Co-morbidities of Hearing Loss in the Preschool Population

Varsha Sewpersad

Faculty of Humanities

A research report submitted to the University of the Witwatersrand in partial fulfilment of the degree of Master of Arts in Audiology.

Johannesburg, 2012
Declaration

I declare that this dissertation is my own unaided work. It is submitted for the degree of Masters in Audiology by dissertation at the University of the Witwaterstrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

Varsha Sewpersad

9th day of July, 2012
This dissertation is dedicated with sincerity
To all the children that I have worked with, who have inspired me with their perseverance
and love for life.
Each one of you has touched my life in a way that I cannot describe.
CO-MORBIDITIES OF HEARING LOSS

Acknowledgements

I would like to thank the following people for their precious contributions towards this research project:

1. Mr. Shanil Bharath. Thank you for always supporting and believing in me that I can achieve anything in life. Your continuous effort, dedication and passion towards this research report truly has been remarkable. This research work is also your achievement.

2. To my family for their continuous encouragement, support and belief in me. I thank you’ll for being my pillars of strength.

3. To my supervisors, Dr Karin Joubert and Dr Sharon Moonsamy. Your expert guidance, sharing of knowledge and enthusiasm towards this research report is greatly appreciated. Without your supervision that was always done with a hearty smile, this research would not have been possible.

4. To the Centre for Language and Hearing Impaired Children for allowing me to conduct this research at their school.

5. To my Beloved Swami, thank you for showering me with your Love and blessings.
CO-MORBIDITIES OF HEARING LOSS

Abstract

**Background:** Many hearing impaired children present with one or more health-related conditions, in addition to hearing loss. Families and professionals are therefore faced with numerous challenges when a child presents with co-morbidities of hearing loss. The implications for assessment, management and educational placement of these children are numerous. Appropriate plans for holistic intervention and education are essential for the development of the child as well as improved life quality. This study therefore aimed to describe the co-morbidities that pre-school children with hearing loss present with at the Centre for Language and Hearing Impaired Children (CLAHIC), and its implications for management.

**Method:** A descriptive, retrospective research design was employed for the purpose of this study. A non-probability, purposive sampling strategy was implemented to select the records of children diagnosed with a hearing loss, and who have attended CLAHIC from 1999 to 2010. The records of 62 children were reviewed.

**Results:** The more prevalent co-morbidities identified in this study were fine motor delay, gross motor delay, visual motor integration disorder, bilateral integration disorder, apraxia of speech and attention deficit hyperactivity disorder. Further findings of the study indicated that the co-morbidities of hearing loss are independent of the degree of the hearing loss. It was however found that there is an increased risk for fine-motor difficulties across the sample.

**Implications:** The findings of this research suggest that pre-school children with hearing loss, irrespective of degree of hearing loss, should be screened and or monitored for the risk of prevalent co-morbidities, such as fine and gross motor difficulties. A collaborative, holistic and
multi-disciplinary team approach should be implemented to ensure that services are provided to improve the life quality and development of the hearing impaired child.

**Keywords:** Children with hearing loss; co-morbidities; educational placement; holistic intervention; management; interdisciplinary team.
Table of Contents

Declaration ......................................................................................................................... ii

Dedication ........................................................................................................................ iii

Acknowledgements .......................................................................................................... iv

Abstract .......................................................................................................................... v

CHAPTER ONE: BACKGROUND

Introduction ..................................................................................................................... 1

Background ...................................................................................................................... 1

Explanation of Terminology ............................................................................................ 3

List of Abbreviations ....................................................................................................... 4

Outline of Chapters .......................................................................................................... 6

Summary .......................................................................................................................... 7

CHAPTER TWO: LITERATURE REVIEW

Introduction ..................................................................................................................... 8

The ICF Framework ......................................................................................................... 8

Hearing Loss ................................................................................................................... 9

Prevalence of Hearing Loss ........................................................................................... 10

Etiology of Hearing Loss ................................................................................................. 11

Co-Morbidities of Hearing Loss ................................................................................... 13

Prevalence of Co-Morbidities ......................................................................................... 16

Implications for the Assessment and Management Approach ................................... 19
CO-MORBIDITIES OF HEARING LOSS

The Approach used by Professionals.............................................19
Assessment................................................................................23
Management...............................................................................25
Educational Placement..............................................................28
Summary and Rationale of the study............................................32

CHAPTER THREE: METHODOLOGY

Introduction.............................................................................34
Aims of the Study.................................................................34
Research Design.......................................................................34
Context.....................................................................................35
Participants..............................................................................37
   Sampling Strategy...............................................................37
   Participant Description and Sample Size..............................38
Measures..................................................................................38
   Development of the Checklist..............................................38
Pilot Study..............................................................................41
Data Collection Procedures....................................................43
Ethical Considerations............................................................44
Reliability and Validity............................................................45
   Reliability...........................................................................45
   Validity..............................................................................45
Data Analysis...........................................................................45
Summary.................................................................................46
# CHAPTER FOUR: RESULTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>48</td>
</tr>
<tr>
<td>Child Data</td>
<td>48</td>
</tr>
<tr>
<td>Chronological Age and Gender</td>
<td>48</td>
</tr>
<tr>
<td>Hearing Status</td>
<td>49</td>
</tr>
<tr>
<td>Degrees of Hearing Loss</td>
<td>50</td>
</tr>
<tr>
<td>Medical Diagnoses</td>
<td>51</td>
</tr>
<tr>
<td>Co-Morbidities</td>
<td>53</td>
</tr>
<tr>
<td>Co-Morbidities Identified</td>
<td>53</td>
</tr>
<tr>
<td>Relationship between Degrees of Hearing Loss and Co-Morbidities Identified</td>
<td>55</td>
</tr>
<tr>
<td>Analysis of Co-morbidities over the time period of the study</td>
<td>56</td>
</tr>
<tr>
<td>Referrals</td>
<td>57</td>
</tr>
<tr>
<td>Educational Placement</td>
<td>59</td>
</tr>
<tr>
<td>Summary of Results</td>
<td>62</td>
</tr>
</tbody>
</table>

# CHAPTER FIVE: DISCUSSION

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>63</td>
</tr>
<tr>
<td>Findings</td>
<td>63</td>
</tr>
<tr>
<td>Co-morbidities identified and the prevalence</td>
<td>63</td>
</tr>
<tr>
<td>Relationship between degrees of hearing loss and co-morbidities</td>
<td>71</td>
</tr>
<tr>
<td>Services provided at the CLAHIC</td>
<td>71</td>
</tr>
<tr>
<td>Summary</td>
<td>74</td>
</tr>
</tbody>
</table>
CHAPTER SIX: CONCLUSION

Introduction ........................................................................................................... 76
Summary of Findings ............................................................................................ 76
Strengths .............................................................................................................. 77
Limitations ........................................................................................................... 78
Future Research .................................................................................................. 78
Implications of the Research .............................................................................. 78
References .......................................................................................................... 80
CO-MORBIDITIES OF HEARING LOSS

List of Tables

Table 1: Distribution of Co-morbidities.................................................................17
Table 2: Description of the Structure of the Checklist............................................40
Table 3: Biographical Data of Participants.............................................................49
Table 4: Prevalence of Co-morbidities.................................................................54
Table 5: Degrees of Hearing Loss and Co-morbidities..........................................55
Table 6: Number of Children per year and age range.........................................56
Table 7: Referrals to a Psychologist.................................................................57
Table 8: Referrals to a Development Specialist....................................................58
Table 9: Educational placement at a Remedial School........................................60
Table 10: Educational placement at the CLAHIC..............................................61
List of Figures

Figure 1: Degrees of hearing loss: Left and Right Ear…………………………………………………………50

Figure 2: Degrees of Hearing Loss per Ear……………………………………………………………………51

Figure 3: Participants Diagnosed with a Medical Problem………………………………………………52

Figure 4: Placement of Children into Educational Settings………………………………………………59
List of Appendices

Appendix A: Raw Data of Pilot Study ..........................................................100
Appendix B: Ethical Clearance from the University of the Witwatersrand .................102
Appendix C: Letter of Consent from the CLAHIC .............................................103
Appendix D: Consent from Parents Study ......................................................106