Using the conditional inference paradigm to explore the basis for reduced mismatch negativity (MMN) size in individuals with schizophrenia.

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Abstract

Scope: The scope of this thesis includes a review of existing literature on various theories put forward to explain the reduction of event-related potential component, mismatch negativity (MMN) in the mental illness schizophrenia. Evaluation of existing literature builds the argument for purpose and experimental design of this thesis. Purpose: The purpose of this thesis was to explore the integrity of the inferential process and basis for reduced MMN in schizophrenia. Methodology: The thesis features the application of a novel MMN paradigm to explore what is impaired and what is intact in the inferential process underlying MMN generation in schizophrenia. Sixty-five participants (35 individuals diagnosed with schizophrenia or schizoaffective disorder and 30 matched controls) completed the MMN paradigm together with cognitive testing and clinical assessment. Results: The data indicate that although MMN is smaller in size in this sample (replicating prior research), the ability persons with schizophrenia to reduce MMN size to a deviant sound when the timing of its occurrence can be inferred from predictive cues is equivalent to that of healthy controls. Conclusions and Implications: The paradigm was designed on the assumption that the reduced size of MMN to a predictable deviation reflects a dynamic shift in a perceptual inference model. This process is intact within schizophrenia. However, our data reveal other group differences within the paradigm that have methodological implications for research in this field.
Table of Contents

Acknowledgements ........................................................................................................ 2
Abstract ......................................................................................................................... 3
List of Tables .................................................................................................................. 5
List of Figures ................................................................................................................ 5
Critical Literature Review ............................................................................................ 6
  Mismatch Negativity .................................................................................................. 6
  Reduced MMN and Pathology of Schizophrenia ....................................................... 8
  Reduced MMN and Symptoms of Schizophrenia ...................................................... 10
  Tone Discrimination Ability ..................................................................................... 11
  What Can Alternate Paradigms Teach Us? ................................................................. 13
Clinical Neurophysiology Manuscript ......................................................................... 18
  Abstract .................................................................................................................... 19
Introduction .................................................................................................................. 20
Method .......................................................................................................................... 26
  Participants ............................................................................................................... 26
  Clinical and Cognitive Assessment ....................................................................... 26
  Stimuli and Sequences ......................................................................................... 27
  Procedure ................................................................................................................. 28
Data Processing and Analysis ..................................................................................... 29
Results .......................................................................................................................... 31
  Deviant as Standard ............................................................................................... 31
  Group Differences in MMN to Traditional Random Sequence Deviants.............. 31
  Method of MMN Calculation ............................................................................... 32
  Effect of Sequence Type ....................................................................................... 33
Discussion ..................................................................................................................... 35
References ..................................................................................................................... 39
Tables and Figures ......................................................................................................... 42
References ..................................................................................................................... 47
Appendix A ................................................................................................................... 52
Appendix B .................................................................................................................... 56
List of Tables

Table 1  *Demographic and Clinical Group Means and Standard Deviations*  Pg 42

List of Figures

Figure 1  *Diagram of the Random and Linked sequence structure presented to participants.*  Pg 42

Figure 2  *MMN to Standard ERP for Matched Control and Schizophrenia groups*  Pg 43

Figure 3  *MMN elicited at FZ to deviant sounds calculated by Traditional and Controlled methods for Matched Control and Schizophrenia groups.*  Pg 44

Figure 4  *MMN elicited by schizophrenia and matched control groups to cue and cued deviants within Random and Linked sequences across F3, FZ and F4.*  Pg 45

Supplementary Figure 1  *MMN elicited by matched controls to cue and cued glide deviants within Random and Linked sequences – Nose-referenced data.*  Pg 46