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Depressive Disorders in Child and Adolescent Psychiatry: Epidemiology, Risk Factors, and Clinical Manifestations in Moroccan Children and Adolescents

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Abstract **Original Research Article**

Depression in children and adolescents is often under-diagnosed due to its complex and varied clinical presentation. This article analyzes the epidemiological characteristics, risk factors and clinical manifestations of depression in this population, through a retrospective study conducted at the child psychiatry department of the Abderrahim Harouchi mother-child hospital of the University Hospital Center Ibn Rochd in Casablanca- Morocco over two years. Out of 8720 new consultants, 820 presented with depressive elements, i.e. a prevalence of 9.4%. The main symptoms included psychomotor disorders, anhedonia, sleep disorders and suicidal ideation. The main risk factors were psychiatric family history in 59.3% of patients, and personal organic history and comorbidities in 11.8%. The clinical complexity of depression in children and adolescents underscores the importance of an individualized treatment approach. This study highlights the importance of early detection and appropriate management of depression in children and adolescents.

Keywords: Depression, risk factor, child psychiatry, mental health, child, adolescent.

I - INTRODUCTION

Depression in children and adolescents is often under-diagnosed due to its varied and heterogeneous clinical presentation, which makes diagnosis complex. The polymorphism of symptomatology makes it different from adult depression in many respects [1, 2]. Today, the existence of depression in children and in adolescents is irrefutable. The prevalence of depressive disorders in children is low because it is often unrecognized and under-diagnosed (< 1% in most studies) [3], with no difference between girls and boys, and increases from puberty onwards, reaching 4-5% in adolescence, with girls predominating (sex ratio 2/1) [4, 5]. Depression is a major risk factor for suicide [6], has an impact on education and social interaction [7, 8], and increases the risk of tobacco and other drug use, as well as obesity [9, 10]. The clinical expression of depression varies with age, but also with the level of affective and cognitive maturation. The central affect remains sadness, but this is often masked by other symptoms, or even denied by adolescents [1, 2]. It's important to remember that there is a certain amount of developmental depressivity, which has an organizing function in the development of children and adolescents, to be distinguished from frank depression or a major depressive episode. In addition, bouts of sadness that punctuate childhood and adolescence, depending on life events, are normal affective states [1, 2, 11]. In this study, we propose to analyze the epidemiological characteristics, highlight the main clinical manifestations of depression in children and adolescents, and identify the main risk factors for early and appropriate therapeutic management.

II- PATIENTS AND METHODS

Our work concerned new consultants to the university department of child psychiatry at the Abderrahim Harouchi mother-child hospital of the university hospital center Ibn Rochd in Casablanca-Morocco, over a period extending from August 2021 to

August 2023. This was a retrospective, descriptive and analytical study based on patients' medical records. The information collected in the files included epidemiological data, clinical and therapeutic. The inclusion criteria allowed us to select children and adolescents aged 0-18, consulted for symptoms of depression.

III- RESULTS

The department welcomed a total of 8720 new child and adolescent consultants, 820 of whom presented with depressive symptoms. The prevalence of depressive symptoms among new referrals was thus 9.4%. Of these 820 patients, 48.1% were male and 51.9% female, with an average age of 10.97 years, ranging from 4 to 18 years: most were grandchildren, especially pre-adolescents (380), followed by 322 adolescents and 118 grandchildren. Personal history: 11.8% of patients had organic comorbidities such as diabetes in 2.8% of cases, chronic inflammatory bowel disease (IBD) in 2.8% of cases, hematological malignancies in 1.4% of cases, asthma in 5.6% of cases, and chronic rheumatic diseases in 2.8% of cases. 10.6% of our patients had a surgical history, with tonsillectomy in 2.8% of cases, removal of adenoids in 2.4% of cases, tympanoplasty in 2.4% of cases, visceral surgery in 2.5% of cases, and orthopedic surgery in 0.3% of cases. 8.1% of patients reported toxic habits. Family psychiatric history: 59.3% of our patients had a family psychiatric history, including 39% with parental depression, 12.1% with parental anxiety and 8.1% with psychotic disorder. A family history of toxicity was found in 16.3% of cases of the population studied. The main clinical manifestations found in our patients are presented as follows on Figure 1.

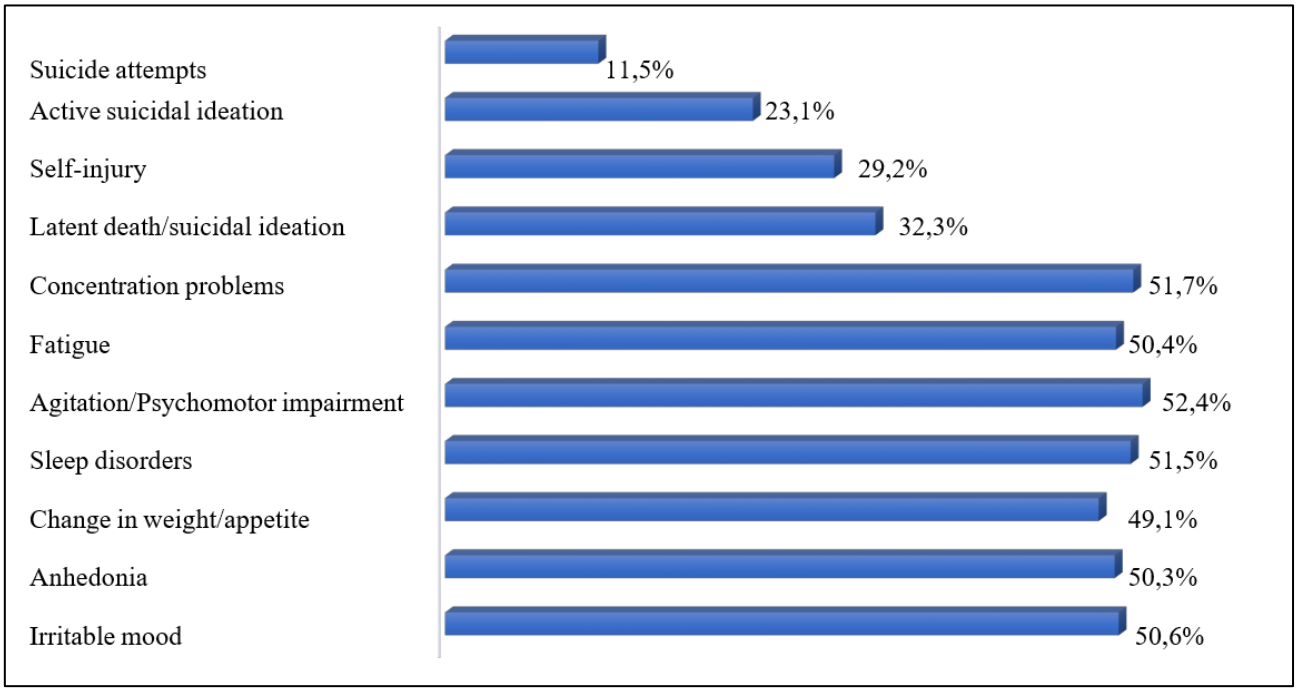

Figure 1: Main clinical manifestations of depression in children and adolescents

Some of our patients also presented with psychotic manifestations in the form of auditory and visual hallucinations in 10.6% of cases, and mood-congruent delusions in 6.4%. The median length of time between the initial onset of symptoms and the request for consultation was 11.9 months, ranging from 2 weeks to 4 years. The diagnostic entities retained according to DSM 5 criteria were mainly characterized depressive disorder (characterized by recurrent major depressive episodes, including symptoms such as sadness, loss of interest or pleasure, disturbed sleep, appetite and concentration); the persistent depressive disorder (characterized by chronic depression with depressive symptoms present most of the time for at least two years); premenstrual dysphoric disorder (a syndrome characterized by recurrent and severe depressive, anxiety and/or dysphoric symptoms occurring before menstruation); disruptive disorder with emotional dysregulation (characterized by outbursts of anger disproportionate to the situation, persistent irritability and behavioral disorders) . The main results are shown in Figure 2.

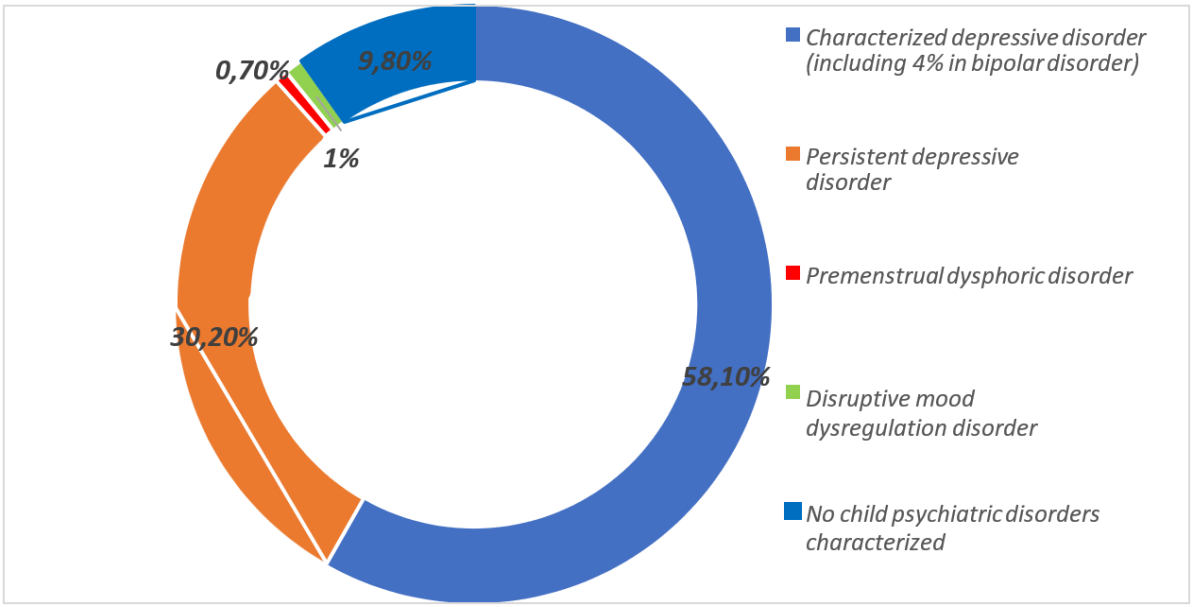

Figure 2: Diagnostic entities according to DSM 5 criteria

The intensity of the disorder was considered mild in 44.2% of cases (i.e. depressive symptoms are present but do not seriously interfere with daily functioning), moderate in 31% of cases (i.e. depressive symptoms are present and significantly impair daily functioning), and severe in 24.8% of cases (i.e. depressive symptoms are intense, leading to major disruption of daily functioning). Certain comorbidities were found in our patients (figure 3).

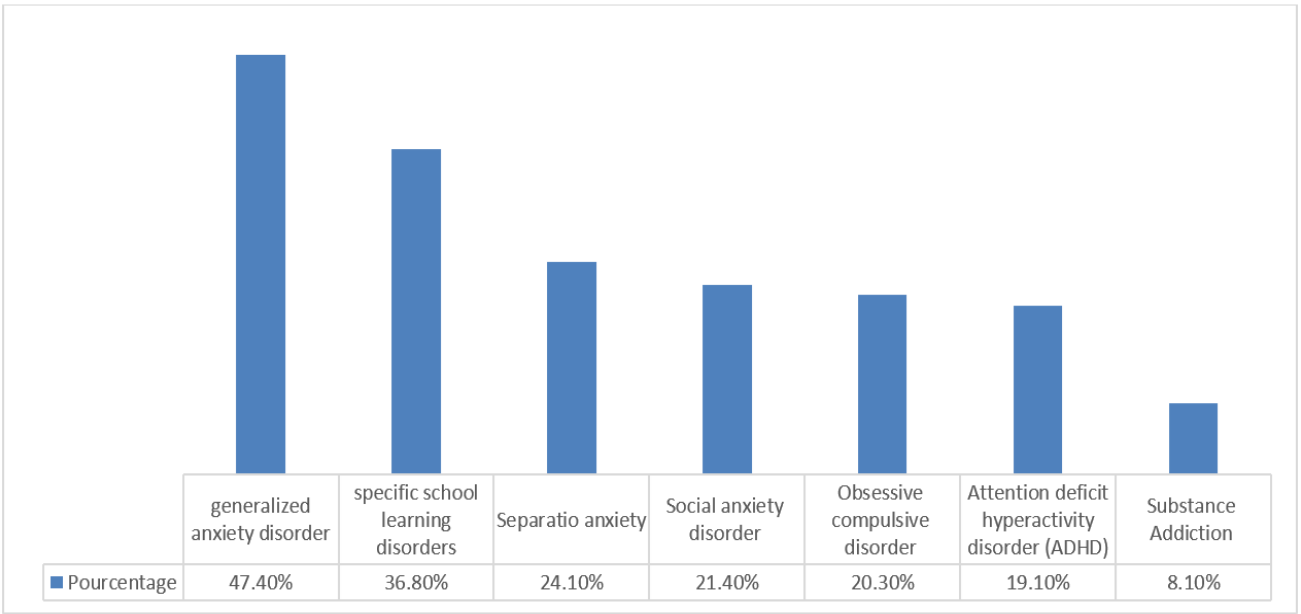

Figure 3: Main child psychiatric comorbidities found

Outpatient care was provided in 80.3% of cases, while 19.7% of our patients required hospitalization in a child psychiatry unit. 51% of patients received psychotherapy alone, and 49% received pharmacological treatment in combination with psychotherapy: based on serotonin reuptake inhibitor antidepressants (SSRIs: Fluoxetine, Setraline, Escitalopram), atypical antipsychotics prescribed for psychotic symptoms (olanzapine, quetiapine, risperidone), anxiolytics for severe symptoms (benzodiazepines) or mood stabilizers for diagnosed bipolar disorder (lithium, sodium valproate, carbamazepine) (figure 4).

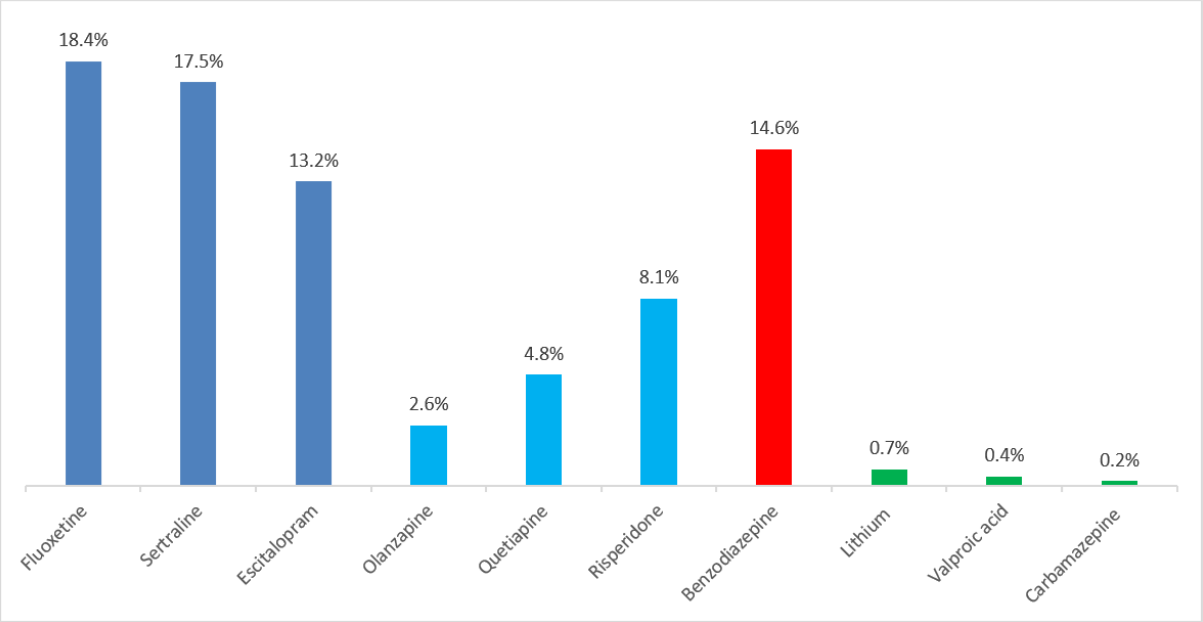

Figure 4: Pharmacological management of depression

The clinical course was marked by remission of depressive symptoms in 53.9% of cases, persistence of certain depressive elements in 30.2% of cases, and recurrence of another depressive episode in 13.5% of cases. And 2.4% of our patients are still undergoing treatment and evaluation.

IV- DISCUSSION

1- Study Population and Demographic Characteristics:

The prevalence of depressive symptoms among new consultation requests, estimated at 9.4%, underlines the importance of depressive problems in the pediatric population. The almost even gender distribution and average age of 10.9 years indicate that depression affects a wide range of ages, backgrounds and genders. This is in line with Kessler's study [4], which reveals that 25% of adolescents experience depression. The recent English study by Shoray *et al.*, [10] shows an estimated 34% rise in the rate of self-reported depressive symptoms between 2001 and 2020, with a high prevalence in the Middle East, Africa and Asia.

2- Risk Factors for Juvenile Depression:

The literature highlights hereditary family risk factors: depression and a history of depression in the parents, maternal depression during the perinatal period, multiple traumas in the family history. In our study, it is important to note that a family psychiatric history was found in 59.3% of our patients (notably depression and anxiety). Family history of psychiatric disorders, including depression, plays an important role in the development of depression in children and adolescents. Studies have shown that there is a significant genetic component in the predisposition to depression, and that children with parents or close family members suffering from depression have a higher risk of developing the disorder themselves. The results of the Sanchez-Roige *et al.*, study showed that children and adolescents with depressive parents were at increased risk of developing depression themselves, compared with those without depressive parents [12]. Furthermore, this meta-analysis revealed that the risk was even higher when the both parents were depressed.

Another study, published in 2018, examined data from over 41,000 Danish children and found that children with parents who had mood disorders, including depression, were more likely to develop mood disorders in turn [13]. These findings highlight the importance of family history in the development of depression in children and adolescents. However, it's important to note that genetic factors are only part of the equation. Children can also be influenced by the family environment, including learned behavior patterns and family interactions, which can contribute to the risk of developing depression. Other psychosocial factors may be acute, such as bereavement, or chronic, such as abuse, intra-family conflict, bullying or other forms of violence, and chronic somatic diseases [3]. Our study also found a notable fraction of patients with organic comorbidities such as diabetes, chronic inflammatory bowel disease, hematological malignancies, asthma and chronic rheumatic diseases. Medical history and organic comorbidities, such as neurological, endocrine and inflammatory disorders, chronic illnesses and physical trauma, represent important risk factors for the development of depression in children and adolescents. These conditions can influence mood, disrupt brain function, induce hormonal changes and generate psychological stress, thus increasing the vulnerability to depression. A bio-psycho-social management approach, taking into account both medical - psychological - and social aspects, is crucial to effectively treat depression in

these young people. Psychosocial factors are not necessarily associated with the development of depression, but adolescents and children with significant hereditary risk factors appear to be more sensitive to psychosocial stressors. Stressors appear to be associated more with the onset of a first depressive episode than with the risk of recurrence, and often need to be cumulative. Chronic and severe stress factors affecting the relational sphere (conflictual family interaction, peer harassment, abuse) seem to have a greater impact on the onset of depression.

However, many children with the above-mentioned risk factors do not systematically develop depression or depressive episodes. Resilience factors that protect against the development of depression include the absence of hereditary factors, a high level of intelligence, the ability to regulate emotions and good adaptive skills [14]. The major protective factor seems to be the maintenance of satisfactory, high-quality interpersonal relationships with peers, which could constitute a target for the prevention and treatment of depression. Similarly, children with a high family risk of depression tend to have better mental health if their relationship with their parents is warm, tolerant, not too hostile, flexible and not too controlling (15,16). This analysis raises significant questions on the influence of personal and family factors on the risk of depression in young people. The results underline the need for a prevention and early intervention approach, highlighting the importance of taking these factors into account in clinical assessment and the development of personalized treatment strategies. Furthermore, these observations suggest potential directions for future research to better understand the underlying mechanisms of depression in children and adolescents.

3- Clinical Expressions of Juvenile Depression:

a- Specific features and main clinical manifestations of juvenile depression: Before describing the specific clinical features of juvenile depression, it's important to remember that the diagnostic criteria for a major depressive episode in children and adolescents in the international literature are the same as those used in adults. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) makes only one difference in children and adolescents, namely that mood irritability often takes the place of depressed mood, and is one of the main diagnostic criteria [17]. These criteria should always be sought, as they can help determine the severity of symptoms, especially as they may be masked by the clinical presentation. The DSM-5 diagnostic criteria are based on the presence of at least 5 of the following symptoms over the past two weeks, representing a change from previous functioning: depressed mood, markedly diminished interest or pleasure in all or almost all activities, significant weight loss or gain, or decreased or increased appetite, insomnia or hypersomnia, psychomotor agitation or slowing, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, difficulty concentrating, recurrent thoughts of death, recurrent suicidal ideation without a definite plan, suicide attempt or definite plan to commit suicide. The clinical manifestations most frequently found in our study included psychomotor disorders, irritable mood, anhedonia, sleep disorders and suicidal ideation. These findings are in line with the existing literature [18]. The presence of psychotic features in some patients adds a complex dimension to the clinical presentation. These findings underline the need for a thorough evaluation of symptoms. The mean time from initial onset of depressive symptoms to consultation, 11.9 months, with extremes of up to 4 years, highlights the need to improve early detection of depression in children and adolescents. It is important to note that the diagnosis of depression in young children is delicate due to ongoing development, and must be carried out by qualified health professionals.

b- Selected Diagnostic Entities and Intensity of Disorders:

The DSM-5 classification of depressive disorders includes several main categories of depressive disorders:

- Characterized depressive disorder: This disorder is characterized by the presence of depressive episodes that last at least two weeks and are manifested by persistent depressed mood, loss of interest or pleasure in usual activities, and symptoms such as disturbed sleep, appetite or concentration, feelings of guilt or worthlessness, suicidal thoughts, and decreased energy.
- Persistent depressive disorder (dysthymia): This disorder is characterized by persistent depressed mood lasting at least two years in adults (one year in children and adolescents), with symptoms less severe than those of major depressive disorder, but persistent enough to cause significant distress or dysfunction.
- Premenstrual dysphoric disorder: This disorder concerns women who experience severe depressive symptoms, anxiety or irritability during the luteal phase of the menstrual cycle, which disappear after the onset of menstruation.
- Disruptive disorder with emotional dysregulation: This disorder characterizes children and adolescents with severe symptoms of emotional dysregulation, such as episodes of anger and irritability out of proportion to the situation, as well as severe and persistent mood swings.
- Substance- or drug-induced depressive

disorder: This disorder occurs when depressive symptoms are associated with the use or withdrawal of a substance (such as alcohol, illicit drugs, certain medications) or exposure to a toxic substance.
- Depressive disorder due to a medical condition: This disorder is characterized by depressive symptoms directly caused by a general medical condition, such as a neurological, endocrine or metabolic disorder.
- Other specified and unspecified depressive disorders: This category includes clinical presentations of depression that do not fully meet the criteria of the other depressive disorders mentioned above.

These DSM-5 categories provide a diagnostic framework for assessing the different types of depressive disorders in terms of severity, duration and associated etiological factors.

The predominant diagnostic entities in our study are characterized depressive disorder and persistent depressive disorder, findings that corroborate the diversity of clinical forms of depression in this population [3, 4, 9].

Once the diagnosis has been made, the severity of the depressive disorder must be assessed:
- Mild: Depressive symptoms are present but do not significantly interfere with daily functioning. The person can still maintain usual activities despite the presence of depressive symptoms.
- Moderate: Depressive symptoms are more pronounced and begin to noticeably affect daily functioning. The person may have difficulty accomplishing certain tasks or maintaining social and professional relationships.
- Severe: Depressive symptoms are severe, leading to significant distress, major dysfunction and an inability to function normally in daily life. In the most severe cases, suicidal ideation or psychotic symptoms may be present, requiring immediate intervention.

Assessment of the intensity of the disorders in our study reveals a significant distribution between mild, moderate and severe forms, with a predominance of mild forms, in line with data in the literature [4].

c- Depression and Suicidality:

Self-mutilation and suicidal behavior, observed in 29.2% of cases, underline the severity of the symptomatology. Their identification and management should be at the heart of assessment and clinical management. The Benton TD study. At 2022 [18] reports on the frequency of NSSI (Non suicidal self harm injuries) and suicidal behaviors among adolescents; identifying the importance of ethnic minority factors, testifying to a high prevalence of suicidal behaviors in the Middle East, Africa and Asia. The authors stress the crucial importance of addressing this issue, given the disparities observed in access to care and in the quality of mental health services. They call for urgent action to improve access to effective, culturally appropriate interventions, as well as increased awareness to reduce the stigma surrounding mental health in these communities.

d- Organic and Psychiatric Comorbidities:

The presence of antecedents or organic medical or surgical comorbidities (notably chronic illnesses) in 22.4% of our patients reaffirms the findings of the literature, notably the German study by Steffen [19], which demonstrates a strong association of depression with osteoarticular pathologies, followed by cardiovascular and then metabolic pathologies in the paediatric population. The psychiatric comorbidities found in our study, such as generalized anxiety disorder, separation anxiety and specific school learning disorders, underline the clinical complexity associated with depression in children and adolescents, as demonstrated by Choi's study [20], which found a 30.04% association between anxiety disorders and depressive disorders.

4- Management and Evolution of the Disorders:

The diversity of therapeutic approaches, ranging from psychotherapy alone to the use of psychotropic drugs, reflects the need for individualization treatments according to the severity of symptoms and the specific needs of each patient. Among the types of psychotherapy most commonly used to treat depression in children and adolescents are cognitive-behavioral therapy (CBT), interpersonal therapy (IPT) and psychodynamic therapy. CBT is widely recognized for its effectiveness in treating depression in young people. This approach focuses on identifying and modifying negative thought patterns, as well as developing strategies for coping with emotions and stressful situations. It remains the psychotherapy most validated by studies for its efficacy in depressive disorders [21]. IPT focuses on interpersonal relationships, helping patients to identify and resolve relational problems that may be contributing to their depression. Psychodynamic therapy focuses on exploring past experiences and unconscious conflicts that may influence current emotions and behaviors.

According to current guidelines [22]: in cases of mild depression, psychotherapy, such as cognitive-behavioral therapy (CBT), interpersonal therapy (IPT) or psychodynamic therapy, is recommended as first-line treatment. In cases of moderate or severe depression, a combination of psychotherapy and antidepressant medication may be required, with psychotherapeutic interventions combined with medications such as selective serotonin reuptake inhibitors (SSRIs) or antidepressant inhibitors serotonin and norepinephrine reuptake inhibitors (SNRIs).

The prescription of psychotropic drugs for the treatment of depression in children and adolescents is a complex and sensitive topic within the medical community. Practitioners must carefully evaluate clinical factors and consider the balance between therapeutic benefits and potential risks associated with the use of these medications in this specific population. Antidepressants can be considered when depression is moderate to severe, persistent and significantly impairs daily functioning. However, their use in children and adolescents requires careful risk- benefit assessment, due to the increased risk of suicidal thoughts in some young people on antidepressants. They should be prescribed and closely monitored by the treating physician.

Anxiolytics, such as benzodiazepines, are not generally recommended as the primary treatment for depression in children and adolescents, but they can sometimes be prescribed to treat the severe anxiety symptoms that accompany depression.

However, their long-term use is often avoided because of the risk of dependence and side effects. Antipsychotics can be prescribed as an adjunct to other treatments for depression in children and adolescents, particularly in the presence of psychotic symptoms or concomitant disorders such as schizophrenia.

As with antidepressants, their use requires close monitoring due to potential side effects, including metabolic disorders. As mood stabilizers, such as lithium or certain anticonvulsants, can be used to treat depression in adolescents with bipolar disorder or symptoms of mood instability.

The setting of the present study, conducted in a third-level teaching hospital, led to the inclusion of a substantial number of patients with moderate to severe depression. As a result, the prescription of psychotropic drugs in our setting was higher. The most frequently prescribed psychotropic drugs include selective serotonin reuptake inhibitor (SSRI) antidepressants, which are the molecules demonstrating the greatest safety and efficacy when prescribed to the paediatric population. Our results concur with those of Kovich *et al.*, [23] and Diener *et al.*, [8]. However, the study by Hazell *et al.*, states that the efficacy of these antidepressant treatments has only been proven in severe forms of juvenile depression [3].

5- CONCLUSION

In short, depression in children and adolescents is a complex and often misunderstood reality. The warning signs and manifestations of this condition evolve with age, making diagnosis and management all the more delicate. However, it is crucial to recognize that these vulnerable populations are not immune to mental disorders, and that depression can have a profound impact on their physical, emotional and social development. As a society, it's imperative to break the taboo surrounding young people's mental health and put in place adequate support systems. Open communication between parents, educators, health professionals and the young people themselves is essential for early detection of signs of distress and for providing appropriate support.

Therapeutic approaches, such as cognitive-behavioral therapy (CBT) or interpersonal therapy (IPT), play a crucial role in long-term recovery and prevention. Regular screening for depressive symptoms, both within healthcare systems and in educational environments, is essential to identify children and adolescents at risk and direct them towards appropriate interventions. In addition, early management, combining psychotherapeutic interventions and, in some cases, closely monitored psychotropic medication, can help prevent deterioration of symptoms and promote lasting recovery. By working together to recognize, assess and treat depression in young people, healthcare professionals and communities can play a crucial role in promoting the mental and emotional well-being of children and adolescents.

Conflicts of Interest: No conflicts of interest.

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