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Health Related Quality of Life in Attention Deficit Hyperactivity Disorder in Children

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Abstract:

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disease characterized by excess inattention, hyperactive and impulsive condition which are persistent and detrimental in numerous situations. ADHD is inherited in 74% of cases. ADHD causes deterioration in a child's health-related quality of life by triggering other problems like anxiety and depression. Growth, exercise, school attendance, academic performance, and functional progression are all important factors in determining a child's quality of life. There are many tools that have been used to evaluate HRQOL in children, such as the pediatric quality of life inventory and the child health questionnaire.

Abbreviations: attention deficit hyperactivity disorder; ADHD, health-related quality of life; HRQOL

Keywords:attention deficit hyperactivity disorder, child health questionnaire, child health-related quality of life.

Introduction:

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopm-ental disease characterized by excess inattention, hyperactive and impulsive condition which is persistent, detrimental in numerous situations.[1]

Executive dysfunction causes ADHD symptoms, and emotional dysregulation is frequently seen as a fundamental symptom. Problems paying attention in childhood can lead to poor academic achievement.[1]

ADHD is linked to various neurological developmental problems as well as other non-psychiatric problems, which can result in extra damage.[2] Although persons with ADHD have difficulty focusing on things that they are not very interested in completing, they are frequently able to sustain an abnormally lengthy and intense degree of concentration for projects that they find engaging; which is known as hyperfocus.[3]

It affects around 5 percent of children who were diagnosed using the DSM-IV criteria and 2 percent of children who were diagnosed using the ICD-10 criteria. Rates are comparable across nations, with the main variation being how it is diagnosed.[4] ADHD is present approximately twice as often in males as in females.[5] About half of those diagnosed with ADHD as children continue to have it as adults.[6]

Etiology of ADHD:

In the majority of instances, the specific causes of ADHD are unclear.[7]

- Genetics causes:

There are several gene variations that enhance a person's possibility of developing ADHD; it results from the combination of a number of gene variants that each have a minor influence. Siblings of ADHD children are more susceptible to acquiring the disorder.[8]

- **Environment**:

Some environmental variables may have a role in the development of ADHD. Alcohol during pregnancy can result in fetal ADHD or symptoms similar to it. The organophosphate insecticides are linked to an increased risk of ADHD.[9]
Tobacco smoking in pregnant women disturbs the development of the central nervous system and increases the chance of ADHD.[10]
Very low birth weight and extreme neglect represent risk factors for ADHD [11]. 30% of children with a brain injury caused by trauma may be susceptible to developing ADHD.

- **Society**

It has been found that the youngest kids in a class are more likely to be diagnosed with ADHD. This could be because they aren't as mature as their older classmates.[12]

ADHD Pathophysiology:

A brain neurotransmitter involving dopamine and norepinephrine may not act efficiently in people with ADHD. The dopamine and norepinephrine pathways that lead to the prefrontal cortex and striatum directly regulate cognitive function and behavior, self-motivation, reward perception, and motor ability.[13]

Clinical presentation of ADHD:

ADHD is divided into three primary presentations [14]

- Predominantly inattentive type (ADHD-PI or ADHD-I)
- Predominantly hyperactive-impulsive type (ADHD-PH or ADHD-HI)
- combined type (ADHD-C).

ADHD may lead to other psychiatric problems. Patients may be anxious and depressed.[15]

Management of ADHD:

Different ways to deal with ADHD are suggested, but they usually involve a mix of medications, counseling, and changes to a person's lifestyle.[16]
The British guideline emphasizes that, as a first step, people with ADHD and those who care for them should make changes to their environment and learn more about ADHD. Depending on the age of the person, training for parents, medication, or psychotherapy (especially cognitive behavioural therapy) may be suggested if the symptoms aren't alleviated.[17]
Canadian and American guidelines recommend both drug and behavioural therapy together, but in preschool children, the first choice is behavioural therapy.[18]
Stimulating drugs are the most commonly reported to have good results, although many have reported side effects.[18]

Prognosis of ADHD:

About 30–50% of people with ADHD still have it as adults. Those who are affected are likely to learn how to deal with it as they get older. ADHD children are more susceptible to accidents. Effects of drugs on functional disability and quality of life have been found in more than one point.[19]

Quality of life (QOL) in ADHD

Quality of life (QOL) has been set as a goal for medical research and care. It's important to understand QOL in order to improve health care and help patients

get better. The term "health-related quality of life" (HRQOL) includes the parts of a person's quality of life related to his own health conditions. It shows how illness and treatment affect a person's ability to live and do daily tasks. [20]

Multiple HRQL areas are significantly affected by ADHD in children and adolescents. Parents of children with ADHD reported higher emotional-behavioral function, behavior, mental health, and self-esteem difficulties. In addition, the issues of children with ADHD had a major influence on the mental health of the parents and their ability to satisfy their own needs, as well as on family activities and family cohesiveness. [21]

Children with more severe ADHD symptoms had lower HRQL in the psychosocial domains. In a variety of HRQL dimensions, the psychosocial HRQL of children with numerous comorbid illnesses was inferior to that of children with none or one comorbid disease. Furthermore, when compared to children without comorbidity, psychosocial [22].

Because the effects of ADHD are not uniform, judgments on necessary assistance should encompass a larger array of important outcome markers, such as HRQL. [23]

Many social factors, like the family, the classroom, and the community, have an effect on children and contribute to HRQOL.[24] The parent-child interaction showed how their actions affect each other. Children's behavior, social skills, and friendships are affected by how they live with their family. [25]

There are conceptual, methodological, and practical issues that make it hard to measure a child's quality of life. Tools for children that are right for their age, tools for children that are rated by a proxy, and cross-cultural considerations should be considered. [26]

Children can be incapable of answering questions on their own. The majority of studies have been based exclusively on the opinions of parents. However, no one knows internal symptoms as well as the patient, and he is the best person to feel and express his or her HRQOL and disease-specific symptoms. [27]

Children and their parents don't always see things the same way. In studies of children younger than 12 years old, parents and children did not always agree. So, any measure of a child's quality of life should include what they think. [28]

Reports from parents' proxies on the quality of life related to their children's health are deemed necessary. When a child is too young, too sick, or too cognitively impaired to fill out an HRQOL instrument, a parent's report of their child's HRQOL is seen as useful. Also, they are very important in clinical decision-making for figuring out how likely treatment options are to work from the family's point of view. [29]

Parents' thoughts are affected by how they feel, how involved they are in treatment, and how much care they have to give their child every day. Most of the disagreement is about emotional and social functioning, not how well the body works.[30] People have different ideas about what is best for the child. Parents and children look at how a child feels and acts in different ways. [31]

Instruments used to assess HRQOL in children:

Factors such as body growth, physical exercise, school attendance and academic performance, and development of functions performance are essential domains for evaluating the quality of

life in children.[32] There are many tools that have been used to assess HRQOL in children.

Generic questionnaires are used to test a large group of people, and they can be used on patients with many different health problems, not just those that affect one organ or system. They are helpful because they let people compare the quality of life of different groups of patients. These are about research in four areas: physical, mental/emotional, social, and functional. Their weakness is low sensitivity to treatment-induced changes in patients. [33]
Several generic HRQOL questionnaires that have been tested and have good records are used, such as:

1. **Child Health and Illness Profile—Adolescent Edition:**
The Child Health and Illness Profile-Adolescent Edition (CHIP-AE) is a generic 153-item self-report tool that measures health status in 6 points (discomfort, satisfaction, disorders, achievements, resilience, and risks). This tool takes about 20 minutes. Reliability and validity were evaluated in a range of 11- to 17-year-old patients. It was sensitive to distinguish between healthy and ill children. [34]

2. **The Pediatric Quality of Life Inventory** (PedsQL, Mapi Research Institute, Lyon, France) includes 23 items and measures health status across 5 domains: physical condition, emotional status, psychosocial well-being, social functioning, and school performance in 2- to 18-year-old children. Validity and reliability have been documented. There are forms for both parents and children. The inventory takes about 5 minutes to fill out, so it's quick and great for figuring out how an intervention affects HRQOL or for long-term, repeated assessments. [35]
In a Korean study on children with ADHS, the PedsQL total score of emotional elements showed a significant association with all items except DSM-oriented somatic problems. The physical factors of the PedsQL exhibited strong associations with all items with the exception of cognitive issues on the syndrome directed measures and somatic problems on the DSM scales. The social factors of the PedsQL showed substantial relationships with all syndrome scale categories, with the exception of attention issues and somatic problems in the DSM scales. The PedsQL factor, with the exception of somatic symptoms, school functioning was substantially associated with all other variables in the syndrome scales and somatic problems in the DSM scales.[36]

3. **The Children's Health Questionnaire:**
The Children's Health Questionnaire (CHQ) has both parent and child forms. Children aged 10 to 19 years need about 20 minutes to complete the questionnaire. The CHQ addresses 12 domains, including physical functioning, delayed school performance and activities with friends, general health, pain and body discomfort, isolation from family activities, emotional or time effect on the parent, impact of emotional or behaveour problems on school performance and other daily activities, self-confidence, mental condition, behavior, family activity, and improvement in health.
Parent forms can be used individually (CHQ Profile Scores) or combined to calculate an overall physical and psychosocial score (CHQ Summary Scores). The child-form CHQ surveys, the full-length 87-item CHQ-CF87 self-report,

and the short-form version CHQ-CF45 are used.[37]

Questionnaires specific to a certain disease, unlike generic instruments, are particularly intended to assess health factors influenced by a particular condition. These devices are typically more sensitive than generic instruments and target disease-specific characteristics. They cannot be used to compare the quality-of-life effects of two distinct illnesses. These instruments are so specialized that there are instruments designed particularly for children and adults. [33].
In several fields, specialized research instruments have been created. The functional status quantifies adaptability to the disease's symptoms and expresses mobility and capacity to perform. Somatic or physical state indicates the quality of symptom control, primarily pain, and is evaluated in relation to the performance of fundamental physiological processes and the physical symptoms associated with the illness and treatment interactions. Mental state is defined as the extent of sickness acceptance and adaption to new living circumstances. The emotional status evaluates the number and quality of emotions such as anxiety, despair, and rage, as well as happiness, satisfaction, and optimism. Social status is a measurement of the kind and quality of connections, the degree of social support, and social functioning. [33]

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