A REPORT OF A SCHOOL PSYCHOLOGY INTERNSHIP AT THE WESTERN AVALON ROMAN CATHOLIC SCHOOL BOARD, INCLUDING A REPORT OF A RESEARCH STUDY TITLED, SPECIAL EDUCATION TEACHERS' BELIEFS ABOUT STIMULANT MEDICATION IN THE TREATMENT OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

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by

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ABSTRACT

This report describes a nine-week internship programme at the Western Avalon Roman Catholic School Board in Avondale. The general goals, objectives and the activities carried out to accomplish these goals, as well as the effectiveness and limitations of the internship are described in the first two chapters of this report. Details of the research project titled, "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder (ADHD)," are described in the third chapter.

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CHAPTER I

INTRODUCTION

Rationale for the Internship

As part of the requirements for a Master's Degree in Education Psychology, students may choose to either complete a thesis, paper folio, project, or do an internship which includes a minor research component. The internship option requires a minimum of eight consecutive weeks of placement in a setting appropriate to a student's eventual employment interest.

The intern, having learned much about her strengths and skills as a potential school psychologist during her practicum experience at the Western Avalon Roman Catholic School Board, wished to further develop competencies in consultation and assessment and other areas which school psychologists are expected to perform. The internship would provide extensive on-the-job training to allow the intern to acquire, practice and develop these necessary skills. In addition, this practical experience would allow the intern to gain further knowledge of some of the clinical syndromes and disorders children experience and to become more aware of the types of intervention strategies used to treat such conditions.

Given the intern's interests, along with the desire to receive feedback from and seek consultation with other professionals in developing these skills, the internship option is considered to be the most appropriate for accomplishing these goals.

The Internship Setting

The intern's interest lies in working with students from different age groups at the primary, elementary, and secondary levels, and she wished to experience the duties of a school psychologist in a rural setting. For these reasons the Western Avalon Roman Catholic School Board at Avondale was chosen as the setting for the internship.

The Western Avalon Roman Catholic School Board is responsible for twenty-seven schools in the Western Avalon Region. At the time of the internship, the School Board consisted of 15 full time professional staff members and 11 support staff. Although the Educational Psychologist, Jerry Blackmore, is stationed at Roncalli Central High School in Avondale, he is responsible for 14 schools within the Western Avalon Roman Catholic School Board, a student population of approximately 3200. See Appendix A for the schools at the Western Avalon Roman Catholic School Board for which the Educational Psychologist, Jerry Blackmore, is responsible.

Supervision

Jerry Blackmore provided the intern with on-site supervision for the nine-week internship. The intern met with the supervisor daily to discuss referral cases, experiences, and other concerns that arose during the internship.

Regular meetings were also held with the intern's university supervisors, Dr. Julia O'Sullivan and Dr. William Kennedy. Regular meetings were held with Dr. Julia O'Sullivan to discuss the research project. Dr. William Kennedy visited Roncalli

Central High School in Avondale to discuss the intern's progress in the setting and to talk about any concerns that the intern may have been experiencing. Both Dr. Julia O'Sullivan and Dr. William Kennedy provided the intern with valuable support and guidance throughout the internship.

Internship Goals and Specific Objectives

According to the Newfoundland and Labrador Department of Education (1992a), school psychologists are expected to provide a range of direct and indirect services to their clients which require involvement with the entire educational system. The purpose of these services is to promote mental health and facilitate learning. Although the following services are listed separately, these activities complement one another and therefore are most accurately viewed as being integrated and coordinated rather than discrete services:

A. Consultation

B. Psychological & Psychoeducational Assessment

C. Interventions

D. Supervision

E. Research

F. Program Planning and Evaluation

G. Continuing Professional Development

In devising goals for the internship, these services were kept in mind. After

being supervised and directed by both the internship field supervisor and the university internship program supervisors, the following goals and specific objectives were decided upon. The internship goals and specific objectives were categorized under general headings as indicated below.

Consultation

Goal 1: To further develop skills in consultation.

Specific Objectives:

A. To attend meetings with the school psychologist and observe consultation.

B. To establish good working relationship with parents, the school personnel and outside personnel of the clients who have been referred for psychological services.

C. To consult and collaborate with school personnel, parents and other outside personnel regarding mental health, behavioral and educational concerns as required.

Psychological and Psychoeducational Assessment

Goal 2: To further develop and enhance skills in the area of formal assessment techniques.

Specific Objectives:

A. To become familiar with the psychometric properties of different standardized instruments.

B. To administer various standardized instruments to assess areas of personal-social

adjustment, intelligence-scholastic aptitude, adaptive behavior, language and communication skills, academic achievement and sensory and perceptual-motor functioning.

C. To learn more about the interpretations and recommendations that arise from standardized assessments through discussions with school psychologists, readings and research.

Goal 3: To further develop and enhance skills in the area of informal assessment techniques.

Specific Objectives:

A. To develop and enhance observation skills needed for assessment practices.

B. To further develop interviewing skills.

Report Writing

Goal 4: To develop skills and obtain experience in the style of writing used in reports of psychoeducational assessments.

Specific Objectives:

A. To examine psychoeducational reports on file at the School Board.

B. To practice report writing skills.

Intervention

Goal 5: To provide direct and indirect interventions to facilitate the functioning of

individuals.

Specific Objectives:

A. To specify goals, objectives, strategies, evaluation criteria, follow-up dates and responsibilities in order to ensure that data on progress are collected and discussed in cases of intervention.

B. To provide inservices for educators/parents on prevention/intervention matters as required.

Program Planning and Evaluation

Goal 6: To assist in developing and implementing programs under the supervision of the school psychologist.

Specific Objective:

A. To participate in individual program planning teams.

Continuing Professional Development

Goal 7: To actively participate and engage in activities designed to continue, enhance, and upgrade professional training and skills to ensure quality service.

Specific Objectives:

A. To explore a number of assessment materials, journals, books and other reference sources to develop skills and knowledge in areas of interest.

B. To expand knowledge of the nature of a variety of clinical syndromes and

disorders children experience and to become aware of the diagnostic methods used to identify these disorders.

C. To develop a loose-leaf file of diagnostic and remedial strategies for quick reference while out in the field.

D. To participate in an inservice if the opportunity arises.

Research

Goal 8: To complete a project which would meet the research requirement for the completion of the internship and which would be relevant and useful to the district personnel at the Western Avalon Roman Catholic School Board.

After consultation with the field supervisor and the university supervisors, the intern decided to undertake a research project which had the following purpose: to examine the beliefs of the special education teachers at the Western Avalon Roman Catholic School Board about the use of stimulant medication in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD).

CHAPTER II

THE INTERNSHIP: A DESCRIPTION OF ACTIVITIES

Introduction

The internship at the Western Avalon Roman Catholic School Board took place from April 16, 1996 to June 18, 1996, for a period of nine weeks. The purpose of this chapter is to provide a description of the activities in which the intern participated in order to accomplish the internship goals and specific objectives as outlined in chapter one. The concluding section of this chapter will focus on how those experiences helped fulfill the stated objectives.

Internship Goals and Activities

Consultation

Goal 1: To further develop skills in consultation.

Specific Objectives:

A. To attend meetings with the school psychologist and observe consultation.

B. To establish good working relationship with parents, the school personnel and outside personnel of the clients who have been referred for psychological services.

C. To consult and collaborate with school personnel, parents and other outside personnel regarding mental health, behavioral and educational concerns as required.

Activities performed to accomplish this goal were:

1. The intern attended two meetings with the field supervisor to observe the consultation process. On one occasion, the intern accompanied her field supervisor to

meet with a 19-year-old male and his parents at their home. This male had been convicted of assaulting a guidance counsellor at the school he had previously attended. He was also convicted of a break and entry which had occurred at the same school. He had served time at both the Youth Correctional Centre in Whitbourne and the penitentiary in St. John's. The purpose of the meeting was to determine the student's sincerity in wanting to continue his education and to discuss what placement options were available to him. Because of the student's age, his history with violence and poor anger control, it was decided that his readmission to the same school would likely produce behaviors similar to that which had led to problems with the law and which had produced great frustration for him. When it was suggested that a home study program or enrolment in an Adult Basic Education Program might be possible alternatives, the student became extremely upset, started swearing and left the house in a rage. Subsequently, both parents agreed that an adult environment would be more suitable for addressing his needs since the rules would be more flexible and he would have greater responsibility for his own learning. The parents were given some information regarding application forms, fees, and counselling services available at the institution.

On another occasion, the intern observed her field supervisor consult with a guidance counsellor at Laval High School in Placentia regarding a Level II female student who was experiencing extreme test anxiety. The anxiety manifested itself by obsessive behavior such as spending extraordinary amounts of time studying without

allowing time to engage in other activities. Her obsessive behavior was starting to interfere with everyday normal functioning. During the past year the student attempted suicide twice and was admitted to the Janeway Child Health Centre. Although the guidance counsellor had been counselling the student on an on-going basis for the past year, he felt that he had not made any substantial amount of progress with helping to alleviate the student's anxiety and her obsession with studying and marks.

During this meeting the guidance counsellor informed the field supervisor of what types of intervention strategies had been put in place over the past year. In addition, during this consultation session the guidance counsellor, the field supervisor and the intern explored what intervention options were available. It was decided that the student would be exempted from all final exams this year. Also, the student would receive a letter rather than a numerical grade on all future tests this year. This was done to help the student to avoid obsessing on marks. The resulting plan of action was believed to be the most appropriate at the present time since the student would be facing extreme anxiety with final exams approaching in June. The guidance counsellor was encouraged to keep the field supervisor informed of the student's progress.

2. In order to gain a better understanding of some of the important issues involved in consultation, the intern reviewed Chapter 24 of Assessment of Children by Sattler (1992) pp.763-799. In particular, the ethical standards of psychologists were studied carefully and consultation techniques for working with parents and teachers were reviewed. Such readings provided the intern with a greater appreciation of the

responsibilities associated with the professional role of a school psychologist.

3. On occasions throughout the internship the intern consulted and collaborated with school personnel in the following schools: St. Joseph's Elementary, Harbour Main; Holy Cross Elementary, Holyrood; St. Edward's Elementary, Brigus; Roncalli Central High School, Avondale; All Hallow's Elementary, North River; Dunne Memorial Primary, Riverhead; Fatima All Grade, St. Bride's; and Bishop O'Neill, Brigus. Several meetings with teachers, both individually and in small groups, were held to discuss students who had been referred from their classes. The intern discussed with the school administrators the recommendations that were suggested for various students relating to academic and behavioral interventions.

4. The intern participated in three case conferences each of which involved teachers, administrators, guidance counsellors, educational psychologists, speech-language pathologists, parents and other outside personnel such as a social workers from the Janeway Child Health Centre. For example, the intern accompanied her field supervisor to attend two case conferences at Holy Cross Elementary, Holyrood. Here the field supervisor and the intern met with the principal, the guidance counsellor, the Grade 2 teacher, the instructional resource teacher, the coordinator of special services, a social worker from the Janeway, and the parents to discuss the assessment findings of his report as they related to the child's eligibility for special services under Criteria C of the Challenging Needs documentation process.

During this meeting the assessment findings and recommendations were

presented. The consultation process involved more than just a recitation of the results or a reading of the report. The entire process required much sensitivity and an understanding of the feelings, needs, and desires of the parents. The assessment results were explained in understandable terms in order to help the parents recognize the nature of the problem and to accept the implications of the findings. Throughout the meeting the parents were encouraged to ask questions regarding the specific diagnosis and to discuss any concerns they may have had about the future effect of Criteria C classification on the child's programming and placement. In particular, the parents were concerned about the amount of integration in the regular classroom their child would receive. It became apparent to the intern that it is essential that the parents view themselves as part of the team process since they play an important role in carrying out the recommendations.

Another case conference in which the intern participated was held at Roncalli Central High School in Avondale. The purpose of this meeting was to discuss a Grade 9 student who had been referred after being suspended from school for threatening teachers and being extremely disruptive during class time. Individuals present at this meeting included the vice-principal, the guidance counsellor, the instructional resource teacher, the school psychologist, a social worker from the Janeway and a foster parent. This student had a history of violent and abusive behavior and had been referred to the Janeway Child Health Centre after he had threatened to commit suicide. The school team wished to discuss all available options to determine the most appropriate

placement to accommodate his needs since the school team felt it did not have the resources to effectively address them. The social worker agreed to investigate the alternative placements and to discuss her findings at a later date.

5. Consultations with the speech-language pathologist at the Avalon North Integrated School Board were held to discuss possible assessment approaches and recommendations for a Grade 3 student who was referred for an evaluation of a reading disability. After the presentation and discussion of the assessment results obtained by the speech-language pathologist and the intern, it was decided that the speech-language pathologist would administer the Woodcock-Johnson Proficiency Battery for Language-Revised in order to explore the student's phonological awareness since many students who experience reading difficulties have problems in this area.

The intern also consulted with an educational psychologist at the Avalon North Integrated School Board who had previously worked with this child. Because the parents wished to have their child assessed for Scotopic Sensitivity Syndrome and the intern had received no training in this area, the educational psychologist at the Avalon North Integrated School Board agreed to complete the assessment. With the permission of the parents, the results of the achievement and intelligence tests were forwarded to the educational psychologist at the Avalon North Integrated School Board.

6. The intern consulted with the field supervisor and the guidance counsellor at Roncalli Central High School in Avondale to discuss experiences and referral cases on a daily basis. The advice and support provided by the field supervisor and the

guidance counsellor at Roncalli Central High School was a vital component of the internship program and was found to be important to the intern's overall development.

7. The intern also attended monthly meetings with the educational psychologists at the Avalon North Integrated School Board. During one meeting the diagnostic methods and instruments used to diagnose Attention-Deficit/Hyperactivity Disorder were discussed. Discussion at another meeting focused on the educational psychologists role in the determination of a student's eligibility for receiving resources allocated by the Department of Education under Criteria C.

Psychological and Psychoeducational Assessment

Goal 2: To further develop and enhance skills in the area of formal assessment techniques.

Specific Objectives:

A. To become familiar with the psychometric properties of different standardized instruments.

B. To administer various standardized instruments to assess areas of personal-social adjustment, intelligence-scholastic aptitude, adaptive behaviour, language and communication skills, academic achievement and sensory and perceptual-motor functioning.

C. To learn more about the interpretations and recommendations that arise from standardized assessments through discussions with school psychologists, readings and

research.

The activities performed to meet the goal of further developing and enhancing skills in the area of formal assessment techniques were:

1. The intern studied the psychometric properties of different standardized instruments. The field supervisor reviewed with the intern all pertinent materials, techniques, and procedures required for proper administration of a test instrument. A complete list of tests examined is presented in Appendix B.

2. The intern observed her field supervisor administer, score and interpret a number of different standardized instruments such as the Test of Auditory-Perceptual Skills (TAPS), The Raven Standard Progressive Matrices, Adaptive Behaviour Scale (ABS-SE), Conner's Parent Rating Scale (CPRS), Conner's Teacher Rating Scale (CTRS) and Disruptive Behaviour Rating Scale (DBRS).

3. When the field supervisor assigned a student for an assessment, he discussed with the intern which instruments were required to be administered and why the information provided would be necessary or useful for that student.

Before the administration of any assessment instrument the intern tried to establish rapport with the student. For those students who felt apprehensive about the testing situation, the intern tried to provide reassurance and support by explaining the purpose of the testing. Sometimes reluctant students needed to be encouraged to respond to a question. The student's effort rather than the results of their effort were praised.

The intern administered, scored and interpreted the results of standardized tests. A list of the tests used and the number of assessments completed with these instruments is included in Appendix C. Throughout the internship, the intern discussed with the field supervisor the results obtained from various assessment instruments and how the results could be interpreted and incorporated within a written report.

4. The intern completed extensive readings about the interpretations and recommendations that arise from various standardized assessments. Examples of such reading were:

Truch, S. (1993). The WISC-III companion: A guide to interpretation and educational intervention. Austin, Texas: PRO-ED, Inc.

Whitworth, J. R., & Sutton, D. L. (1978). WISC-R complication: What to do now that you know the score. Novato, California: Academic Therapy Publications.

Goal 3: To further develop and enhance skills in the area of informal assessment techniques.

Specific Objective:

A. To develop and enhance observation skills needed for assessment practices.

Activities performed to accomplish this objective were:

1. The intern read Chapter 17 of Assessment of Children by Sattler (1992) pp. 472-530 in order to gain a better understanding of the observational techniques used to assess behavior.

2. Throughout the internship period the intern completed several behavioral observations in the following schools: Holy Cross Elementary, Holyrood; St. Edward's

Elementary, Brigus; Roncalli Central High School, Avondale; All Hallow's Elementary, North River; and Dunne Memorial Primary, Riverhead. On nine different occasions the intern observed the behavior of seven different students who had been referred to educational psychologist for assessment. Four of these students were referred because of problems associated with inattentiveness, distractibility and the inability to sustain attention.

Behavioral observations were invaluable in diagnosing Attention-Deficit/Hyperactivity Disorder. According to the Diagnostic and Statistical Manual Of Mental Disorders (4th ed.), the essential feature of Attention-Deficit/Hyperactivity Disorder is a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than typically observed in individuals at a comparable level of development. The classroom observations provided the intern with a systematic record of both the student's behavior and the behaviors of others. This helped to determine whether or not the child's behavior was substantially different from the behaviors of others. Because it is very unusual for individuals to display the same level of dysfunction in all settings or within the same setting at all times, the intern completed observations during different scheduled activities and with different teachers in order to determine whether or not the behavior pattern was consistent.

In one case, the intern completed a behavioral observation on a Grade 1 student in which the classroom environment was so disorganized and chaotic that it was virtually impossible to observe and isolate the behavioral problem of the child. During

the lesson many children were chatting when they were suppose to be listening to the teacher. Several students got out of their seats without permission. The teacher continued to teach, failing to stop the distractions. Before completing the assessment on this particular child, the intern provided the teacher with some guidance regarding classroom discipline.

Behavioral observations gave the intern the opportunity to compare the child's behavior in the test situation and the behavior in more naturalistic situations such as in the classroom. Furthermore, classroom observations allowed the intern to verify the accuracy of parental and teacher reports regarding the child's behavior. In some instances the teacher's perception of the problem behavior was quite different from the parent's perception. Last of all, behavioral observations were especially helpful when the intern was required to assess a developmentally delayed Grade 6 student who could not be evaluated easily by other means.

3. To determine interobserver reliability for the behavioral observations, the intern and the field supervisor recorded observations while simultaneously and independently observing a Grade 1 student at Dunne Memorial Primary, Riverhead on two different occasions. This activity was beneficial in that it provided the intern with the opportunity to compare her findings with those of another experienced observer.

Specific Objective:

B. To further develop interviewing skills.

To achieve this objective the following activities were carried out by the intern:

1. Readings on assessment of behavior by interview methods were read by the intern. An example of such readings was: Chapter 16 of Assessment of Children by Sattler (1992) pp. 400-471.

2. The intern observed her field supervisor conduct pre-assessment interviews with parents of children referred to the school psychologist. The intern learned from these sessions how a pre-assessment interview is conducted and what types of information are required to fully establish the child's history. Relevant experience with similar cases also seemed quite important in helping the field supervisor arrive at the type of questioning that might elicit meaningful information.

3. The intern completed seven pre-assessment interviews with parents/guardians of students who were referred for psychoeducational assessment. The pre-assessment interview allowed the intern to: assess the parents/guardians perceptions of the child's problem; obtain a case history; identify problem areas and related antecedent and consequent events; identify reinforcing events for both child and parents; assess parent's motivation and resources for change; obtain informed consent; and discuss assessment procedures and follow-up contacts (Sattler, 1992).

The Semi-Structured Interview with Parents from Sattler (1992) was used in all cases. However, the intern had to remain flexible with her questions in that the parents would provide additional information that required further probing. When discussing the parent's parenting skills, the intern emphasized their constructive and helpful

approaches rather than less effective approaches. This helped to gain their cooperation.

4. The Semi-Structured Interview with Teachers from Sattler (1992) was used to gather information about the referred student. Initial interviews with the teachers provided the intern with the opportunity to: examine the teacher's perception of the problem; clarify any misunderstandings and ambiguous responses on the referral document; explore what has been done to alleviate the problem; examine how other children and teachers react to the referred child; and, explore how the referred child performs academically.

During the internship period, the intern became more confident and the interviews appeared to flow more smoothly. The intern became less preoccupied with the types of questions to ask and was able to listen more carefully to the interviewee's verbal responses and to interpret nonverbal communications more effectively. In some cases, the intern noted discrepant communications in that the interviewee's verbal responses and nonverbal behavior were incongruent. For instance, during one interview the intern noticed that while the teacher tried to portray that she was relaxed by the choice of words she used to described the problem situation, the defensive tone of her voice and her flushed skin did not convey the same message. The intern remained objective and listened to her frustrations. The teacher's feelings of inadequacy in dealing with the student's problem behavior became apparent throughout the interview. By emphasizing the teacher's strengths in helping remediate the problem behavior, the teacher became more at ease and willing to contribute to the process.

Reflection upon this interview helped the intern realize how important it is to avoid power struggles between teachers and parents. Such power struggles will only interfere with the communication process. The intern also became aware of the importance of effective listening and summarizing skills. Sensitivity to the reactions of the interviewee also emerged as another important skill of a psychologist.

After each interview the intern met the field supervisor to discuss details of interest and concern which had arisen during the interview. In some cases the field supervisor provided the intern with further insight into the nature of the problem which lead to further probing in later interviews.

5. At St. Edward's Elementary in Brigus, the intern prepared and conducted a diagnostic mathematical interview on a Grade 5 student who was experiencing difficulty with her basic addition and multiplication facts and algorithms. During the initial interview the intern explored the student's conceptual and procedural understanding of place value, addition, subtraction, multiplication, and division at the concrete, pictorial and symbolic levels. The mathematical diagnostic interview was useful in identifying what math concepts at each level had been mastered. This helped to determine what new skills needed to be taught. Because students tend to understand a math concept better when teaching progresses from the concrete to the abstract, the intern wished to determine the student's understanding at each level so that appropriate intervention suggestions could be provided.

6. The intern observed her field supervisor conduct post-assessment interviews

with parents and teachers. On one occasion the field supervisor presented the assessment findings and recommendations to the parent of a Grade 2 student who had been referred because she was experiencing reading difficulties. The assessment results were explained thoroughly and the parent was provided with explanations for the conclusions and recommendations. The intern noticed that the field supervisor was direct and honest with the parent and that he avoided technical jargon. The parents were encouraged to ask questions about the assessment results and recommendations.

7. Post-assessment interviews were conducted with parents and teachers of children who had been assessed earlier by the intern to discuss assessment results and remediation. In the case of a student who was diagnosed with Attention-Deficit/Hyperactivity Disorder, the intern met with the parents, the principal and the teacher separately to explain the findings in the report before meeting with them all together as a program planning team. All members were encouraged to ask questions about the assessment process, the diagnosis, and the basis upon which the conclusions and the suggested recommendations were made.

These individual post-assessment meetings proved to be beneficial in that the parents and the school team could express their concerns freely without being inhibited. In addition, it provided the team with the time to think about the recommendations before meeting as a group to discuss the specifics of the implementation of the behavioral management program.

On another occasion the intern met with the Grade 5 teacher at St. Edward's

Elementary in Brigus to discuss the assessment findings and specific recommendations for a student who was referred because of difficulties with mathematics. There was a substantial discrepancy between her level of achievement in mathematics and that which would be expected based on the estimated overall intellectual ability as measured by the Wechsler Intelligence Scale (WISC-III). This indicated a need for academic remediation in mathematical skills.

The teacher was given activities to help remediate the student's difficulties. For example, based on the diagnostic interview the student had learned the operational procedure of multiplication and addition without really understanding the underlying concepts. For this reason she sometimes confused the algorithms. The teacher was provided with specific remedial activities to help facilitate the student's connection between the addition and multiplication algorithms and the meaning of numbers (i.e. place value). In addition, during the diagnostic interview it was evident that the student had difficulties in the automatic recall of her addition and multiplication facts. The teacher was given some suggestions to provide the student with practice to overlearn the math concepts so that the student would be able to recall and use them automatically. In order to provide specific interventions to remediate mathematical difficulties, it is essential to complete a thorough assessment to identify the problem areas.

Report Writing

Goal 4: To develop skills and obtain experience in the style of writing used in reports of psychoeducational assessments.

The activities performed to meet this goal were:

1. Several psychoeducational reports on file at the Western Avalon Roman Catholic School Board were examined by the intern.

2. The report writing chapter of Sattler's (1992) Assessment of Children (pp. 725-726) was reviewed. The intern used the report outline as suggested by Sattler (1992) when writing the psychoeducational reports.

3. The intern wrote seven reports for 10 children she had assessed during the internship. Psychoeducational reports were written as soon as possible after the evaluation had been completed to ensure that important details were not forgotten.

Assessment findings that were not considered a valid or a reliable indicator of the child's ability or behavior were not interpreted or reported. For example, the intern omitted results obtained on The Raven Standard Progressive Matrices for a Grade 1 student because the child appeared bored with the testing situation and he started guessing answers randomly. References to the child's behavior during the administration of this instrument were included in the report as further confirmation of the observations reported by the classroom teacher. It was evident from this experience that in the intern's future practice she would incorporate all observational data since such data offers useful knowledge.

Consultations with the field supervisor were held to discuss assessment findings and intervention strategies. The field supervisor provided the intern with feedback throughout the writing process so that necessary revisions could be made. To write a report that communicates the assessment findings clearly and concisely requires much thought, effort and consideration.

Intervention

Goal 5: To provide direct and indirect interventions to facilitate the functioning of individuals.

Specific Objectives:

A. To specify goals, objectives, strategies, evaluation criteria, follow-up dates and responsibilities in order to ensure that data on progress are collected and discussed in cases of intervention.

B. To provide inservices for educators/parents on prevention/intervention matters as required.

The activities performed to meet this goal were:

1. After completing a thorough assessment which included several classroom observations, discussions with parents and teachers, and the results from a number of different behavioral rating scales, the intern concluded that the behavior of two students assessed during the internship was consistent with the diagnosis of Attention-Deficit/Hyperactivity Disorder. Based on this diagnosis, the intern developed goals and

objectives of individualized programs for these children. Also, evaluation criteria, follow-up dates and responsibilities were outlined in order to ensure that data on progress were collected and discussed. For example, the intern outlined the following three goals for a Grade 1 student who was diagnosed as having Attention-Deficit/Hyperactivity Disorder:

1. To improve socialization skills.

2. To develop coping skills to enable him to attend and stay on tasks for longer periods of time in the classroom setting.

3. To reduce disruptive and inappropriate behaviors by consistently implementing consequences designed for specific behaviors.

To accomplish goal 1 of the program, the guidance counsellor was given a number of different social skill training activities from Mannix (1993) to help improve the student's social skills. In order to accomplish goals 2 and 3 the intern provided the teacher with a behavior management plan which included behavioral rating cards and progress charts. See Appendix E for an example of a behavioral rating card and a sample progress chart.

The behavioral rating card is a tool which can be useful in programming behavior change in an individual. It can be modified so that the child may receive feedback across different situations, behaviors, and individuals.

The intern found that the progress chart served several useful purposes in the behavior change process. It provided an ongoing record of the target behavior and it

involved the child in the measurement of progress. It also encouraged parents to look positively at the child's behaviors and summarized the components of the program. The accumulation of stars, checks or points provided a readily available visual representation of what was occurring. Seeing progress in measurable terms often served to reinforce appropriate behaviors of both parents and children.

Initially, the classroom teacher appeared hesitant to implement the program in that she believed it would be too time consuming. In this situation the intern listened to her concerns and stressed the importance of implementing such a program. After considering the assets and limitations of the classroom setting and the teacher's concerns regarding the intervention strategy, the intern made some modifications to the behavioral program. All members of the program planning team seemed pleased with the resulting plan of action.

2. The intern provided teachers and parents with books, pamphlets and videos regarding Attention-Deficit/Hyperactivity Disorder and Pervasive Developmental Disorder so that they might gain a better understanding of the characteristics of these disorders.

3. Information on remediation techniques and strategies were read, copied as permitted and organized into a loose-leaf file for quick reference while out in the field. The material was organized into such categories as:

Reading remediation activities

Spelling remediation activities

Written language remediation activities

Mathematical remediation activities

General techniques for teaching the learning disabled child

Techniques for helping the Attention Deficit child

Behaviour management techniques

Parental suggestions for child management problems

Classroom discipline strategies

Social skill activities

Strategies for parents and professionals for dealing with Autism and Pervasive Developmental Disorder

Suggestions for students with auditory/verbal memory deficits

Death/depression (Helping children cope)

Crisis intervention techniques

Readings in Appendix D contains some of the information that was read and copied for future reference.

Program Planning and Evaluation

Goal 6: To assist in developing and implementing programs under the supervision of the school psychologist.

Specific Objective:

A. To participate in individual program planning teams.

Activities performed to meet this goal were:

1. The intern studied previous Individual Educational Programs and Challenging Needs Documentation Reports (Criteria C) on file at the Western Avalon Roman Catholic School Board.

2. The intern assisted in the preparation of a report for Challenging Needs Documentation under Criteria C for a Grade 6 student who was referred due to his inability to cope with the modified academic curriculum. The intern realized that as part of the multidisciplinary team in her role as a school psychologist she will be required to play an important part in the determination of the appropriate allocation of educational resources for students with exceptional needs.

Continuing Professional Development

Goal 7: To actively participate and engage in activities designed to continue, enhance, and upgrade professional training and skills to ensure quality service.

Specific Objectives:

A. To explore a number of assessment materials, journals, books and other reference sources to develop skills and knowledge in areas of interest.

B. To expand knowledge of the nature of a variety of clinical syndromes and disorders children experience and to become aware of the diagnostic methods used to identify these disorders.

C. To develop a loose-leaf file of diagnostic and remedial strategies for quick

reference while out in the field.

D. To participate in an inservice to enhance and upgrade professional skills in identifying reading problems if the opportunity arises.

The activities performed to achieve this goal were:

1. The intern reviewed many journals, books and other reference sources to develop skills and knowledge in the following areas of interest: Attention-Deficit/Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder, Behavioral Disorders, Social Skills Deficits, Reading Disabilities, Mathematics Disabilities, General Learning Disabilities, Crisis Prevention/Intervention, Child Abuse, Autism/Pervasive Developmental Disorder and Brain Injury . See Appendix D for a complete list of readings examined. These readings provided the intern with opportunity to expand her present knowledge of the nature of clinical syndromes and disorders children often experience. Also, it allowed the intern to become more familiar with the diagnostic criteria used to identify these disorders and conditions.

2. Informal discussions were held between the intern, the field supervisor and the educational psychologists at the Avalon North Integrated School Board concerning the assessment, diagnosis, and remediation of Reading Disabilities, Scotopic Sensitivity Syndrome, Attention Deficit Disorders, Pervasive Developmental Disorder, Conduct Disorder, and Oppositional Defiant Disorder.

Research

Goal 8: To examine special education teachers' beliefs about stimulant medication in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD).

The activities performed to accomplish this goal were:

1. The intern designed and administered a questionnaire in order to collect demographic data relating to the participants and information about their beliefs regarding this pharmaceutical intervention.

2. Literature dealing with the following issues related to Attention-Deficit/Hyperactivity Disorder (ADHD) was reviewed: what is ADHD; how prevalent is ADHD; the causes of ADHD; the use of stimulant medication as a treatment for ADHD; the beneficial and negative effects of stimulant medication; and the teacher's role in the treatment of ADHD.

3. Regular meetings with Dr. Julia O'Sullivan, university supervisor, were held to discuss the research project.

4. Data collected from the research subjects was analyzed and discussed in this report.

Details of the research component of the internship are presented in the third chapter of this report.

Conclusion

The nine-week internship at the Western Avalon Roman Catholic School Board proved to be a highly valuable experience. The intern had the opportunity to experience and compare the role of a school psychologist in a rural setting to that of an urban setting. Based on the intern's experiences at the Avalon Consolidated Integrated School Board in St. John's, the school psychologist's role in a rural setting seems to be much more diverse in that there is less opportunity to specialize in an area of interest or an age group. Being responsible for students over a large geographical location, the intern realized that to utilize time efficiently and effectively one must develop good time management and organizational skills.

The intern accomplished most of the goals she wished to achieve during the internship period. The intern became actively involved in a variety of activities which helped develop and enhance her competencies in consultation, formal and informal assessment, and report writing. Also, this practical experience allowed the intern to gain further knowledge of some of the clinical syndromes and disorders that children often experience. The intern became more familiar with the diagnostic methods used to identify these children and the types of intervention strategies used to treat such conditions. The research project completed at the Western Avalon Roman Catholic School Board was especially helpful in making the intern more knowledgeable of the assessment techniques, the diagnostic criteria and specific intervention strategies used to treat Attention-Deficit/Hyperactivity Disorder. Similarly, by participating in case

conferences, reviewing and assisting in the preparation of reports for Challenging Needs documentation under Criteria C. the intern is more informed of the process involved in identifying children with exceptional needs and the resources available to address them.

Although the intern wished to participate in an inservice to enhance and upgrade professional skills in identifying reading problems, this was not possible. However, the intern was able to review several journals and books which allowed her to acquire further knowledge in this area as well as other areas of interest. Informal discussions with the field supervisor and the educational psychologists at the Avalon North Integrated School Board were also very informative in that resources were shared and discussed. Similarly, although the intern was unable to inservice educators on prevention and intervention matters related to learning disabilities, the intern read, collected and organized materials on prevention and intervention strategies for learning disabilities and other topics of interest so that it is available for future reference.

The internship period provided the intern with the opportunity to work with students of different age groups at the primary, elementary, and secondary levels. Many of the referred students were of the primary and elementary level with fewer students at the junior and senior high level. The intern had two years teaching experience at the junior and senior high level, therefore the intern felt that the increased exposure to the younger age groups was beneficial. The intern became more familiar with the shorter attention spans and activity levels of younger children which enabled

her to develop more effective assessment techniques. In addition, the fact that more primary and elementary students were being referred to the school psychologist for academic and behavioral difficulties was viewed positively in that it appears that children are being identified at younger ages. This is important since intervention techniques appear to be more effective when the problem area is identified and remediated at an early age.

A wide range of cases were considered during the course of the internship. The intern gained a substantial amount of experience working with and developing intervention strategies for children with problems associated with inattentiveness, distractibility, and the inability to sustain attention. Similarly, the intern had the opportunity to assess and provide teachers and parents with specific intervention activities for children who were experiencing academic difficulties in reading, writing, and mathematics.

In conclusion, the internship option proved to be extremely worthwhile experience and played an important part in the intern's overall development as a future school psychologist.

CHAPTER III

THE RESEARCH PROJECT: SPECIAL EDUCATION TEACHERS' BELIEFS ABOUT STIMULANT MEDICATION IN THE TREATMENT OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD).

Summary

The purpose of this research project was to examine the beliefs of the special education teachers at the Western Avalon Roman Catholic School Board about the use of stimulant medication in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD). In particular, their beliefs about: (1) the adequacy of their university education and professional development training about the use of stimulant medication to treat ADHD; (2) the nature of ADHD; (3) the effectiveness and limitations of stimulant medication in the treatment of ADHD; and (4) the true (i.e., established) and false (i.e., not established) effects of stimulant medication were explored. Twenty-three teachers completed a 36-item questionnaire designed to measure their beliefs. Findings indicated that most of the special education teachers believed that they had not received adequate training about the use of stimulant medication in the treatment of ADHD. Most teachers believed that ADHD is a medical condition and that many children are diagnosed with this disorder who do not have it. Those beliefs are consistent with current research. The teachers did not discriminate between the true versus false effects of stimulant medication and, although they believed that this treatment is associated with negative side-effects, they did not recognize what most of those side-

effects are. The implications of these findings for the education of children with ADHD are discussed. Recommendations for inservice training to increase these special education teachers' understanding in this area are outlined.

Introduction

This section is organized as follows. First, Attention-Deficit/Hyperactivity Disorder (ADHD) is defined and prevalence statistics are presented. Then, research on the causes of Attention-Deficit/Hyperactivity Disorder (ADHD) is summarized. Next, the use of stimulant medication in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD), and the beneficial and negative effects of those medications are discussed. Also, the limitations of stimulant medication as a treatment for Attention-Deficit/Hyperactivity Disorder (ADHD) are described. Finally, the teacher's role in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD) is outlined, followed by the purpose of the present research project.

What Is Attention-Deficit/Hyperactivity Disorder?

Attention-Deficit/Hyperactivity Disorder (hereafter referred to as ADHD) is defined as a persistent pattern of inattention and/or hyperactive-impulsive behavior that is more frequent and severe than is typically observed in individuals at a comparable level of development (American Psychiatric Association, 1994). According to the 1994 American Psychiatric Association Diagnostic and Statistical Manual Of Mental

Disorders, Fourth Edition, (DSM-IV), a diagnosis of ADHD requires that: (a) symptoms must be present before age 7; (b) there must be clear evidence that the symptoms significantly interfere with social, academic or occupational development and functioning; (c) the symptoms must be present in two or more settings (e.g., at school and at home) and generally, they worsen in situations that require sustained attention or that lack intrinsic appeal or novelty; and (d) symptoms are not primarily due to a psychotic (e.g., Schizophrenia) or another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

In the DSM-IV, 18 characteristics of inattention, hyperactivity and impulsivity are described, and to be diagnosed with ADHD a child must exhibit at least six of these characteristics. For example, many children with this disorder do not seem to listen when spoken to directly and often appear as if their mind is somewhere else. Many often fail to pay attention to details, make careless mistakes in schoolwork, have difficulty concentrating on tasks, and often fail to complete tasks. These children often experience difficulties in organizing tasks or activities, tend to avoid or have a strong dislike for activities that require sustained mental effort such as schoolwork or homework, and lose things necessary for tasks or activities such as books, pencils, tools, etc. Children with this disorder may be distracted by irrelevant stimuli and may frequently interrupt ongoing tasks to attend to trivial noises or events that are usually ignored by others (e.g., a background conversation). These difficulties are evident in academic, social, and occupational contexts (American Psychiatric Association, 1994).

If hyperactivity is present, it may be manifested by fidgetiness, failing to remain seated when expected to do so, excessive running or climbing, appearing to be "driven by a motor" or talking excessively. These children will often blurt out answers before questions have been completed. They may have difficulty awaiting their turn in activities and may interrupt or intrude on others (e.g., butt into a conversation or game).

How Prevalent Is Attention-Deficit/Hyperactivity Disorder?

The prevalence of ADHD is typically estimated to be between 3 to 5 % of all school-age children (American Psychiatric Association, 1994). However, depending on how the disorder is defined, prevalence statistics range from <1% to 12% of the school-age population (Frick & Lahey, 1991). According to an estimate by the National Institute of Mental Health (Hancock, 1996), one student in every classroom is affected by it. Males are 5 to 10 times more likely to be diagnosed than females (Glow, 1980; Holborow, Berry, & Elkins, 1984).

ADHD is being diagnosed with increasing frequency in children, adolescents, and adults (Shaywitz & Shaywitz, 1991). However, considerable debate remains about the reliability and validity of the construct itself, about the diagnostic criteria for this disorder, and about its diagnosis in individual children. For example, attention disorders can be difficult to distinguish from learning disabilities, emotional problems, bad behavior, poor parenting, overly stressful environments, demanding schools,

laziness and lack of motivation (Copeland, 1991). There is growing concern in the mental health community that for a variety of social, educational, familial and psychological reasons, the diagnosis is being increasing applied to children whose behavior and development do not warrant it (Hancock, 1996).

What Causes Attention-Deficit/Hyperactivity Disorder?

Decades of research have failed to identify a specific cause, or group of causes, of ADHD. However, research has ruled out certain variables as primary and sufficient causes. These include: the consumption of sugar, food additives and dyes, vitamin deficiencies, lead poisoning, perinatal influences, birth complications, brain damage, and inappropriate parenting (Hust, 1994). Although these variables are no longer considered sufficient causes of ADHD, in some cases they may combine with other variables to bring about ADHD, exacerbate existing ADHD, or cause ADHD-like symptoms (Amaya-Jackson, Mesco, McGough, & Cantwell, 1992; Barkley, 1990).

Recently, increasing focus has been given to biological variables as possible causes of ADHD. For example, some researchers are investigating the hypothesis that ADHD may be the result of an inherited tendency towards dopamine depletion, or underactivity in those parts of the brain affecting attention, response inhibition (impulsivity), and sensitivity to the behavioral consequences (Amaya-Jackson et al., 1992; Barkley, 1990). Other researchers are investigating the chemical balance of neurotransmitters in children who are diagnosed with ADHD. There is some evidence

that some children with ADHD may have an inefficiency or imbalance of several neurotransmitters (Hust, 1994) and have lower glucose metabolism in their brains (Zametkin et al., 1990). Similarly, there is tentative evidence of decreased blood flow to the striatum and prefrontal regions of the brains of some children with ADHD (Lou, Henriksen, & Bruhn, 1984; Lou, Henriksen, Bruhn, Borner, & Nielsen, 1989). Overall, it appears that biological factors may play a role in some cases of ADHD but not others. Furthermore, even when biology is implicated there is no evidence that biological variables are sufficient to cause ADHD. Instead, biological mechanisms interact with psychological and environment variables to produce the symptoms of ADHD (Jacobvitz, Sroufe, Stewart, & Leffert, 1990). Clearly, considerable research is needed to elucidate the causal variables and pathways involved in ADHD.

How Common Is The Use Of Stimulant Medication To Treat Attention-Deficit/Hyperactivity Disorder?

The prescription of stimulant medications is the most frequent treatment for ADHD in the United States. Between 70% and 80% of children diagnosed with ADHD are treated with stimulant medication (Barkley, 1977). According to Safer (1988), this means that approximately 3% of the elementary school population in the United States, over 1 million children, is treated for ADHD with stimulants. Unfortunately, there are no published statistics on the number of children diagnosed with ADHD or being treated with stimulant medication in Newfoundland.

The three stimulant medications used most commonly to treat ADHD are methylphenidate (Ritalin), dextroamphetamine (Dexedrine) and pemoline (Cylert) (DuPaul, Barkley, & McMurray, 1991). Of these, Ritalin is the most commonly used and is prescribed for more than 90% of children receiving stimulant medications (Safer & Krager, 1988). Between 4% and 6% of those on stimulant medication for attention disorders are prescribed Dexedrine (Safer & Krager, 1988; Virginia Department of Education, 1991). Cylert is typically given to children who are unresponsive to the traditional stimulants (Copeland, 1991). The United States Drug Enforcement Administration has classified both Ritalin and Dexedrine as Schedule II controlled substances with legal restrictions on usage and prescription renewal. Therefore, their use is monitored by physicians as well as drug enforcement agencies (Copeland, 1991; Hancock, 1996).

Both Ritalin and Dexedrine are available in short-acting and sustained-release forms. The short-acting form is administered more frequently than the sustained-release form since it's effectiveness diminishes more readily. The short-acting form is usually taken twice a day and the sustained-release form is typically administered once daily (Copeland, 1991). Researchers have found that sustained-release Ritalin may be less effective than the short-acting form (Pelham et al., 1987). Therefore, physicians are more likely to recommend the short-acting form except in situations where in-school administration of the drug is problematic (e.g., no school nurse is available to dispense the medication or where teenagers may be prone to teasing by

peers) (Pelham et al., 1987).

Ritalin and Dexedrine are typically initiated in small doses, usually at 5 mg (Copeland, 1991). Because they do not build up in the blood stream, their effects are often observable from the first dose. The dosage can be increased every three to seven days or more gradually until the most therapeutic level of medication has been determined (Copeland, 1991). The amount of medication that a child takes depends on many variables, including the child's general sensitivity to the dyes in the tablets and his/her metabolism (Copeland, 1991).

Once a child's "optimal" dosage is established, Ritalin and Dexedrine are usually dispensed twice a day (at breakfast and lunch). Medication is generally given at or after meals to avoid complications involving appetite loss, stomachaches, and headaches (Copeland, 1991). Another reason for this administration schedule is that the behavioral effects of both Ritalin and Dexedrine appear to peak between 1 and 2 hours post-ingestion and to dissipate within 4 to 5 hours (Donnelly & Rapoport, 1985). Cylert is usually administered in the morning with behavioral effects lasting approximately 7 to 8 hours (Donnelly & Rapoport, 1985). Unlike Ritalin and Dexedrine, Cylert must be given on weekends to maintain it's effectiveness during the school week (Copeland, 1991).

Since 1990, the number of United States children taking Ritalin has grown 2-1/2 times (Hancock, 1996). According to the United States Drug Enforcement Administration, prescriptions of Ritalin have increased more than 600% over the past

five years (Bailey, 1995). The rate of Ritalin use in the United States is at least five times higher than in other countries, for example, the United Kingdom (Hancock, 1996). The main reason for this seems to be that in the United States the diagnosis of ADHD may be up to 20 times higher than in the United Kingdom. However, when the diagnostic rate is controlled there is little difference in the percentage of United States versus British children who receive stimulant medication (Taylor, 1988).

What Are The Beneficial Effects Of Stimulant Medication?

The mode of action of stimulant medication is not completely understood. However, contrary to popular belief their effects on children with ADHD are not "paradoxical". That is, children with ADHD demonstrate similar physiological and behavioral effects to stimulant medication as children without ADHD (Rapoport et al., 1980). Stimulant medication cannot cure ADHD but sometimes it temporarily moderates the symptoms. Stimulant medication appears to be effective for approximately 70% to 80% of the children who take it (Barkley, 1977). The remaining 20% to 30% either exhibit no response or their ADHD symptoms worsen with treatment, thus indicating the need for alternative medications or treatment approaches (Barkley, 1976; Safer & Krager, 1984). Because most children treated with stimulants do not continue to use medication beyond a 3-year duration (e.g., Satterfield, Cantwell, & Satterfield, 1979; Satterfield, Satterfield, & Cantwell, 1980, 1981) and because half of all children treated receive only one prescription (Sherman & Hertzig, 1991), little

is known about the long-term effects of this treatment. Consequently, reports of the beneficial effects of stimulants should be interpreted with caution.

The beneficial effects of stimulant medications include increased maintenance of attention to tasks (Douglas, Barr, O'Neill, & Britton 1986; Rapport et al., 1988) and decreased impulsive responding (Brown & Sleater, 1979; Rapport et al., 1987). Further, these medications significantly reduce a number of task irrelevant activities such as fidgetiness and finger tapping (Cunningham & Barkley, 1979). Problems with aggression (Klorman et al., 1988), classroom disruptive behavior (Barkley, 1979), and noncompliance with authority figures (Barkley, Karlsson, Strzelcek, & Murphy, 1984) have also been shown to improve with these medications. Furthermore, children are found to be less aggressive with others, behave more appropriately with other children, and to be accepted to a greater degree by their peers (Cunningham, Siegal, & Offord, 1985; Pelham & Hoza, 1987; Whalen et al., 1989). However, these differences in peer relations were found only in a highly structured, simulated school setting and not in free play and cooperative task settings.

What Are The Negative Side-Effects Of Stimulant Medication?

Transient side effects such as headaches, stomachaches, decreased appetite and sleep problems may occur but often subside if medication is continued (Copeland, 1991). However, some side effects do persist. The most frequently reported adverse reactions are decreased appetite, insomnia, stomach pain, headaches, irritability and

weight loss (Kasten, Coury, & Heron, 1992). Also, recent evidence suggests that stimulants may have a negative effect on growth and precipitate motor tics and Tourette's Syndrome (Copeland, 1991). Motor tics are involuntary muscle movements such as eye-blinking or grimacing. It is estimated that 1% of children treated with stimulants will develop a tic disorder, and that in 13% of children these medications may exacerbate pre-existing tics (Barkley, 1988). There is considerable evidence that children with a family history of tics or Tourette's Syndrome are more likely to develop them (Copeland, 1991).

Lethargy, depression, becoming "glassy-eyed" or "zombie-like" are not side-effects of the medication. Rather, they indicate that either the dosage of medication is too high, the child is on the wrong medication for ADHD, or the diagnosis is incorrect (Copeland, 1991). It is crucial that neither parents nor teachers believe that these are side effects which must be tolerated to gain the benefit of the medicine. Children on appropriate medication neither have personality changes nor do they become depressed (Copeland, 1991). Rather, they are very much themselves but may have the ability to concentrate, control their impulses, and have a more appropriate activity level (Copeland, 1991).

Clinical reports indicate that some children, especially those with pronounced hyperactivity and impulsivity, may experience increased hyperactivity when the medicine wears off. This effect is called the "rebound" and is observed in a relatively small percentage of children who take Ritalin (Copeland, 1991). It can be managed by

a third or fourth dose of medication, one-half the strength of the morning or noon dose (Copeland, 1991).

Ritalin and Dexedrine are not considered to be physiologically addictive drugs (Copeland, 1991). However, when the high doses of Ritalin are snorted or injected it can be addictive (Bailey, 1995). Cylert is often the stimulant of choice where abuse is considered likely. Because sufficient data on long-term safety and efficacy are not available, those taking medication for a long time should be carefully monitored.

What Are The Limitations of Stimulants As A Treatment of Attention-Deficit/Hyperactivity Disorder?

There are clear limitations on the educational effects of stimulant medication in the treatment of ADHD. Even though stimulants may improve a child's ability to sustain attention, there is little evidence that stimulants enhance retention, retrieval and relearning of material (Jacobvitz et al., 1990). There is converging evidence from numerous studies that children diagnosed with ADHD and treated with stimulants fail to show improvement in achievement in school (Gittleman-Klein & Klein, 1976; Rie, Rie, Stewart, & Ambuel, 1979a, 1979b). Interestingly, there is some evidence that stimulants may produce over focusing of attention (Douglas, Barr, O'Neill, & Britton, 1988) which can impair rather than improve learning (Swanson, Kinsbourne, Roberts, & Zucher, 1978; Swanson, 1989). In addition, there is little evidence to suggest that stimulant medication improves social skills and peer relationships (Pelham & Bender,

1982). Thus, other interventions are required for long-term learning and academic gains and for the development of better social skills. Furthermore, research has indicated that many students do not take medication beyond a 3-year period and that when medication is discontinued symptoms return (e.g., Satterfield et al., 1979, 1980, 1981). Therefore, other treatment approaches are needed to help these children cope with their inattention and behavior problems in the "post-medication" years. Unfortunately, the widespread acceptance of stimulant therapy based on the short-term effects on disruptive behavior seems to have minimized the use of nonpharmacological interventions in the school setting (Swanson et al., 1992). Because the typical 1 to 2 year treatment with stimulants may present a relatively short "window of opportunity" when the child with ADHD may be more amenable to nonpharmacological educational treatment (Swanson et al., 1992), multimodal treatment approaches for ADHD should be put in place during that period (Barkley, 1989; Satterfield, Satterfield, & Schell, 1987; Gittleman-Klein et al., 1980).

What Is The Teacher's Role In The Treatment of Attention-Deficit/Hyperactivity Disorder?

Teachers can play a critical role in the early detection of ADHD and in monitoring the effects of stimulant medication. It is recommended that physicians who prescribe stimulants as part of the treatment regimen for ADHD ask the student's teacher to provide initial information about classroom performance and behavior, and

for follow-up information about the student's progress after the treatment has been started (Kasten et al., 1992). The teacher has a great opportunity to observe the child with ADHD when medicated, hence, the teacher is in a good position to see changes. Many of the benefits of medication including the positive effect on work rate, attention span, impulsiveness, organization and frustration tolerance are best judged in the classroom. Likewise, side-effects are often most apparent during the time the medication is effective (i.e., during the school day). Without the teacher's input, the physician is without most of the data he/she needs to make ongoing adjustments in the medication regimen (Copeland, 1991). To have complete information about the effects of medication in the classroom, the physician would need to have frequent communication with the child's teacher and the teacher would need to know the targeted effects of the stimulants and the potential side effects of the medication. Being knowledgeable about the full range of effects of stimulant medication, teachers would be in a better position to work collaboratively with the physician as he/she attempts to determine the appropriate medication efficacy.

A number of studies have been conducted to explore the perceptions, knowledge, and opinions of teachers regarding the use of stimulant medication to treat students with ADHD. Kasten et al. (1992) found that educators generally believe stimulants are useful for students with ADHD and that they frequently recommend them to parents. However, the findings also indicated that the teachers had received little education about stimulant medication. Over 90% of the teachers stated that they

had received little or no training about stimulant medication in their undergraduate programs and little or no inservice training on this topic. Not surprisingly, most teachers did not recognize all the potential effects that may result from the use of stimulants.

Similarly, Davino, Lehr, Leighton, Miskar, and Chambliss (1995) reported that 83% of the teachers in their study believed their college training program on stimulant medication was not adequate, and 64% believed that they had not received adequate inservice training on this issue. Older and more experienced teachers were less satisfied with the amount of inservice training they had received. Fifty-five percent of the teachers did not recognize the side-effects of stimulants and 10% of the teachers did not know the positive effects. Overall, findings from these studies indicate that most teachers believe that their training about stimulant medication in the treatment of ADHD is inadequate and most are not very knowledgeable about the effects of these medications.

To date there are no reported studies on this issue with teachers in Newfoundland. It is important to identify the beliefs of Newfoundland teachers regarding this pharmaceutical intervention. In particular, the beliefs held by the special education teachers in this Province are critical. This is because special education teachers act as consultants to the regular classroom teacher for students with ADHD, and special education teachers are important members of the Program Planning Team for children with ADHD. This team is responsible for designing, implementing,

evaluating, and modifying programs to address the needs of students with ADHD (Newfoundland and Labrador Department of Education, 1992b). Therefore, it is essential that special education teachers be knowledgeable about the full range of effects of stimulant medication including the benefits and limitations, and the need for other, especially educational, interventions.

Overall, special education teachers need to have some understanding about the prevalence of ADHD, the effectiveness and limitations of stimulant medication as a treatment for ADHD, and the beneficial and negative effects of stimulant medication. This knowledge is essential since special education teachers play a pivotal role in the education of children with ADHD in Newfoundland.

Purpose of the Research

The main purpose of this research project was to examine the beliefs of the special education teachers at Western Avalon Roman Catholic School Board regarding the use of stimulant medication to treat ADHD. Specifically, special education teachers beliefs about: (1) the adequacy of their university and professional training on this issue, (2) the nature of ADHD, (3) the effectiveness and limitations of stimulant medication as a treatment for ADHD, and (4) the beneficial and negative effects of stimulant medication were examined.

The second purpose was to develop recommendations for district personnel to guide their professional development activities in the area of ADHD. For example, if

the findings suggest that the special education teachers do not recognize all the beneficial and negative effects of stimulant medication then, the school district may need to provide inservice training to educate special education teachers in this area.

Method

Sample

Twenty-three special education teachers from the Western Avalon Roman Catholic School Board participated in this study.[1] Twenty-six percent of the teachers were male and 74% were female. The teachers ranged in age from 24 to 48 years with a mean age of 37 years, S.D. = 7.3 years. The mean number of years the teachers reported teaching in special education was 10.7 years (Range = 1 to 23 years, SD = 6.319 years). The highest qualification in special education reported by the teachers was: (a) Masters of Special Education, 4%; (b) Bachelor of Special Education, 74%; (c) Bachelor of Education (Primary, Elementary, or Secondary), 13%; and (d) no university degree, 9%.

Questionnaire

A 36-item questionnaire, modeled after a similar instrument by Kasten et al. (1992), was developed for this study (see Appendix I). A pilot study was conducted with four graduate students in Faculty of Education at Memorial University of Newfoundland in order to obtain feedback regarding the structure of the initial

questionnaire and to clarify any ambiguous items. Based on feedback obtained from this pilot study, the initial questionnaire was modified and a final version was developed.

The questionnaire was divided into three parts. The first section was designed to measure demographic variables such as current teaching roles, gender, age, level of university training and the number of years teaching experience in special education. This section also included questions designed to measure teachers' beliefs about the adequacy of their university and professional training on stimulant medication. The second section was designed to measure the teachers' beliefs about the nature of ADHD and the effectiveness and limitations of stimulant medication in the treatment of ADHD. For example, their beliefs about the prevalence of ADHD, about the best method of treatment for ADHD, and about how many children with ADHD can benefit from using stimulant medication were examined. The final section of the questionnaire was designed to measure their beliefs about the effects of stimulant medication. In this section, questions about true (i.e., established) and false (i.e., not established) effects, both positive and negative, were included. For example, teachers' beliefs about whether stimulant medication improves disruptive behavior (a true positive effect), decreases irritability (a false positive effect), causes difficulty sleeping (a true negative effect), and increases impulsiveness (a false negative effect) were explored. For each item in Section II and Section III, one of two response formats was used, multiple choice or 5-point Likert scales.

Procedure

After receiving permission from the Faculty of Education Ethics Review Committee, the Superintendent of the Western Avalon Roman Catholic School Board at Avondale, and the individual principals of each school, all 48 special education teachers (37 females and 11 males) in the District were mailed a questionnaire with a letter of consent stating the purpose of the study (see Appendices F & G for the letter of consent for the Superintendent and the principals, and see Appendices H & I for the letter of consent and the questionnaire for the special education teachers, respectively). A follow-up letter was sent one week later to remind those teachers who had not completed the questionnaire to consider completing it and to thank those who have completed it (see Appendix J for follow-up letter for the special education teachers). Teachers were requested to complete the questionnaire and mail it together with the letter of consent to the return address. Participation was voluntary and teachers were assured that their individual responses would be kept confidential.

Twenty-three of the 48 questionnaires were returned, representing a response rate of 48%. This response rate is within the range typically reported for similar studies involving similar populations. For example, in previous studies on this topic response rates ranged from 38% to 72% (Askew, 1993; Bulter, 1992; Lowe, 1993). Also, a recent survey of graduates of Memorial University's Bachelor of Special Education programme yielded a response rate of 59% (Collins et al., 1995).

Results

In this section, the findings concerning special education teachers' beliefs about: (a) the adequacy of their education and training about the use of stimulant medication in the treatment of ADHD; (b) the nature of ADHD; (c) the effectiveness and limitations of stimulant medication in the treatment of ADHD; and (d) the effects of stimulant medication will be reported in this section.

Education and Training

Teachers were asked to respond to two items which measured their satisfaction with the amount of training they had received about the use of stimulant medication in the treatment of ADHD. For each item, a statement was presented and teachers had to indicate their level of agreement with that statement (see Appendix I). Responses were measured on a 5-point Likert scale where 1 indicated strong agreement and 5 strong disagreement. Here, responses of 1 and 2 are interpreted as agreement, 3 as undecided, and 4 and 5 as disagreement. When asked if they agreed with the statement that they had received adequate training in university, the average response was 4.00, SD = .853, corresponding to disagreement. Furthermore, 74% of the teachers gave a response of 4 or 5 on the Likert scale when asked if they had received adequate training in university. Similarly, when teachers were asked if they agreed with the statement that they had received adequate training in professional development programs, the average response was 4.174, SD = 1.154, corresponding to disagreement.

Seventy percent of the teachers provided a response of 4 or 5 on this item. Clearly, the majority of teachers were dissatisfied with the amount of training that they had received in university and in professional development programs about the use stimulant medication in the treatment of ADHD.

The Nature Of ADHD

Teachers completed three items about the nature of ADHD. They were asked to indicate: (1) what percentage of school-age children experience ADHD, (2) whether they agreed that ADHD is a medical condition, and (3) whether they agreed that children are being diagnosed with ADHD when they do not have it (see Appendix I). A multiple choice question format was used to measure beliefs about the percentage of children who experience ADHD. When asked if this percentage is: (a) 3% to 5%, (b) 6% to 10%, (c) 11% to 20%, or (d) 21% to 30%, 35% of the teachers responded that between 3% and 5% of school-age children experience ADHD, 57% estimated that between 6% and 10% of children experience ADHD, 4% estimated that between 11% and 20% of children experience ADHD, and the remaining 4% of the teachers estimated this figure to be between 21% and 30%. The other two items each employed a 5-point Likert response scale where 1 indicated strong agreement and 5 strong disagreement with the statement provided in the item. Again, responses of 1 and 2 are interpreted as agreement, 3 as undecided, and 4 and 5 as disagreement. The number of respondents, mean response and standard deviation for these two items are shown

in Table 1.

Table 1

Number of Respondents, Mean Response, and Standard Deviation for Items Measuring Beliefs About the Nature of Attention-Deficit/Hyperactivity Disorder

Item	Number of Respondents	Mean	Standard Deviation
Is a Medical Condition	22	2.181	.958
Misdiagnosis	23	2.391	1.076

Note: Responses of 1 and 2 indicate agreement, 3 indicates undecided, and 4 and 5 indicate disagreement.

As indicated in Table 1, the teachers' mean response to the statement that ADHD is a medical condition corresponds to their agreeing with that statement. Indeed, 68% of the teachers agreed (responses of 1 or 2) that ADHD is a medical condition, 5% disagreed (responses of 4 or 5), and 27% were undecided (response of 3). The teachers' mean response to the statement that many children are misdiagnosed with ADHD corresponds to agreement that this is so. Sixty-eight percent of the teachers agreed that many children are being diagnosed with ADHD who do not have this condition, 18% disagreed, and 17% were undecided.

Overall, the teachers believed that ADHD is a medical condition affecting between 3 to 10% of school-age children and that many children are being diagnosed with this condition who do not have it. These beliefs are consistent with current research findings.

The Effectiveness and Limitations Of Stimulant Medication

Teachers completed nine items about the effectiveness and limitations of stimulant medication as a treatment for ADHD. Three items were multiple choice. These three items were concerned with the percentage of school-age children with ADHD who are medicated with stimulants, the percentage of school-age children with ADHD who could benefit from this pharmaceutical intervention, and the length of time that the effect of a single dose of short-acting Ritalin lasts. When asked to indicate what percentage of school-age children with ADHD are medicated with stimulant medication: (a) 25%, (b) 50%, (c) 75%, or (d) 100%, 43% of the teachers estimated this percentage to be 25%, 33% of the teachers estimated that 50% of children with ADHD are medicated, and the remaining 24% estimated that this figure is 75%. When asked what percentage of school-age children who experience ADHD could benefit from stimulant medication: (a) 25%, (b) 50%, (c) 75%, or (d) 100%, 60% of the teachers believed that 25% could benefit, 20% estimated that 50% could benefit, 10% estimated that 75% could benefit, and the remaining 10% believed that all school-age children experiencing ADHD could benefit from stimulant medication. For the third

multiple choice item, teachers were asked to estimate the length of a single dose of Ritalin: (a) 30 minutes, (b) 4 to 6 hours, (c) 12 to 24 hours, or (d) do not know. Four percent estimated 30 minutes, 74% estimated between 4 to 6 hours, 4% estimated between 12 and 24 hours, and 17% indicated that they did not know.

For each of the other six items, a statement was provided and the teachers' level of agreement with the statement was measured. A 5-point Likert response scale where 1 indicated strong agreement and 5 strong disagreement was used for each of these items. Again, responses of 1 and 2 correspond to agreement, 3 to undecided, and 4 and 5 correspond to disagreement. These items measured beliefs about: (a) whether stimulant medication is prescribed too often, (b) whether 3 out of 4 children with ADHD benefit from using stimulant medication, (c) whether behavior modification is the best method of treatment for ADHD, (d) whether stimulants are the best method of treatment, (e) whether a combination of treatment approaches are the best method, and (f) whether stimulant medication should be used as the last resort for treating children with ADHD. The number of respondents, mean response, and standard deviation for each of these six items are shown in Table 2.

Table 2

Number of Respondents, Mean Response, and Standard Deviation for Items Measuring Beliefs About the Effectiveness and Limitations of Stimulant Medication

Item	Number of Respondents	Mean	Standard Deviation
Prescribed Too Often	22	2.955	1.046
3 Out Of 4 Children With ADHD Can Benefit From Using Stimulants	19	2.842	.898
Behavior Modification Best Treatment	23	3.087	.793
Stimulants Best Treatment	22	3.273	.827
Combination Of Treatment Approaches	22	1.500	.740
Stimulant Medication Last Resort	23	2.043	1.065

Note: Responses of 1 and 2 indicate agreement, 3 indicates undecided, and 4 and 5 indicate disagreement.

As indicated in Table 2, the teachers' mean response to the statement that stimulant medication is prescribed too often corresponds to undecided. Forty-one percent agreed (responses of 1 or 2) that stimulant medication is prescribed too often,

23% disagreed (responses of 4 or 5) . and 36% were undecided (response of 3). Similarly, the teachers' mean response to the statement that 3 out of 4 children with ADHD could benefit from using stimulant medication corresponds to undecided. Twenty-six percent agreed that 3 out of 4 children could benefit from using stimulant medication, 21% disagreed, and 53% were unsure.

The average response to the statement that behavior modification is the best treatment and to the statement that stimulant medication is the best treatment indicates that teachers were undecided about both. Indeed, 18% agreed that behavior modification is the best method of treatment, 17% disagreed, and 65% indicated that they were undecided. Similarly, 9% agreed that stimulant medication is the best method of treatment, 36% disagreed, and 55% were undecided. The average responses to the statements that a combination of treatments is the best approach for ADHD and that stimulant medication should only be used as a last resort, indicates that the teachers agreed with both statements. Eighty-six percent of the teachers agreed that stimulants are more effective in treating ADHD when combined with other treatment approaches such as behavior modification. The remaining 14% were undecided. Similarly, 74% of the teachers agreed that stimulant medication should only be used as the last resort for treating children with ADHD when all other methods have failed, 9% disagreed, and 17% were undecided.

To summarize the teachers' beliefs about the effectiveness and limitations of stimulants, the majority believed that between 25% and 50% of children with ADHD

are medicated with stimulants and that 25% to 50% of school-age children with ADHD could benefit from this pharmaceutical intervention. Based on current research, both beliefs are underestimates as 70 to 80% of children with ADHD are medicated with stimulants and 70 to 80% benefit from these medications (Barkley, 1977). Most estimated correctly that the average length of time that a single dose of short-acting Ritalin lasts is between 4 and 6 hours. On average, teachers were undecided if stimulant medication is prescribed too often for children with ADHD, and if behavior modification or stimulant medication is the best method of treatment for ADHD. However, they believed that stimulant medication is more effective when combined with other treatment approaches and that stimulant medication should only be used as the last resort for treating children with ADHD when all other methods have failed.

Effects Of Stimulant Medication

Teachers responded to 17 items about the true (i.e., established) and false (i.e., not established) effects, both beneficial and negative, of stimulant medication. Each of these items employed a 5-point Likert scale where 1 indicated strong agreement and 5 strong disagreement with the statement provided in the item. During data preparation and analysis the teachers' responses were recoded so that scores of 1 and 2 correspond to incorrect responses, a score of 3 corresponds to undecided, and scores of 4 and 5 correspond to correct responses. The findings will be reported separately for each item.[2]

True Effects Of Stimulant Medication

Seven items measured the special education teachers' beliefs about the true beneficial and negative effects of stimulant medication. Teachers were asked about two true beneficial effects. These are that stimulant medication decreases disruptive behavior and improves a child's ability to maintain attention to tasks. The mean response on both items (see Table 3) indicates that teachers seemed to have some awareness of these beneficial effects, especially the latter. Sixty-five percent believed (correctly) that disruptive behavior improves with stimulant medication, 9% did not believe stimulant medication could have this effect on behavior, and 26% were undecided. Eighty-three percent of the teachers believed (correctly) that stimulant medication can improve a child's ability to maintain attention to tasks and the remaining 14% were undecided.

Teachers were asked about five true negative side-effects of stimulant medication. These are that children often experience drowsiness (if dosage is inappropriate), stomachaches and/or vomiting, difficulty sleeping, suppression of height, and the onset of Tourette's Syndrome (see Table 3).

Table 3

Number of Respondents, Mean Response, and Standard Deviation for Items Measuring Beliefs About the True Beneficial and Negative Effects of Stimulant Medication

Item	Number of Respondents	Mean	Standard Deviation
		Beneficial Effects	
Disruptive Behavior Improves	23	3.739	.864
Improves Ability To Maintain Attention	23	4.174	.717
		Negative Effects	
Drowsy If Dosage Inappropriate	23	4.455	.739
Stomachaches and/or Vomiting	18	3.056	1.056
Difficulty Sleeping	19	3.263	1.098
Suppression Of Height	20	3.100	1.119
Tourette's Syndrome	18	3.000	.840

Note: Responses of 1 and 2 indicate correct, 3 indicates undecided, and 4 and 5 indicate incorrect.

The teachers' mean response when asked if drowsiness can result from an inappropriate dose of medication indicates that they are aware of this negative effect. Eighty-six percent correctly believed that children can become drowsy if the dosage is inappropriate and the remaining 14% were undecided. The mean response when asked if stomachaches and/or vomiting are possible side-effects indicates that the teachers were undecided about this true side-effect. Twenty-eight percent believed in this true side-effect, 28% did not believe in it, and 44% of the teachers were undecided. The mean response when asked if difficulty sleeping is a possible side-effect indicates that teachers were also undecided about this true side-effect. Forty-seven percent of the teachers believed that children who are taking stimulant medication may experience difficulty sleeping, 27% believed that difficulty with sleeping is not a possible side-effect, and 26% were undecided. The average response when asked if suppression of height is a possible side-effect of stimulant medication also corresponds to undecided. Thirty-five percent believed that suppression of height is a possible side-effect, 25% believed that the suppression of height is not a possible side-effect, and 40% were undecided. Finally, the average response when asked if stimulant medication is associated with the onset of Tourette's Syndrome indicates the teachers were undecided. Forty-four percent believed that Tourette's Syndrome may be associated with the use of stimulant medication and the remaining 56% were undecided.

In summary, the majority of the teachers held realistic beliefs about the true

beneficial effects of stimulants. That is, that stimulants increase children's ability to maintain attention to tasks and decrease disruptive behaviors. As for the true negative effects, the teachers understood that children become drowsy if their dosage is inappropriate, but were unsure that stomachaches and/or vomiting, difficulty sleeping, suppression of height and Tourette's Syndrome are negative effects of stimulant medication.

False Effects of Stimulant Medication

Ten items were included to measure the teachers' beliefs about the false (i.e., not established) beneficial and negative effects of stimulant medication. Teachers were asked about four false beneficial effects. These were that stimulant medication improves academic performance, improves long-term memory, decreases irritability, and causes an euphoric state after ingestion (see Table 4). The average response when asked if stimulant medication improves a child's academic performance indicates that the teachers tended to believe (naively) that it did. That is, 52% believed in this false effect, 17% did not believe in it, and 31% were undecided. On average teachers were relatively unsure if stimulant medication improves child's long-term memory, with 19% believing it did, 45% believing it did not, and 36% undecided. Similarly, the teachers were unsure, on average, if stimulant medication decreases irritability. Forty-eight percent believed in this false effect, 22% did not believe in it, and 30% were undecided. Furthermore, teachers were, on average, undecided if an euphoric state

occurs shortly after taking Ritalin, with 16% believing it did, 37% believing that it did not, and 47% undecided.

Table 4

Number of Respondents, Mean Response, and Standard Deviation for Items Measuring Beliefs About the False Beneficial and Negative Effects of Stimulant Medication

Item	Number of Respondents	Mean	Standard Deviation
		Beneficial Effects	
Improves Academic Performance	23	2.391	1.076
Improves Long-Term Memory	22	3.364	1.049
Decreases Irritability	23	2.739	1.096
Causes Euphoric State	19	3.263	.991
		Negative Effects	
No Negative Side-Effects	20	4.100	1.165
Increased Impulsiveness	23	4.174	.717
Nasal Congestion	17	2.941	.899
Physiologically Addictive	21	3.143	1.153

Table 4 continued

Item	Number of Respondents	Mean	Standard Deviation
		Negative Effects	
Increases In Dosage	21	3.571	1.326
"Paradoxical Effect"	23	2.087	1.083

Note: Responses of 1 and 2 indicate correct, 3 indicates undecided, and 4 and 5 indicate incorrect.

Teachers were asked about six false negative effects of stimulant medication. These were that it has no negative side-effects, increases impulsiveness, is associated with nasal congestion, is physiologically addictive, needs increases in dosage to be effective, and has a "paradoxical effect" in children with ADHD (see Table 4). On average, teachers did not believe that Ritalin has no side-effects. Eighty-five percent correctly believed that there are side-effects and only 15% believed there are not. Similarly, on average, the teachers did not believe that Ritalin increases impulsiveness. Eighty-three percent believed (correctly) that Ritalin does not increase impulsiveness and the remaining 17% were undecided. The average response to the statement that nasal congestion is a possible side-effect of stimulant medication indicates that the teachers were unsure about this false effect. Twenty-four percent believed that nasal congestion is a side-effect, 17% did not believe in this effect, and 59% were undecided.

On average, teachers were undecided if Ritalin is a physiologically addictive drug, with 19% believing it is, 38% believing it is not, and 43% undecided. Similarly, on average, teachers were undecided if stimulant medication requires ongoing increases in dosage to maintain it's effectiveness. Twenty-nine percent believed that it does require ongoing increases in dosage, 57% did not believe in this false effect, and 14% were undecided. The average response when asked if children with ADHD react differently to stimulant medication than those who do not experience this condition, indicates that teachers believed (naively) in this effect. Seventy percent believed that children with ADHD react differently to stimulant medication than those who do not, 8% did not believe in this false effect, and 22% were undecided.

In summary, teachers were undecided about most of the false beneficial effects of stimulant medication, although they tended to believe (naively) that stimulant medication can improve a child's academic performance. The teachers were also undecided about most of the false negative effects. Exceptions were that they believed (realistically) that there are in fact negative side-effects associated with Ritalin, but that increased impulsiveness is not one of them. Also, they believed (naively) that children with ADHD react differently to stimulant medication than those who do not experience this condition.

True Versus False Effects

To determine if teachers had more realistic beliefs about true (i.e., established)

versus false (i.e., not established) effects of stimulant medication, each teacher's average response to the true effects items and to the false effects items was calculated. These data were analyzed with a t test for dependent samples. The value of t turned out to be $t(22) = 2.01$, $p < .06$, with $\bar{x}$ for the true effects = 3.5123 and $\bar{x}$ for the false effects = 3.1704. Thus, there was no significant difference in the realism/naivete of the teachers' responses for true versus false effects.

Relations Between Demographic Variables And Beliefs

To examine the linear relationship between the five demographic variables (teacher's age, gender, training, experience teaching special education, satisfaction with university education and professional development training) and teachers' beliefs, correlation coefficients between each of these five variables and the 27 beliefs measured on Likert scales were computed, 135 correlations in all. Due to the high number of correlations computed, alpha was set at 0.01. No significant correlations emerged. However, because two of the demographic variables (age and experience) were significantly correlated with one another (r (23) = .6807, $p < .01$) partial correlations (between age and beliefs with experience controlled; between experience and beliefs with age controlled) were computed. No significant partial correlations emerged. Thus, these teachers beliefs were not significantly related (at least in a linear fashion) to their age, gender, training, experience teaching in special education, or satisfaction with their training about stimulants and ADHD.

Discussion

The purpose of this research project was to examine the beliefs of the special education teachers at Western Avalon Roman Catholic School Board regarding the use of stimulant medication to treat ADHD, and to develop recommendations for the professional development needs of those teachers (if any). In this section, the findings pertaining to the teachers' beliefs will be discussed first. Then, specific recommendations to district personnel to help guide their professional development activities in the area of ADHD will be presented.

Teachers' Beliefs

The majority of the special education teachers in this study were dissatisfied with the amount of training they had received in university and in professional development programs concerning stimulant medication in the treatment of ADHD. This finding replicates previously reported findings. For example, Kasten et al. (1992) found that over 90% of teachers believed they had received too little training about stimulant medication in their undergraduate education programs and in inservice training. Similarly, Davino et al. (1995) reported that most of the teachers in that study felt they had not received adequate college-based or inservice training about the use of stimulants in the treatment ADHD. Importantly, Collins et al. (1996) found that graduates of the Special Education degree programme at Memorial University considered that one of the weakest aspects of that program was the relative lack of

training provided about drugs and children's behavior.

The fact that the teachers in this study believed that their background training was inadequate is a cause for concern. Although teachers can develop expertise independent of these traditional training routes, for most teachers, university and inservice training accounts for most of their professional preparation consequently, the present findings strongly suggest that these teachers may not have sufficient expertise in this area to work effectively with and for students with ADHD. Furthermore, the findings concerning their beliefs about the use and effects of stimulant medication in the treatment of ADHD tend to reinforce that suggestion. Before discussing those findings, the teachers' beliefs about the nature of ADHD will be addressed.

Overall, these teachers held fairly realistic and contemporary beliefs about the nature of ADHD. That is, most teachers believed that ADHD is a medical condition and estimated its prevalence at between 3 to 10% of school-age children. This estimate is consistent with the prevalence statistics reported by the American Psychiatric Association (1994). The teachers also tended to believe that many children are being diagnosed with ADHD who do not have this condition. This is consistent with the contemporary view that for a variety of social, educational, and familial reasons, this disorder is being increasingly diagnosed among children whose history and current behavior does not warrant it (Hancock, 1996). Perhaps it is not surprising that these teachers held these beliefs. After all, ADHD has received considerable media coverage in the last few years and, in that coverage, prevalence statistics and overdiagnosis have

been stressed repeatedly (e.g., Hancock, 1996).

Teachers' beliefs about the use and potential use of stimulant medication in ADHD included the belief that stimulant medication is prescribed too often for children with ADHD. Interestingly, Kasten et al. (1992) found that there was a significant difference between elementary, middle, and high school teachers' beliefs on this point. Elementary school teachers tended to believe that stimulants were not overprescribed in contrast with teachers in middle and high school. Because of the small sample size in this study, a reliable comparison between the beliefs of primary, elementary, and high school special education teachers was not possible. Most of the teachers underestimated the percentage of children who can and do benefit from treatment with stimulant medication. Furthermore, they believed that stimulant medication should only be used as the last resort for treating children with ADHD when all other methods have failed. This replicates similar findings reported by Davino et al. (1995). These findings suggest that these teachers may be overly cautious or conservative in their view about the potential of stimulant medication and especially about the number of children who might benefit from them. What this means is that they may be overly hesitant in bringing the issue of medication to the attention of parents or members of the school team.

When it came to the issue of the best treatment for ADHD, most were undecided whether behavior modification or stimulant medication is the best treatment. However, they believed that stimulant medication is more effective when combined

with other treatment approaches. This view is congruent with research findings demonstrating that stimulant medication exerts greater behavior-changing effects when combined with other treatment approaches, such as behavior modification (Gittleman-Klein et al., 1980). The fact that the majority of these special education teachers believed that stimulant medication is more effective when combined with other treatment approaches seems positive. This is because they may be more likely to seek out other educational interventions for children with ADHD.

Concerning the effects of stimulants, these teachers did not discriminate well between the true versus false beneficial effects. Although most teachers understood that stimulant medication helps a child to maintain attention to tasks and decrease disruptive behaviors, they also believed it improves academic performance when in fact it does not. Similar findings have been reported before. For example, Kasten et al. (1992) found that the majority of special education teachers knew that stimulants increase concentration and decrease disruptive behaviors. In addition, Davino et al. (1995) reported that most teachers falsely believed that it improves academic performance. Moreover, the teachers in this project were unsure whether stimulants have positive effects on long-term memory, irritability, and level of euphoria. However, the research evidence is clear that stimulants do not have such positive effects (Kasten et al., 1992). These findings suggest that often teachers might not know what effects to expect from stimulants and in some instances, such as academic behavior, they may expect too much. It follows that they are likely to be relatively

unsure about what to include in program plans for those children.

Similarly, most of these teachers were undecided about the true and false negative side-effects of stimulant medication. In particular, most teachers were unaware that stomachaches and/or vomiting, difficulty sleeping, and the suppression of height may be possible side-effects. Of particular concern is the finding that these teachers did not know that Tourette's Syndrome (a particularly debilitating neurological disorder) can be precipitated by stimulants. Kasten et al. (1992) also reported that most of the special education teachers were unaware of this effect. Finally, the majority of the teachers believed that children with ADHD react differently to stimulant medication than those who do not experience ADHD. Research indicates that children with ADHD exert similar physiological and behavioral effects to the stimulant medication as children without ADHD (Rapport et al., 1980). Because these teachers are unsure about the side-effects of stimulants their ability to communicate with physicians effectively is limited.

Overall, these findings converge on the conclusion that these teachers were, for the most part, unsure of the effects of stimulant medication. Furthermore, although they had established a few firm beliefs about the effects of these medications, those firm beliefs represented an equivalence of realistic and naive beliefs about both positive and negative effects. Thus, teachers beliefs were not skewed in favour of true versus false effects or positive versus negative effects. Finally, the findings from the factor analysis[2] indicate that these teachers' beliefs about the effects of stimulants are not

organized into conceptually coherent systems. This may have important implications for designing a professional development program. For example, it may be easier to educate individuals who have no or little knowledge than those with false misconceptions organized into a well developed belief system.

Recommendations For Professional Development

The findings of this research project strongly suggest the need for a professional development program for these special education teachers regarding the use of stimulant medication as a treatment for ADHD. The fact that the majority of teachers were dissatisfied with the amount of training they had received in university and in professional development programs, together with the findings concerning their poorly developed beliefs, justifies the need for an inservice. Although these findings are based on only half of the special education teachers at this school board, there is little reason to suspect that the knowledge of the other teachers would be significantly better. This is because findings of surveys conducted on larger populations have yielded similar results to those found here (Kasten et al., 1992; Davino et al., 1995). Thus, all the special education teachers at this school board might benefit from inservice on this topic. Regardless, even if the recommendation for inservice is restricted to the teachers who participated here, they constitute 48% of the special education teachers at the Board - a sufficient percentage to justify the need for an inservice activity on this topic.

Information about the nature of ADHD, the effectiveness and limitations of

stimulant medication as a treatment for ADHD, and the beneficial and negative effects of those medications would need to be included in the inservice. The teachers held fairly realistic and contemporary beliefs about the nature of ADHD. However, only a few items were included in the questionnaire to measure those beliefs. In the inservice, it might be important to explore the teachers' understandings about the nature of ADHD further. If indicated, background information could then be provided to help teachers develop a more in depth understanding of the characteristics exhibited by children with ADHD. The main objective of the inservice should be to help teachers develop accurate beliefs regarding the percentage of children with ADHD who are taking stimulant medication, and the percentage of children with ADHD who can benefit from stimulant medication, since they underestimated these figures. Also, because teachers were unable to discriminate well between the true (i.e., established) versus false (i.e., not established), both beneficial and negative effects, they would need to be provided with accurate information regarding the full range of effects. The opportunity to work through several case studies should be included in the inservice to strengthen teachers' ability to apply their newly acquired beliefs in program planning activities.

It is anticipated that teachers who successfully complete this inservice would be knowledgeable of the full range of effects of stimulants and would be in a better position to provide parents with accurate information and to work collaboratively with the physician as he/she attempts to determine appropriate medication efficacy. Last of

all, the teachers would know what they can and cannot expect when children are medicated with stimulants and to be aware of the need for additional (especially educational) treatments. Indeed, on this latter point, additional inservice may well be needed.

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FOOTNOTES

[1] Nineteen regular special education teachers (83%) and 4 challenging needs teachers (17%) participated in this study. According to the Special Education Policy Manual, the number of regular special education teachers assigned to school boards depends on the total population of students within a Board. In contrast, the allocation of challenging needs teachers is determined by the number of students who meet the Challenging Needs criteria as outlined by the Department of Education Special Education Policy Manual (1992). That is, one full-time position is allocated for every four challenging needs students.

[2] Exploratory factor analysis failed to reveal a conceptually coherent factor structure. That is, six, not two (true, false) or four (true beneficial, false beneficial, true negative, false negative), factors emerged and none of the six were interpretable. This may be related to the fact that 17 items from only 23 subjects were entered into the analysis.

APPENDICES

Appendix A

Names & Locations of the Schools At The Western Avalon Roman Catholic School Board For Which The Educational Psychologist Is Responsible.

SCHOOLS	TOWN
St. Anne's Elementary	St. Vincent's
Immaculate Conception Primary	Colliers
St. Anne's Elementary	Conception Harbour
St. Joseph's Elementary	Harbour Main
Holy Cross Elementary	Holyrood
Fatima All Grade	St. Bride's
St. Catherine's Academy	Mount Carmel
St. Edward's Elementary	Brigus
Roncalli Central High School	Avondale
Bishop O'Neill Collegiate	Brigus
All Hallows Elementary	North River
Dunne Memorial Academy	Riverhead
Dunne Memorial Primary	Riverhead
Corpus Christi Elementary	Northern Bay

Appendix B

Tests Examined

TESTS EXAMINED

AREA	TEST TITLE
General Ability	Wechsler Intelligence Scale for Children-Third Edition
	Wechsler Adult Intelligence Scale-Revised
	Wechsler Preschool & Primary Scales of Intelligence
	The Raven's Standard Progressive Matrices
	The Raven's Coloured Progressive Matrices-Revised
	Test of Non-Verbal Intelligence
Achievement Tests	Kaufman Test of Educational Achievement-Comprehensive
	Peabody Individual Achievement Test
Language	Test of Written Language-2
	Test of Language Development-Intermediate
	Test of Language Development-Primary
	Test of Written Spelling
	Test of Early Language Development
Math	Diagnostic Screening Test: Math

AREA	TEST TITLE
Behaviour Rating Scales	Conner's Parent Rating Scale
	Conner's Teacher Rating Scale
	Disruptive Behaviour Rating Scale
	Behaviour Rating Profile
	Burk's Behaviour Rating Scale
	Adaptive Behaviour Scale
	The Jesness Inventory
	Differential Test of Conduct & Emotional Problems
Visual-Motor Perceptual/Visual Memory/ Motor Proficiency Tests	Developmental Test of Visual-Motor Integration
	Wechsler Memory Scales
Auditory Perceptual/ Memory Tests	The Auditory Sequential Memory Test
	Auditory Memory Span Test
	Test of Auditory Perception Test
Personality	Children's Personality Questionnaire
	Index of Personality Characteristics
Self-Concept	The Piers-Harris Self-Concept Scale

Appendix C

Tests Administered

TESTS ADMINISTERED

AREA	TITLE	NUMBER OF TIMES
General Ability	Wechsler Intelligence Scale for Children-Third Edition	6
	Raven's Standard Progressive Matrices	6
	Wechsler Adult Intelligence Scale-Revised	1
Achievement Test	Kaufman Test of Educational Achievement-Comprehensive	4
Language	Test of Written Language	1
	Test of Written Spelling	1
	Test of Language Development - Intermediate	1
	Test of Adolescent Language	1
Behaviour Rating Scales	Conner's Parent Rating Scale	7
	Conner's Teacher Rating Scale	5
	Disruptive Behaviour Rating Scale	10
	Behaviour Rating Profile	2
	Adaptive Behaviour Scale	2

AREA	TEST TITLE	
Visual-Motor Perceptual/Visual Memory/Motor Proficiency Tests	Developmental Test of Visual Motor-Integration	1
	Wechsler Memory Scales	1
Auditory Perceptual/ Memory Tests	Test of Auditory Perception	1
Self-Concept/ Self Esteem	The Piers-Harris Children's Self-Concept Scale	1

Appendix D

Reading List

ATTENTION DEFICIT DISORDER

August, G., & Garfinkel, B. (1989). Behavioral and cognitive subtypes of ADHD. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 739-748.

Edelbrook, C., & Rancurello, M. (1985). Childhood hyperactivity: An overview of rating scales and their applications. Clinical Psychology Review, 5, 429-445.

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Milich, R., & Landau, S. (1988). Teacher ratings of attention/overactivity and aggression: Cross-validation with classroom observations. Journal of Clinical Child Psychology, 17, 92-97.

CONDUCT DISORDER

Shamsie, J. (1990). Youth with conduct disorder: What is to be done? Institute for the study of antisocial and violent behaviour in youth: Etobicoke, Ontario.

BEHAVIORAL DISORDERS

Canter, L. (1993). Succeeding with difficult students. Santa Monica: Lee Canter & Associates.

Cautela, J. R., Cautela, J., & Esonis, S. (1983). Forms for behavior analysis with children. Illinois: Research Press.

Cohen, L., & Cohen, A. (1987). Disruptive behaviour: A source book for teachers. London: Harper & Row, Publishers.

Kelly, E. J. (1992). Conduct problem/emotional problem interventions: A holistic perspective. New York: Slosson Educational Publications, Inc.

Maurer, R. E. (1988). Special educator's discipline handbook. New York: The Center For Applied Research In Education.

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Exceptional Children.

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Saleh, W. (1995, July). Behaviour management for the 1990s. Paper presented at the Summer Institute for Memorial University of Newfoundland, St. John's, NF.

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Watkins, K. P., & Durant, L. (1992). Early childhood behaviour management guide. New York: The Center For applied Research In Education.

SOCIAL SKILLS DEFICITS

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Blackman, B. (1989). Phonological awareness and word recognition: Assessment and intervention. In A. G. Kahmi & H. W. Catts (Eds.), Reading Disabilities (pp. 133-158). Boston, MA: College-Hill Press.

Bruck, M. (1993). Word recognition and component phonological processing skills of adults with childhood diagnosis of dyslexia. Developmental review, 13, 258-268.

Kahmi, A., Catts, H., & Mauere, D. (1990). Explaining speech production deficits in poor readers. Journal of Learning Disabilities, 23, 632-636.

Lechner, O., Gerber, M., & Routh, D. (1990). Phonological awareness tasks as predictors of decoding ability beyond segmentation. Journal of Learning

Disabilities, 23, 240-247.

Miller, W. H. (1993). Complete reading disabilities handbook. New York: The Center For Applied Research In Education.

O'Sullivan, J. T., & Joy, R. M., (1994). If at first you don't succeed: Children's metacognition about reading problems. Contemporary Educational Psychology, 19, 118-127.

Pavlak, S. A. (1985). Classroom activities for correcting specific reading problems. New York: Parker Publishing Company.

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Siegal, L. (1993). The cognitive basis of dyslexia. In R. Pasnak & M. Howe (Eds.), Emerging themes in cognitive Development Vol II:Competencies (pp. 117-135). New York: Springer-Verlag.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21, 360-407.

MATHEMATICAL PROBLEMS

Ashlock, R. B. (1982). Error patterns in computation: A semi-programmed approach (3rd ed.). Columbus, Ohio: Charles E. Merrill Publishing Co.

Entwisle, D., & Alexander, K. (1990). Beginning school math competence: Minority and majority comparison. Child Development, 61, 454-471.

Montague, M., & Bos, C. (1986). Verbal mathematical problem solving and learning disabilities: A review. Focus on Learning Problems in Mathematics, 8, 7-21.

Pieper, E., Deshler, D. (1986). Intervention considerations in mathematics for the learning adolescent. Focus on Learning in Mathematics, 7, 35-47.

Resnick, L. (1989). Developing mathematical knowledge. American Psychologist, 44, 162-169.

Sears, C. (1986). Mathematics for the learning disabled child in the regular classroom. Arithmetic Teacher, 12, 5-11.

Silver, L. (1987). The "magic cure": A review of current controversial approached for treating learning disabilities. Journal of Learning Disabilities, 20, 498-504.

GENERAL LEARNING DISABILITIES

Crealock, C., & Bocher, D. G. (1994). Instructional strategies for students with special needs (2nd ed.). Scarborough, Ontario: Allyn & Bacon.

Harwell, J. M. (1989). Complete learning disabilities handbook: Ready to use techniques for teaching learning handicapped students. New York: The Center For Applied Research In Education.

Lerner, J. (1 993). Learning disabilities: Theories, diagnosis, and teaching strategies. Toronto: Houghton Mifflin Company.

Mauser, A. J. (1981). Assessing the learning disabled: selected instruments (3rd ed.). Novato, California: Academic Therapy Publications.

Smith, S. L. (1995). No easy answers. New York: Bantam Books.

CRISIS PREVENTION/INTERVENTION

Petersen, S., & Straub, R. L. (1992). School crisis survival guide. West Nyack, New York: The Center For Applied Research In Education.

CHILD ABUSE

Communications & Public Affairs Department of Justice Canada (1989). What to do if a child tells you of sexual abuse: Understanding the law. Ottawa, Ontario: Minister of Justice and Attorney General of Canada.

Wells, M. (1990). Canada's law on child sexual abuse. A handbook. Ottawa, Ontario.

AUTISM

Adams, J. (1992). Autism/P.D.D.: Strategies for parents and professionals. Ontario:

Adams Publications.

BRAIN INJURY

Gamis, A., & Nesbit, M. (1991). Neuropsychologic (cognitive) disabilities in long-term survivors of childhood cancer. Pediatrician, 18, 11-19.

O'Sullivan, J. T. (1996). Present but not accounted for: Students with brain injury in Canada's schools. Manuscript submitted to the Canadian Journal of Special Education.

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American Psychiatric Association (1994). Diagnostic & Statistical Manual of Mental Disorders (4th ed.). Washington, DC: American Psychiatric Association.

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McCarney, S. B., Wunderlich, K. C., & Bauer, A. M. (1993). The pre-referral intervention manual (2nd ed.). Columbia, MO: Hawthorne Educational Services, Inc.

Sattler, J. (1992). Assessment of children (3rd ed.). San Diego: Jerome M. Sattler, Publisher, Inc.

Truch, S. (1993). The WISC-III companion: A guide to interpretation and educational intervention. Austin, Texas: Pro-ed.

Wooding, G. S. (1995). Parenting today's teenager effectively: Hear me, hug me, trust me. Calgary: Good Health Books.

Appendix E

Behavior Rating Card & Progress Charts

MONITORING PROGRAM GUIDELINES

1. Student to check with teacher at the end of each class.

2. Teacher will use the scale below to record the student's progress:

   2 = Good
   1 = Satisfactory
   0 = Unsatisfactory

3. At the end of the day the teacher will add up the points in each category.

4. Student should show parent/guardian prior to next day. Get parents signature.

5. At home the student will place the appropriate sticker on the progress chart depending on the number of points he or she earned.

6. Student should bring form to office prior to homeroom next day.

7. Student, parent, guardian, or teacher may attach additional commentary on the back of the page where each may feel the need to do so.

Period #

My Goal	1	2	3	4	5	6	7	Teacher
Pay Attention								
Start work immediately								
Complete my work								
Let others work without disturbing them								
Cooperate with others								
Concentrate on work without fiddling with things								
Be friendly to others								
Use polite language								
Wait for permission to speak								
Subtotal								= Total →

Student's signature _____

Parent/Guardian Signature _____

V-P (or Designate) Signature _____

MENU OF REWARDS OR ACTIVITIES TO CHOOSE FROM

At the end of the day, the points will be added and graded as follows:

_____ = Good (Happy Face)

_____ = OK (Neutral Face)

_____ = Try Harder (Unhappy Face)

Depending on the number of points earned, the student will place the appropriate sticker on the Progress Chart.

Home rewards can be earned as follows (or decided upon by the parents). These rewards will be given on a weekly basis. The student, the parents, and the teacher will sign a contract.

1. Good =
2. Good =
3. Good =
4. Goods + OKs =
5. Goods =

Note: Other infrequent negative behaviors should be dealt with immediately. For example, if the student hits another student, consistent, specific negative consequences should be put in place immediately.

SAMPLE PROGRESS CHART

	Days				
Week	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
3					
4					

Appendix F

Letter of Consent For The Superintendent

LETTER OF CONSENT

Paula Jacobs
c/o Dr. Julia O'Sullivan
Faculty of Education
Memorial University Of Newfoundland
St. John's, NF
A1B 3X8

Ms. Joyce Fewer
Superintendent
Western Avalon Roman Catholic School Board
Avondale, NF
A0A 1B0

Dear Ms. J. Fewer:

I am a graduate student in the Educational Psychology Programme at Memorial University. In order to fulfill the requirements for the Masters Programme in Educational Psychology a research project must be completed. I am requesting your consent to contact all (48) teachers within Special Education at the Western Avalon Roman Catholic School Board and to request their participation in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder (ADHD)." The purpose of this study to explore current understandings and attitudes concerning this pharmaceutical intervention.

Teachers in Special Education will be requested to complete an anonymous questionnaire and mail it to the return address. The questionnaire is divided into three parts. The first section will assess their teaching experience and level of university training. The second section of the questionnaire will examine their attitudes and beliefs about the use of stimulants for ADHD. The final section will consist of questions regarding the expected or potential side effects of the stimulants. The questionnaire should take approximately 10 minutes to complete. The teachers' participation in this study is voluntary. Teachers are free to refuse to answer any questions preferred to be omitted.

If granted permission, I will send to the special education teachers a copy of the attached questionnaire and a cover letter explaining to them the purpose of this study. Only after receiving approval from you, the individual principals of each school and the

Faculty of Education's Ethics Review Committee will I commence this study. If approval is granted, I will send you a copy of certification from Ethic's Review Committee.

This study will begin in May 1996 and end in June 1996. At that time, a summary of the findings will be reported in my internship report, and will be made available to you, the individual principals and those interested participating teachers. Upon completion of this study, all records of informed consent and questionnaires will be stored for five years by my supervisor, Dr. Julia O'Sullivan, who will be the only individual who will have access to them. Note: The identities of the individual teachers will be kept in the strictest confidence. All reports of this research will safeguard the identities of the individuals who participated in this project.

If you agree to have the special education teachers to participate in this study, please sign below and mail it to the returned address. I would appreciate it if you would please return this letter to me by May 10, 1996.

If you have any questions or concerns please do not hesitate to contact me at 726-0701. If at any time you wish to speak with my supervisors, please contact Dr. Julia O'Sullivan at 737-3412 or Dr. William Kennedy at 737-7617. If at any time you wish to speak to a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development.

Thank you for consideration of my request.

Yours truly,

Paula Jacobs
Graduate Student
Memorial University of Newfoundland

I _____ (Superintendent) hereby give my permission for all (48) teachers in the Special Education to participate in a study titled, "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/ Hyperactivity Disorder (ADHD)." I understand that participation is voluntary. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

Appendix G

Letter of Consent For The Principal

LETTER OF CONSENT

Paula Jacobs
c/o Dr. Julia O'Sullivan
Faculty of Education
Memorial University Of Newfoundland
St. John's, NF
A1B 3X8

Dear Principal :

I am a graduate student in the Educational Psychology Programme at Memorial University. In order to fulfill the requirements for the Masters Programme in Educational Psychology a research project must be completed. I am requesting your consent to contact the teacher(s) within Special Education at your school, and to request their participation in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder (ADHD)." The purpose of this study to explore current understandings and attitudes concerning this pharmaceutical intervention.

Teachers in Special Education will be requested to complete an anonymous questionnaire and mail it to the returned address. The questionnaire is divided into three parts. The first section will assess their teaching experience and level of university training. The second section of the questionnaire will examine their attitudes and beliefs about the use of stimulants for ADHD. The final section will consist of questions regarding the expected or potential side effects of the stimulants. The questionnaire should take approximately 10 minutes to complete. The teachers' participation in this study is voluntary. Teachers are free to refuse to answer any questions preferred to be omitted.

If granted permission, I will send to the special education teachers a copy of the attached questionnaire and a cover letter explaining to them the purpose of this study. Only after receiving approval from you, the Superintendent of the Western Avalon Roman Catholic School Board and the Faculty of Education's Ethics Review Committee will I commence this study. If approval is granted, I will send you a copy of certification from Ethic's Review Committee.

This study will begin in May 1996 and end in June 1996. At that time, a summary of the findings will be reported in my internship report, and will be made available to you, the Superintendent and those interested participating teachers. Upon completion of this study, all records of informed consent and questionnaires will be stored for five years by my supervisor, Dr. Julia O'Sullivan, who will be the only individual who will have access to them. Note: The identities of the individual teachers will be kept in the strictest confidence. All reports of this research will safeguard the identities of the individuals who participated in this project.

If you agree to have the special education teachers to participate in this study, please sign below and mail it to the returned address. I would appreciate it if you would please return this letter to me by May 10, 1996.

If you have any questions or concerns please do not hesitate to contact me at 726-0701. If at any time you wish to speak with my supervisors, please contact Dr. Julia O'Sullivan at 737-3412 or Dr. William Kennedy at 737-7617. If at any time you wish to speak to a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development.

Thank you for consideration of my request.

Yours truly,

Paula Jacobs
Graduate Student
Memorial University of Newfoundland

I _____ (principal) hereby give my permission for the teacher(s) in the Special Education to participate in a study titled, "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/ Hyperactivity Disorder (ADHD)." I understand that participation is voluntary. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

Appendix H

Letter of Consent For Special Education Teachers

LETTER OF CONSENT

Paula Jacobs
c/o Dr. Julia O'Sullivan
Faculty of Education
Memorial University Of Newfoundland
St. John's, NF
A1B 3X8

Dear Special Education Teacher:

I am a graduate student in the Educational Psychology Programme at Memorial University. In order to fulfill the requirements for the Masters programme in Educational Psychology a research component must be completed. I am requesting your participation in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder (ADHD)." The purpose of this study is to explore current understandings and attitudes concerning this pharmaceutical intervention.

You will be requested to complete the attached anonymous questionnaire and mail it to the return address. The questionnaire is divided into three parts. The first section will assess your teaching experience and level of university training. The second section of the questionnaire will examine your attitudes and beliefs about the use of stimulants for ADHD. The final section will consist of questions regarding the expected or potential side effects of the stimulants. The questionnaire should take approximately 10 minutes to complete.

This study begins in May 1996 and ends in June 1996. At that time, the results of my research will be made available to you upon request. Upon completion of this study all records of informed consent and questionnaires will be stored for five years by my supervisor, Dr. Julia O'Sullivan, who will be only individual who will have access to them.

Your participation in this study is voluntary. You are free to refuse to answer any questions preferred to be omitted. All information gathered in this study is strictly confidential and at no time will individuals be identified. This study meets the ethics guidelines of the Faculty of Education and of Memorial University. It also has received approval from your principal, and the Assistant Superintendent, Patrick Collins, of the Western Avalon Roman Catholic School Board.

If you have any questions or concerns please do not hesitate to contact me at 726-0701. If at any time you wish to speak to my advisors, please contact Dr. Julia O'Sullivan at 737-3412 or Dr. William Kennedy at 737-7617. If at any time you wish to speak with a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development.

If you agree to participate in this study please sign below and return this letter with the attached questionnaire or separately by May 23, 1996.

Again, I would appreciate your participation in this study.
Thank-you for your consideration of this request.

Yours truly,

Paula Jacobs
Graduate Student
Memorial University of Newfoundland

I_____ hereby agree to participate in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder." I understand that participation is entirely voluntary. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature

Appendix I

Questionnaire: Attention-Deficit/Hyperactivity Disorder & Stimulant Medication

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER & STIMULANT MEDICATION

I am exploring current understandings and opinions regarding the use of stimulants for the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD). The term stimulant is defined as Ritalin, Cylert, or Dexedrine. Please complete the following questions to the best of your ability.

PART I: BACKGROUND INFORMATION

1. Using a check mark, please mark the appropriate box to indicate your position.

   ☐ Regular Special Education Teacher
   ☐ Challenging Needs Teacher

2. Please indicate your gender:

   ☐ Male
   ☐ Female

3. Please indicate your age:_____

4. Please indicate the level of your educational training.
   Please check all the appropriate boxes.

   ☐ Bachelor of Education (Primary)
   ☐ Bachelor of Education (Elementary)
   ☐ Bachelor of Education (Secondary)
   ☐ Bachelor of Special Education
   ☐ Have not yet completed undergraduate program
   ☐ Masters of Special Education
   ☐ Other. Please specify_____.

5. How many years have you been teaching in special education?_____.

PART II: ATTITUDES AND BELIEFS ABOUT THE USE OF STIMULANTS FOR ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD).

Directions: Using the rating scale below, please answer the following questions based on your personal experiences and opinions for each item. Circle the appropriate response.

Strongly Agree 1 2 3 4 5 Strongly Disagree

6.	I received adequate training in university about stimulant treatment for Attention-Deficit/Hyperactivity Disorder.	1 2 3 4 5
7.	Since graduating I received adequate training in professional development programs (i.e., workshops, inservices) about stimulant treatment for Attention-Deficit/Hyperactivity Disorder.	1 2 3 4 5
8.	I believe stimulants are prescribed too often for students with Attention-Deficit/ Hyperactivity Disorder.	1 2 3 4 5
9.	Stimulants are the best method of treatment for Attention-Deficit/Hyperactivity Disorder.	1 2 3 4 5
10.	Behavior modification programs are the best method of treatment for Attention-Deficit/ Hyperactivity Disorder.	1 2 3 4 5
11.	I believe Attention-Deficit/Hyperactivity Disorder is a medical condition.	1 2 3 4 5
12.	Stimulant medication should only be used as the last resort for treating students with Attention-Deficit/ Hyperactivity Disorder when all other methods have failed.	1 2 3 4 5

13. Stimulants are more effective in treating Attention-Deficit/Hyperactivity Disorder when combined with other treatment approaches such as behaviour modification. 1 2 3 4 5

14. Three out of 4 children with Attention-Deficit/ Hyperactivity Disorder will benefit from using stimulants. 1 2 3 4 5

15. I believe that many children are being diagnosed with Attention-Deficit/Hyperactivity Disorder who do not have this condition at all. 1 2 3 4 5

16. What percentage of school-age children experience Attention-Deficit/Hyperactivity Disorder:

a) < 5 %
b) 6 - 10 %
c) 11 - 20 %
d) 21 - 30 %

17. What percentage of school-age children who experience Attention-Deficit/Hyperactivity Disorder are medicated with stimulants:

a) 25 %
b) 50 %
c) 75 %
d) 100%

18. What percentage of school-age children who experience Attention-Deficit/Hyperactivity Disorder could benefit from stimulant medication:

a) 25 %
b) 50 %
c) 75 %
d) 100 %

PART III: STIMULANTS AND THEIR EFFECTS

Directions: In the following section, I am interested in your current views about the expected or potential effects of stimulants. Please answer the questions to the best of your current understanding about stimulants.

19.	Children with Attention-Deficit/Hyperactivity Disorder react differently to stimulant medication than those students who do not experience this condition.	1 2 3 4 5
20.	Students on stimulants may become drowsy if the dose is inappropriate.	1 2 3 4 5
21.	Stimulants improve student's long-term memory.	1 2 3 4 5
22.	The disruptive behaviour of students with Attention-Deficit/Hyperactivity Disorder improves with stimulant medication.	1 2 3 4 5
23.	Decreased irritability is one positive effect of stimulants.	1 2 3 4 5
24.	Ritalin increases impulsiveness.	1 2 3 4 5
25.	Suppression of height can be a side-effect of stimulants.	1 2 3 4 5
26.	Nasal congestion can be a side effect of stimulants.	1 2 3 4 5
27.	Stomachaches and/or vomiting are side effects of Ritalin.	1 2 3 4 5
28.	Stimulants may be associated with the onset of Tourette's Syndrome.	1 2 3 4 5
29.	Stimulants require ongoing increases in dosage to maintain a consistent level of effectiveness.	1 2 3 4 5

30. Student's taking stimulant medication may have difficulty sleeping. 1 2 3 4 5

31. There are no known negative side effects of Ritalin. 1 2 3 4 5

32. Stimulant medications improve a child's ability to maintain attention to tasks. 1 2 3 4 5

33. Stimulants improve a student's academic performance in the classroom. 1 2 3 4 5

34. Ritalin is a physiologically addictive drug. 1 2 3 4 5

35. A euphoric state often occurs shortly after receiving Ritalin. 1 2 3 4 5

36. The average length of time that the effect of a single dose of regular Ritalin lasts is:

a) 30 minutes
b) 4 - 6 hours
c) 12 - 24 hours
d) I don't know

Appendix J

Follow-Up Letter For Special Education Teachers

LETTER OF CONSENT

Paula Jacobs
c/o Dr. Julia O'Sullivan
Faculty of Education
Memorial University Of Newfoundland
St. John's, NF
A1B 3X8

Dear Special Education Teacher:

I am a graduate student in the Educational Psychology Programme at Memorial University. Recently, I requested your participation in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder (ADHD)." The purpose of this study is to explore current understandings and attitudes concerning this pharmaceutical intervention.

You will be requested to complete the attached anonymous questionnaire and mail it to the return address. The questionnaire is divided into three parts. The first section will assess your teaching experience and level of university training. The second section of the questionnaire will examine your attitudes and beliefs about the use of stimulants for ADHD. The final section will consist of questions regarding the expected or potential side effects of the stimulants. The questionnaire should take approximately 10 minutes to complete.

This study begins in May 1996 and ends in June 1996. At that time, the results of my research will be made available to you upon request. Upon completion of this study all records of informed consent and questionnaires will be stored for five years by my supervisor, Dr. Julia O'Sullivan, who will be only individual who will have access to the records.

Your participation in this study is voluntary. You are free to refuse to answer any questions preferred to be omitted. All information gathered in this study is strictly confidential and at no time will individuals be identified. This study meets the ethics guidelines of the Faculty of Education and of Memorial University. It has also received approval from your principal, the Assistant Superintendent, Patrick Collins, of the Western Avalon Roman Catholic School Board.

If you have any questions or concerns please do not hesitate to contact me at 726-0701. If at any time you wish to speak to my advisors, please contact Dr. Julia O'Sullivan at 737-3412 or Dr. William Kennedy at 737-7617. If at any time you wish to speak with a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development.

If you agree to participate in this study please sign below and return this letter with the attached questionnaire or separately by June 7, 1996.

Again, I would appreciate your participation in this study.
Thank-you for your consideration of this request.

Yours truly

Paula Jacobs
Graduate Student
Memorial University of Newfoundland

I_____ hereby agree to participate in a study titled "Special Education Teachers' Beliefs About Stimulant Medication In The Treatment Of Attention-Deficit/Hyperactivity Disorder." I understand that participation is entirely voluntary. All information is strictly confidential and no individual will be identified.

_____ _____

Date Signature