most common paraphilic category in men is fetishism and voyeurism.[3,4]

Depressive condition is correlated to the massive feelings of sadness and grief. Still, it does not subside when the external cause of these emotions vanishes, disproportionate to their cause. Severe classic depressive condition seldom has external triggers. However, it is difficult to make a certain distinction between depression and those disorders without triggering psychosocial events. The prevalence rate of depression in Americans is over 20% in females and over 12% in males. Few researchers state a specific definition of major depression, and they call it melancholy or vital depression.[10]

Major depressive disorder episodes last at least two weeks and are accompanied by substantial mood changes, interest, and enjoyment, as well as alterations in cognitive and vegetative signs. MDD is twice as frequent in women as it is in men, and it affects around 6% of the adult population globally each year. According to years of life experience with a disability, MDD is the second most common chronic burden illness among all medical disorders. MDD is also linked to an increased risk of non - communicable illnesses including heart disease, stroke, and diabetes, increasing the disease burden.[6] Disorders and symptoms of depression are identified in paraphilic sex offenders, nonoffender paraphiliacs, and men with paraphilia-related disorders. The DSM-5 notes that depressive symptoms can appear in people with paraphilias disorder and may be accompanied by increased frequency and intensity of paraphilic behavior. Due to the increasing number of people diagnosed with paraphilia and several new cases of rape, we need to know about the correlation between these two disorders.[7]

METHOD

The author used several journals and textbooks that discuss the prevalence and pathogenesis of paraphilia and major depressive disorders; and the correlation between these two disorders.

RESULT

Prevalence of paraphilia disorders

Paraphilias are rarely diagnosed in clinical settings because many cases of paraphilia are related to illegal and criminal acts (such as sexual harassment), and reporting methods are unreliable. The big commercial market in pornography and paraphilic equipment shows a high prevalence. Pedophilia, voyeurism, and exhibitionism were the behaviors most often observed within the clinic in patients receiving treatment for paraphilias. Sadism and sexual masochism are far less prevalent. Nearly half of the patients who are detained in the health center for paraphilia therapy are married. In 2011, Ahlers et al. discovered that 64% of men in the community had a sexual preference for at least one paraphilic activity, with paraphilic dreams being reported more commonly than conduct. Vogueurism and lust seem to be the most popular dreams, followed by sadism, masochism, and fetishism. Pedophilia, transgenderism, and showing off are the fantasies that appear the least frequently. However, due to a lack of study, it is impossible to say if the proportions of imagination and conduct among females follow the same trends as those stated above. Masochism is the most frequent type of paraphilia among women, according to data on imagination and engagement in sexual culture.[8]

In DSM-5, paraphilia means "An intense and persistent sexual desire aside from sexual interest in genital arousal or touching planned with a phenotypically normal, physiologically mature, and acceptable human partner," according to DSM-5.[9] In DSM-5, and there are several types of paraphilia disorders (Table 1). According to DSM-5, to diagnose paraphilia, there is “The Psychosexual Evaluation” that the psychiatrist has to perform (Table 2). [9]

Major Depressive Disorders

The World Health Organization (WHO, 2017) states that depression is one of the most frequent mental disorders with the highest prevalence. More than 322 million people worldwide (4.4% of the population) with depression disorders, and almost half of them come from the Southeast Asia and West Pacific regions. In Indonesia, data from Riskesdas in 2018 the prevalence of depression was 6.1%, and in Surabaya, it was 10.8%. Depression is ubiquitous in both high and low-income countries. This shows that any government needs to be aware of the effects of depressive disorders. Meanwhile, those who have not sought treatment are still high, amounting to 87 to 91% of depressive disorders that have not sought treatment.[5] In DSM-5, MDD is classified as a depressive disorder. According to DSM-5, diagnostic criteria can be seen in Table 3.

DISCUSS

Pathogenesis of Paraphilia and Major Depressive Disorders

Paraphilia

In general, the psychopathological picture of paraphilic behavior consists of obsessive disorders and affective disorders that immediately precede dissociative disorders. Clinical signs and neurochemical features are in a complex correlation relationship. Obsessive disorders are associated with the content of serotonin, norepinephrine, and affective and dissociative phenomena with the level of central dopamine. The involvement of norepinephrine in the development of paraphilia consisting of obsessive-compulsive disorders, has been studied to a lesser extent, and only one publication was found that deals with the possible involvement of the noradrenergic system in OCD. In any case, studies on the pharmacotherapy of OCD using duloxetine, which inhibits the reuptake of serotonin and norepinephrine, suggest a role for norepinephrine in the genesis of OCD (paraphilia-related disorders). In the aspect of the nervous system's activity, one of the great interests is the serotonergic system, which controls motor acts, and systems of positive reinforcement, plays a significant role in eating, sexual, and exploratory behavior, and participates in the formation of affective components of behavioral actions. Therefore, it is not surprising that a reduced concentration of 5-hydroxy indole acetic acid, the primary metabolite of serotonin, is a persistent companion of increased aggressiveness, and obsessive and compulsive states,

including paraphilias. In some cases of paraphilia, there is a reduced concentration of DOPAA, which directly reflects the function of central dopamine. The decrease in the activity of the dopaminergic system below the critical level can affect motivated behavior. Dysfunction of the frontal regions, in turn, leads to disturbances in cortical-subcortical interactions (in particular, with the structures of the limbic system and the reticular formation), which causes a decrease in the level of wakefulness and impairment of consciousness in the form of an imbalance in Spatio-temporal relationships. This may explain the fact that there is a high frequency of the realization of paraphilic attraction against the background of altered states of consciousness, accompanied by dissociative phenomena that are associated with the level of DOPAA. Thus, the decrease in the dopaminergic system activity probably determines not only the stereotyping of behavior but also the psychopathology. Summing up, it should be added that lately, dopamine has been assigned a significant role in forming not only paraphilic disorder but also a wide range of addictions. In the literature, dopamine is called the "hormone of pleasure and happiness," When its concentration decreases, human activity is aimed at stimulating its production peculiarity of paraphilic realization.[11]

Major Depressive Disorder

The midbrain and brainstem nuclei and most of the large areas throughout the brain consist of serotonergic, dopaminergic, and noradrenergic neurons. This anatomy presents that the monoaminergic system regulates various brain functions such as happiness, attention, mood, appetite, sleep, and cognition. Almost every molecule that restricts monoamine reuptake leads to an increase in monoamine concentration inside the synaptic cleft and has the potential to be a therapeutically effective antidepressant. Restriction of the MAO enzyme, which may cause a surge in monoamine availability in presynaptic neurons, may have an antidepressant function. The monoamine deficit hypothesis, based on this data, is the most pharmacologically applicable theory of depression. The most studied neurotransmitter in depression is serotonin. Studies utilizing tryptophan deprivation, which inhibits central serotonin synthesis, provide the most compelling evidence for aberrant decreases in central serotonergic system function. Elevated brain metabolism within the ventromedial prefrontal cortex and subcortical brain areas might facilitate such a reduction in depressive symptoms in persons at increased risk of depression. Serotonin receptor anomalies have also been linked to depression, with evidence pointing to serotonin-1A receptors, which control serotonin activity. The availability of such receptors is reduced in various brain locations of MDD patients. This illness, on the other hand, is not exclusive to MDD. Nonetheless, it's frequently identified in people with anxiety disorders and temporal lobe epilepsy, probably contributing to its high comorbidity. Evidence of decreased norepinephrine metabolism, increased tyrosine hydroxylase activity, and reduced density of the norepinephrine transporter at the locus coeruleus in depressed patients has led to the hypothesis that central noradrenergic system dysfunction plays a role in the pathophysiology of MDD. Additionally, post-mortem depression caused a decrease in the number of neurons in the locus coeruleus, an increase in the density of alpha-2 adrenergic receptors, and a reduction in the thickness of alpha-1 adrenergic receptors in the brains of suicide victims. While the neurobiology of depression is thought to be dominated by serotonin and norepinephrine, there is growing interest in the involvement of dopamine. In placebo-controlled investigations of MDD, dopamine receptor agonists (e.g., pramipexole) and dopamine reuptake inhibitors (e.g., nomifensine) exhibit antidepressant effects. Dopamine metabolite levels in CSF and jugular venous plasma are consistently lower in depression, indicating impaired dopamine turnover. In MDD, dopamine transporter binding and uptake are diminished, which corresponds to decreased dopamine neurotransmission.[12]

Correlation Between Paraphilia and Major Depressive Disorders

Based on several studies, there is a significant correlation between paraphilia and Major depressive disorder. In 2002, Kafka et al. conducted a trial on 120 patients and found that about 47 patients with comorbid MDD. According to DSM-5, MDD is one of the paraphilia-related disorders comorbid axis I diagnosis with a lifespan prevalence of 56% (Table 4).[9,13]

From the pathogenesis, monoamine neurotransmitters dopamine, norepinephrine, and serotonin serve a modulatory role in human sexual motivation, appetitive, and consummatory behavior. People with paraphilia generally experience disturbances in monoamine neurotransmitters, dopamine, serotonin, and norepinephrine. There is degradation, dysfunction, or decreased production of the above neurotransmitters. The decrease in dopamine is the most critical indication of the occurrence of major depressive disorder. Quoting the nowadays nosological term of socially deviant impulse regulation, it should be noted that human research has permanently indicated the relation between decreased central serotonin neurotransmission and the emergence of repressed behaviors, including impulsive behavior and aggression. Central serotonergic disorders are also among some significant depressive disorders and anxiety disorders. there is a task of dopamine within the development of affective disorders in paraphilia. It was previously noted that its deficiency is said to be the pathogenesis of some kinds of depression. The relationship between mixed affective disorders and the level of DOPAA, determined in the present study, gives grounds to suggest the role of inactivation of the dopaminergic system in emotional, mood, and depressive disorders. [14]

Table 1. DSM-5 types of paraphilia disorders.[9]

Disorders	Atypical Sexual Interest
Voyeuristic Disorder	Seeing someone who isn't supposed to be naked, undressed, or sexually exploited behavior.
Exhibitionistic Disorder	Showing genitals to strangers
Frotteurism disorder	holding or touching people without permission
Sexual Masochism disorder	Likes to be humiliated, beaten, tied up, or made to suffer as if it were pleasure
Sexual sadism disorder	physical or psychological actions that make others suffer
Pedophilic disorder	Sexual act on Prepubescent child
Fetishistic disorder	Non-living objects or nongenital body parts
Transvestic disorder	Crossdresser

Table 2. The Psychosexual Evaluation that a psychiatrist has to perform[9]

Category	Description
Clinical interview	Subjective data collection from the individual, family, and sexual partners: psychiatric review records, police reports
Sexual history	Exposure to sexual behavior in childhood, sexual education, age of awareness of sexual interest, the emergence of masturbation, history of sexual abuse (perpetrator)
Sexual Behavior	Sexual attraction, sexual partners, triggers to sexual behavior, emotions associated with sexual behaviors, use of pornography, use of sexual aids (drugs, dildos), impairment related to sexual behavior, amount of time spent in sexualized behavior
Paraphilic behavior	See one by one the characteristics of paraphilia
Formal Testing	Objective testing of sexual interest
Abel's assessment of sexual interest	Determine sexual interest by measuring the amount of time an individual looks at images
Polygraphy	Utilize physiologic reaction to determine the veracity of the subject, commonly used to obtain an individual's sexual history (use of pornography, interest in children, sexual touching)
Penile plethysmography	Determine sexual interest by measuring penile tumescence to various audio and/or visual stimuli
Actual tools: static-99; sex offender risk appraisal guide (SORAG)	Determine the risk of committing a future sexual offense based on statistically significant risk factors

Table 3. DSM-5 criteria of MDD[9]

No	Criteria
A.	At least five (or more) of the following symptoms have been occurring during the same two-week period and constitute a change from past functioning. At least one of the symptoms is either (1) depressed mood or (2) lack of interest or pleasure. *(Note: Symptoms that are obviously linked to another medical problem should not be included.)* **1)** Depressed mood for the majority of the day, practically each day, as evidenced by either subjective report (e.g., feels sad, lonely, hopeless) or third-party observation (e.g., appears tearful). **2)** For the majority of the day, nearly a day, there is a significant reduction in interest or pleasure in all, or most, activities (as indicated by each of two subjective description or observation). **3)** Sudden losing weight or gain (e.g., a shift of much more over 5% of body mass in a month) even while not dieting, or a reduce or rise in hunger almost every day. *(Note: Failure to acquire weight as predicted in youngsters is a factor.)* **4)** Insomnia or hypersomnia almost each day. **5)** Psychomotor excitation of the mind or regression of the mind (observable by others, not merely subjective feelings of restlessness or being slowed down).

	6) Fatigue or loss of energy almost everyday. **7)** Almost every day (not only self-reproach or guilt over being unwell), feelings of worthlessness or excessive or inappropriate guilt (which may be illusory). **8)** Mostly every day, may experience a loss of capacity to think or focus, as well as indecisiveness (either by subjective description or as observed by others). **9)** Suicidal ideation (not only the fear of death), multiple suicide attempts without a specific plan, suicidal conduct, or a suicide plot are all examples of suicidal behavior.
B.	Clinically severe distress or disability in social, intellectual, or other crucial functional impairment is caused by the symptoms.
C.	The incident is not caused by the physiological effects of a chemical or a medical problem. *Note: Criteria A and C denote a major depressive episode.* *Note: The feeling of intense sadness, contemplation about the loss, insomnia, poor appetite, and weight loss noted in Criterion A, which mimic a depressive episode, may follow a response to a major loss (e.g., grief, bankruptcy, losses from a natural disaster, a severe medical illness or disability). Although such symptoms may be reasonable or reasonable in light of the loss, the existence of a severe depressive episode, in addition to the typical response to a large loss, should be taken into account. This option invariably necessitates the use of clinical judgment based on the individual's past and, as a result, the cultural norms for expressing grief in the context of loss.*
D.	Schizoaffective disease, schizophrenia, schizophreniform disorder, delusional disorder, or other schizophrenia spectrum as well as other psychotic diseases do not better understand the incidence of the major depressive episode.
E.	There was never a manic or hypomanic incident in my life. *Note: If most of the manic or hypomanic occurrences are caused by drugs or are due to the physiological consequences of another medical disease, this exclusion does not applicable.*

Table 4. Prevalence of axis I comorbidity in paraphilic sexual offenders[9]

Axis I diagnosis	Lifetime prevalence (%)
Major Depression	30-56
Bipolar Disorder	42-52
Dysthymic Disorder	28-70
Social Phobia	13-53
Generalized anxiety disorder	12
Panic disorder	24
ADHD	7-77
Conduct disorder	23-94
Alcohol abuse	10-55

CONCLUSION

From the research result, we can conclude a relationship between paraphilia and major depressive disorders. Furthermore, we can see from the prevalence there is a conclusion that major depressive disorder is one of the most common axes one comorbid paraphilia-related disorders. In pathogenesis, there is a degradation in function, amount, and production of neurotransmitters monoamine, dopamine, norepinephrine, and serotonin that cause the person with paraphilia usually show symptoms such as mood changes, decreased interest, depression, decreased cognitive function, and appearance of vegetative-related symptoms such as impaired appetite or sleep activity.

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