

# Conceptual Modeling of Nodding Syndrome: A System Dynamics and Sequence Approaches

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## Abstract

Conceptual modelling of nodding syndrome (NS) has hardly been considered in most scientific literature although symptoms of the disease has been widely studied. A conceptual model is a representation of hypothesis about a system under investigation and enables a comparison between hypothesis and data. Since nodding syndrome is an unexplained neurological illness that mainly affects children aged between 5 to 15 years, without specific diagnosis and treatment, the aetiology remains unknown and under investigation, conceptual modelling may be a crucial ingredient in understanding the disease.

The purpose of the study is therefore, to represent nodding syndrome occurrence and immune-pathogenic pathways in the causation of nodding syndrome using system dynamics approaches.

We have used systematic review method to filter literature on nodding syndrome from the year. We also used Systems Dynamic Approach and we emphasized confirmed scientific investigation to enable the relationships conform to reality. Vensim software was preferred for implementation of the casual-loop diagrams. Microsoft Office Visio 2007 was identified as suitable for implementation of the sequence conceptual model of nodding syndrome for its ability to show interactions between electrolytes and other actors.

**Findings:** Our findings were that system dynamics approach has not been used research of nodding syndrome. More so, conceptual modeling were not considered by most articles.

**Key words:** Nodding syndrome, Epilepsy, System dynamics, Conceptual model