

Review of Children with Neuro developmental Disorders

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Abstract

Neurodevelopmental disorders [1] are impairments of the growth and development of the brain and/or central nervous system. A finer use of the word denotes to a disorder of brain function that affects emotion, learning ability, self-control and memory which unfolds as an individual develops and grows. Cerebral palsy is a group of disorders arising from a malfunction of motor centers and neural pathways in the brain. Children with cerebral palsy (CP) have an elevated risk of developing mental health disorders, which is partially accounted for by their levels of pain, physical activity, and sleep, according to a study. However, information is lacking about the occurrence of mental health disorders in children with cerebral palsy. Cerebral palsy is the name for a group of lifelong conditions that affect movement and co-ordination, caused by a problem with the brain that occurs before, during or soon after birth.

Keywords: cerebral palsy, Neurodevelopmental disorders

Date of Submission: 02-12-2019

Date of Acceptance: 18-12-2019

I. Introduction

Cerebral palsy is one of the most complex of the common permanent disabling conditions. Research in this area is directed at adapting biomedical technology to help people with cerebral palsy cope with the activities of daily living and achieve maximum function and independence. It is a disorder of movement, muscle tone or posture that is caused by damage that occurs to the immature, developing brain, most often before birth [2]. The neurodevelopmental disorders currently considered, and recognized as such are:

- Intellectual disability (ID) or intellectual and developmental disability (IDD), previously called mental retardation
- Specific learning disorders, like Dyslexia or Dyscalculia
- Autism spectrum disorders, such as Asperger's syndrome or Autistic Disorder
- Motor disorders including developmental coordination disorder and stereotypic movement disorder
- Tic disorders including Tourette's syndrome
- Traumatic brain injury (including congenital injuries such as those that cause cerebral palsy)
- Communication, speech and language disorders
- Some of the Genetic disorders, such as fragile-X syndrome, Down syndrome, attention deficit hyperactivity disorder, schizophrenia, schizotypal disorder, hypogonadotropic hypogonadism syndromes
- Disorders due to neurotoxins like fetal alcohol spectrum disorder, Minamata disease caused by mercury, behavioral disorders including conduct disorder etc. caused by other heavy metals, such as lead, chromium, platinum etc., hydrocarbons like dioxin, PBDEs and PCBs, medications and illegal drugs, like cocaine and others [3].

There is emergent evidence that many children with neurodevelopmental disorders are more prone to psychiatric disorders in adulthood, some of which can be screened for and treated in childhood. Although there is increasing awareness about the complexity of the CP condition, most of the health services are provided in specialized pediatric clinics with motor impairments as the main focus. To identify mental health problems in children with CP, screening questionnaires may be useful. However, little is known regarding the ability of these questionnaires to disentangle the complexity of mental health problems in children with CP [4]. In a cross-sectional study, researchers at the University of Michigan assessed physical activity, sleep duration, and pain in children with and without cerebral palsy, and associated the data with the prevalence of mental health disorders. Anxiety, depression, attention-deficit/hyperactivity disorder (ADHD), attention deficit disorder, and behavioral/conduct problems were considered mental health disorders. Physical risk factors included physical activity (number of days that the child exercised, played a sport, or participated in physical activity for at least 60 minutes), sleep duration, and pain. Statistical analysis was used to compare the mental health status between children with and without cerebral palsy, adjusting for factors such as age, sex, ethnic group, and socioeconomic

status all of which could bias the comparison. The study found that the odds of having a mental health disorder except for attention deficit disorder/ADHD were higher in children with cerebral palsy compared with those without the disorder. The likelihood of anxiety and behavior/conduct problems was 3.8 times higher in children with cerebral palsy. Children with cerebral palsy had a significant lack of physical activity compared with children without the disorder, and a higher prevalence of pain (39%) than the control group (7.6%). [5](Daniel, Seth, Mark, 2018).

According to a study, CP is one of the most common neurodevelopmental conditions in childhood, affecting 2-3/1000 [6]. While motor impairment is the diagnostic basis, the disorder often presents with associated symptoms and a wide range of related impairments such as epilepsy, pain, and cognitive and communicative impairments. Mental health problems as another main associated symptom, have recently gained awareness, as assessed by screening questionnaires and by diagnostic interviews. Using a diagnostic interview, one in two children with CP met criteria for a psychiatric disorder, of which attention deficit hyperactivity disorder (ADHD/ADD) was the most common. Additionally, one in five children had more than one diagnosis, and the presence of psychiatric disorders was not significantly determined by type and severity of the CP condition [7-8].

Interventions

Some of the tips are recommended for a successful caregiver. For example, when raising a Child with Cerebral Palsy, there is no one-size-fits-all piece of advice on how to raise children with cerebral palsy. Parents and caregivers of children with CP can supposed to take on abundant, unique accountabilities that may last for a child's lifetime. Nurturing a disabled child takes time, effort, empathy, and patience. Teaching is one of the most fundamental aspects of development for children with cerebral palsy. Communal school and private school are just a few choices for children with CP. The only option for Educating a Child with Cerebral Palsy is through the parents. Caregivers show a vital role in their children's education. It is critical that educational services and support begin as early as toddlerhood to allow for proper development of important life skills [9].

The choice of interventions in children should ideally be informed by evidence of the outcomes and effects in adults who have undergone the procedures, but long term outcomes associated with childhood surgeries have not been well documented. Natural history studies investigating life stages, specific challenges, and physical or health-related quality of life in terms of daily activities are required. The care delivered should go forward to meet the patient's needs throughout his or her life. Pain is typically related to osteoarthritis of the spine and hips, associated with gait deviations, postural abnormalities, and spasticity leading to joint misalignment and overuse.

Quality of life in adults with CP is associated with level of education, employment status, and access to health care as mentioned in a review study conducted in 2011 [10]. Appropriate interventions for cerebral palsy are dictated by the patient's functional ability, severity, pattern of motor disorder, associated pain and discomfort, and age. Pediatric practice aims to reduce secondary musculoskeletal deformity rather than treat the primary central neurological deficit. An adaptive approach is needed to facilitate all developmental domains and reduce the effect of medical problems. Stem cell therapy also aims to reduce these acute and delayed inflammatory responses and stimulate neuro genesis.

II. Conclusion

The mentioned study also concluded that the mental health services integrated in regular follow up of children with CP are recommended due to high prevalence and considerable overlap of mental health symptoms. The community special education for CP children implies that raising and caring for a child with cerebral palsy takes patience and understanding.

Funding

This review article received no grant from any funding agency in the public, commercial, or not for profit sectors.

Conflict of Interests: The authors declare that they have no conflict of interests with any organization regarding the materials discussed in this manuscript.

Ethical Clearance: Not required as it a review article.

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Agnes Monica Victor. "Review of Children with Neuro developmental Disorders " .IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 8, no.06 , 2019, pp. 01-03.