

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Incidence and Neuropsychological Sequelae  
of Head Injury in a New Zealand  
Adolescent Sample.**

A thesis presented in partial fulfilment  
of the requirements for the degree  
of Masters of Arts in Psychology  
at Massey University.

Catherine May Body  
1995

617.51044

Bod

K 20

## ABSTRACT

The purpose of this study was to determine if there were head-injured students experiencing difficulties that were not being recognised by parents and teachers alike. The study involved two parts. The first part involved a survey of all fourth formers at Awatapu College in Palmerston North, New Zealand, and was concerned with obtaining information regarding incidence, etiology, and awareness of head injury. The second part of the study examined a proportion of students who reported ongoing problems of the kind common after a head injury in more detail. Information was obtained through a self-report questionnaire, neuropsychological measures, a teacher rating form and a parent rating form. The results yielded an incident rate of nearly 14% which is substantially higher than that reported by previous studies, and the results also suggest that head-injured students are more aware of common symptomatology following head injury in comparison to non head-injured students. Apart from on Trial 5 and 6 of the AVLT, there was no significant difference between the head-injured and control groups on the neuropsychological measures. With regards to behavioural and cognitive difficulties that the students may be experiencing, there was a low level of agreement between students, teachers and parents.

Dedicated in loving memory to my  
brother Christopher John Body

## ACKNOWLEDGEMENTS

I would like to thank my supervisor Janet Leathem for her inspiration in getting this thesis started, along with her expert advice and encouragement throughout the year. I couldn't have hoped for a better supervisor and I have enjoyed working with you Janet.

Thanks to all the staff and students of Awatapu College who kindly participated in this study.

Thank you to Ross Flett for his advice with the data analysis stage of this thesis, it was very much appreciated.

Thanks also to my family, especially my parents for their support throughout all my years at university.

Finally, thanks to Mal for all the love, support and much needed understanding that I received throughout the year.

## TABLE OF CONTENTS

		Page
	Abstract	ii
	Dedication	iii
	Acknowledgements	iv
	Table of contents	v
	List of tables	viii
	List of figures	ix
<b>Chapter</b>		
1	<b>INTRODUCTION</b>	1
2	<b>INCIDENCE AND ETIOLOGY OF HEAD INJURY</b>	4
	Incidence	4
	Etiology	8
	Classification of Head Injuries	10
3	<b>COMMON BEHAVIOURAL AND COGNITIVE SEQUELAE RESULTING FROM HEAD INJURY</b>	14
	Physical Sequelae after Head Injury	15
	Common Cognitive Sequelae Following Head Injury	16
	Personality and Behavioural Sequelae Following Head Injury	19
	General Awareness of Head Injury Sequelae	24
4	<b>IMPLICATIONS OF HEAD INJURY FOR SCHOOL FUNCTIONING</b>	25
	Problem Behaviour in the Classroom	25
	Assessing the Head-Injured Student in the School Environment	27

Implications of Head Injury for the Classroom	28
Academic Performance	29
Mild Head Injury	30
Differentiation between Head Injury and Learning Disabilities	32
The Educators Role	33
 5 OBJECTIVES AND HYPOTHESES	 37
Objectives	37
Hypotheses	38
 6 METHOD	 41
Research setting	41
The Participants	41
Measures	43
Procedure	50
Ethical Issues	53
 7 RESULTS	 55
Part 1	55
Part II	64
 8 DISCUSSION	 73
Incidence and Etiology	73
Symptoms and General Functioning	75
Level of Awareness	75
Neuropsychological Measures	76
Severity of Symptoms	77
Suggestions for Future Research	79
Conclusions	80
 REFERENCES	 82



<b>APPENDICES</b>	<b>91</b>
I Head Injury Questionnaire	93
II Letter to Principal and Board of Trustees	99
III Letter to parents and guardians	101
IV Information sheet	103
V Consent form	104
VI Letter to students	105
VII Dialogue of phone call to parents	107
VIII Letter to Principal	108
IX Teachers Report Form	109
X Behaviour Checklist	112
XI TRF Profile for Girls	115
XII TRF Profile for Boys	116
XIII Instructions for the AVL T	117
XIV AVL T Answer Sheet	118
XV PASAT Record Form	119
XVI Digit Symbol Form and Instructions	120

## LIST OF TABLES

TABLE		Page
2.1	Overall incident rates (per 100,000) of head injury by age group	5
2.2	Leading cause of head injury, and ranking, in adolescent males and females	9
6.1	Characteristics of sample population (N=135)	42
6.2	Characteristics of the control group and head-injured group (N=135)	43
7.1	Number of head injuries sustained by head-injured students in a total population of 55	55
7.2	Mean hours of sport played per week (and standard deviation) by male and female head-injured and non head-injured students	58
7.3	Summary of means and t-test results for head-injured and non head-injured students	59
7.4	Percentage of head-injured and non head-injured students who listed each symptom category	61
7.5	Mean AVL T results and standard deviation for the head-injured and control group students	65
7.6	Mean scores and standard deviation of the male and female control and head-injured students on the AVL T	66
7.7	Total mean correct responses and standard deviation across all four presentation rates of the PASAT	68
7.8	Summary of the head-injured students self-report ratings, parent and teacher ratings and neuropsychological test results	70
7.9	Summary of the control group's self-report ratings, parent and teacher ratings and neuropsychological test results	71

## LIST OF FIGURES

FIGURE		Page
7.1	Sources of head injury in student population	57
7.2	Percentage of head-injured and non head-injured students who listed the symptom catagories for the three scenarios	60
7.3	Mean percentage correct responses for head-injured and control group students	67
7.4	Mean time (seconds) per correct response for control and head-injured groups	68