Challenges of Cerebral Palsy Management

Areej Alshehri, Advisor: Prof. Christian Bach
Department of Biomedical Engineering, Department of Technology Management, School of Engineering, University of Bridgeport, CT

Abstract

The purpose of this study is to discuss the challenges of cerebral palsy (CP) management. The paper will discuss CP treatment, patient care & support, clinical processes and patient quality of life as the major challenges of CP management. The paper looks at existing research with the aim of advancing current understanding on the goal, analysis and synthesis of CP. CP treatment; patient care & support, clinical processes and patient quality of life are the major challenges of CP disorder management. The focus of modern practitioners in CP management should combine the processes around diagnosis, treatment and patient care. There was limited time and resources to complete the study. This report presents findings that are important for medical practitioners, parents, caregivers and other stakeholders such as the government. The contents can help provide much needed insight that can lead to the improvement of CP management by providing solutions to the identified major challenges.

Introduction

Management of Cerebral Palsy (CP) varies from one patient to another. In some patients it is severe during birth while in others it becomes pronounced during their early childhood. However, the only common thing amongst all these patients is that the brain damage becomes evident as the child grows.
Once a child has been diagnosed with CP, it means a long and complicated process to help them live a bearable life.

Special care is needed from parents, doctors, speech therapists, occupational therapists, caregivers, and other medical practitioners in order to manage different aspects of the disorder. The practices performed by this group are tiring, expensive and requires a lot of patience. Besides, special teachers are also required to help the child since his learning ability is affected by the disorder.

Therefore, four hypotheses tests were performed on CP treatment, care & support, patient's quality of life, and clinical process to find out their effects relate to the aim of the research.

Methods

- A pool of 1000 (8 years old) children per state in United States of America was sampled and prevalence rate determined
- Descriptive qualitative study and the centric review research were the methods used to implement the research.
- Three types of Cerebral Palsy namely; Spastic (occurring in at least 70% of all CP cases in the world), Ataxic,(occurring in at least 6-10% of all CP cases) and Athetoid (occurring in at least 10% of all CP cases) palsy were discussed.
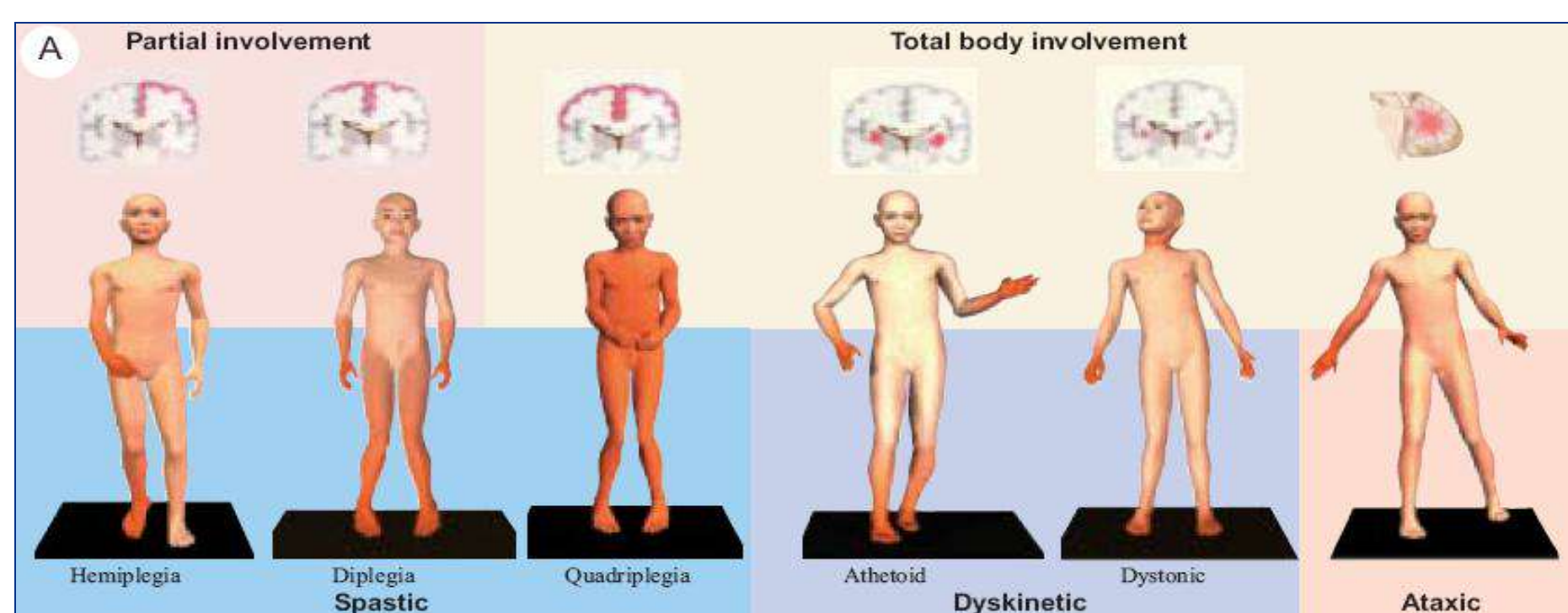

Figure 1-3: Body movements in the different types of cerebral palsy

- The scientific causal model was used to develop the hypothesis to determine if these factors affect the goal positively.
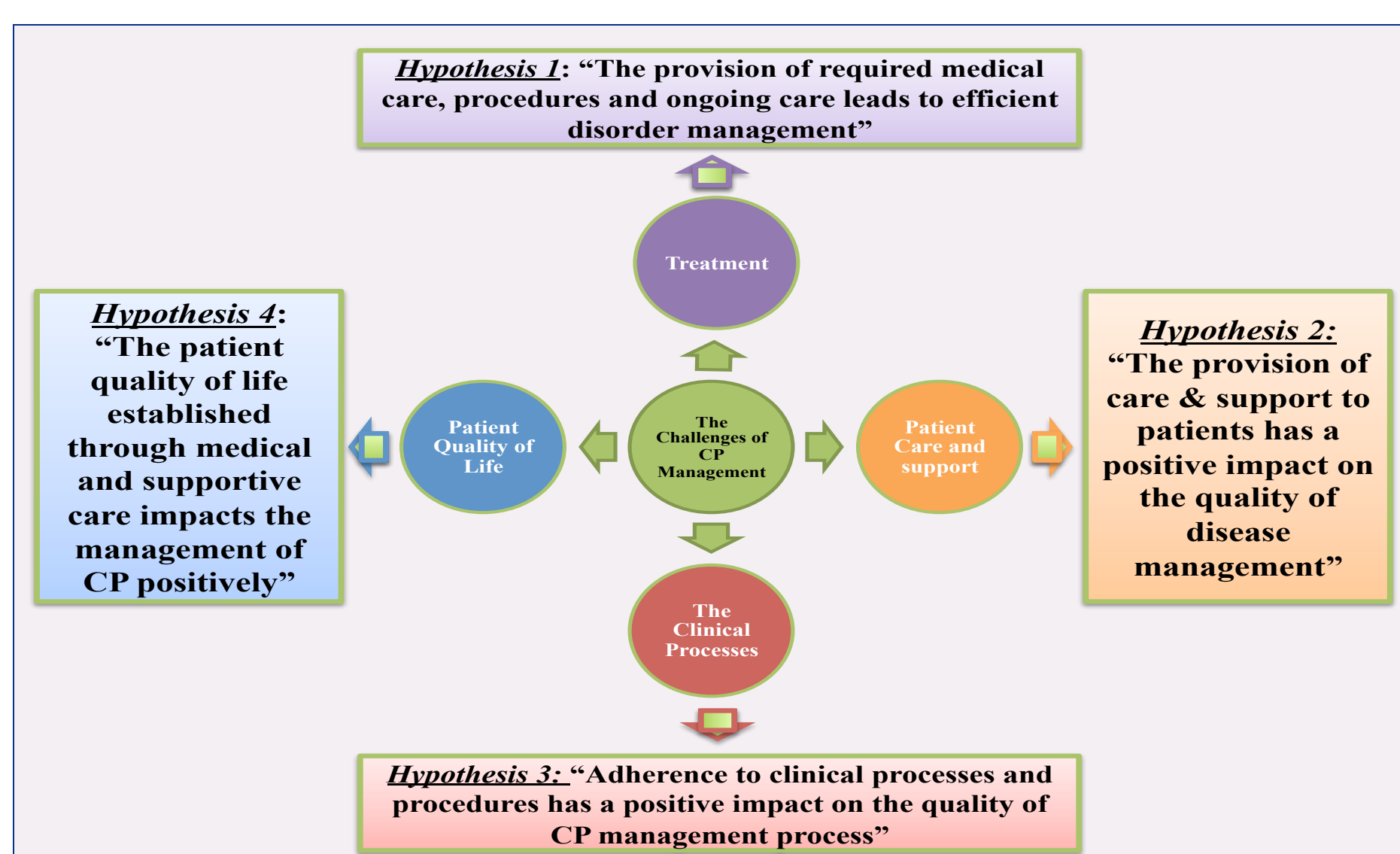

Figure 2-3: The scientific causal model for the 4 factors of CP management

- CP patients need care from parents, doctors, speech therapists, occupational therapists, caregivers and other medical practitioners or specialists are involved in managing different aspects of the disorder. When there are no caregivers for such patients, their condition may deteriorate.

- The management of CP, like any other disorder management process, follows the set guidelines and processes that are supposed to establish a standard for best practices in managing the disorder. A sample diagnostic process may include:

1. Guarerdian or parent observations.
2. Clinical observation.
3. Motor skills analysis.
4. Medical history review.
5. Associative condition study.
6. Obtaining test results.
7. Diagnosis.
8. Second opinion.
9. Cause determination.
10. Assembly of a care team.
11. Development of a care plan.
12. Embracing the disorder and improving quality of life.

Results and Analysis

- The prevalence rate in 1000(8 years old children) in all the USA states was found to be at 3.1 % as shown in Fig: 2
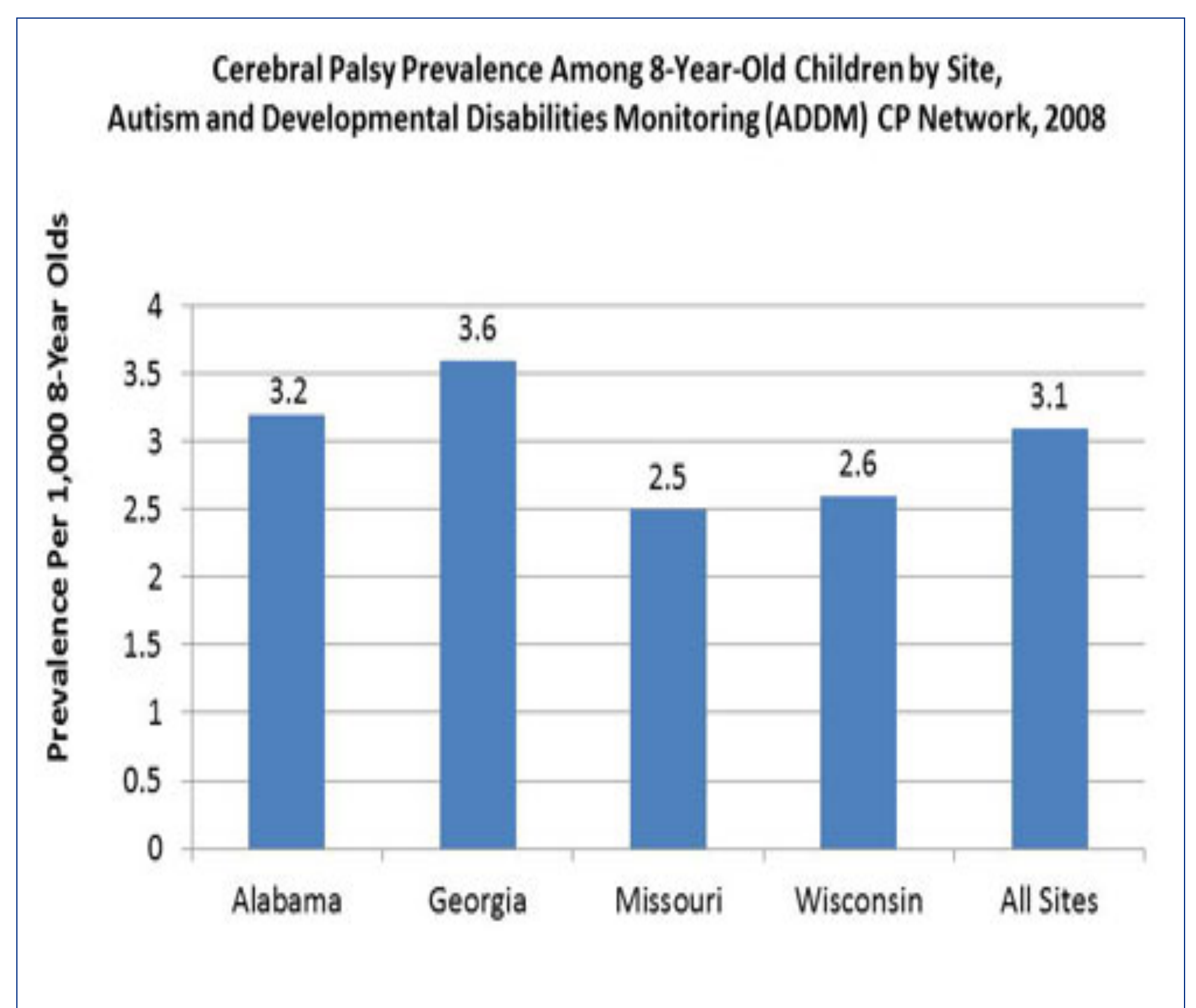

Figure 3-3: The cerebral palsy rates in different sites in the US

- The challenges of management of CP were found to begin from diagnosis to the provision of care long after diagnosis.

- It was noted that the lives of patients can be changed by having a positive attitude towards the management of CP and ensuring that patients have all the necessary medical, social and moral support.

- The new insights gained from this study were, the problems in CP management are not caused by sophisticated scientific problems that specialists are unable to solve, but by the issues that may appear trivial to most people such as poor adherence to clinical procedures and poor monitoring of patients.

- Since medicine to treat symptoms and equipment to carry out complex procedures are available, the focus of modern CP medical practice should be on tightening the rules around clinical processes (best practices), patient care, support, early diagnosis and the provision of affordable & accessible medical care.

- Subsequent analysis were also used to reveal that these factors affect the goal positively the treatment, patient care & support, clinical processes and patient quality of life are the major challenges to CP management. For example, the hypothesis for analysis of treatment is that "The provision of required medical care, procedures and ongoing care leads to efficient CP management".

Conclusion

- It was concluded that the high complexities of the CP disorder and treatment were affecting the management processes.
- The treatment process is viable only if doctors and caregivers begin a comprehensive management program immediately after diagnosis of CP.
- The guardians, parents, doctors, speech therapists, occupational therapists, caregivers and other medical practitioners or specialists collaborate in managing the disorder.

Future Directions

There was limited time and resources to complete the study, therefore the scope of details covered was not exhausted. I would recommend that such a research be allocated extensive time for search and Meta analysis.