CHAPTER - VI
SUMMARY AND CONCLUSION

6.0.0 INTRODUCTION

The detailed report of the present investigation has been given in the previous chapters. In the present chapter the summary of the report has been presented under the following captions, Rationale, Statement of Problem, Objectives, Hypotheses, Sample Design, Tools, Procedure of Data Collection, Data Analysis, and Findings. Based on the findings of this study, Implications have been written and given in this chapter.

6.1.0 RATIONALE OF THE STUDY

6.1.1 Increasing Rate of Prevalence

In 1992, according to Parker, 3% to 5% of school population was suffering from ADHD. In 1998, Bhatara, Gupta & McMillan, reported 8% of school age population diagnosed as ADHD (5% ADHD, 3% ADD). In 1999, according to a report published by the working party of the British Psychological Society (Reason, 1999), 7-9% of school age population is affected by the disorder. More recently, Malhotra, Kohli, Kapoor and Pradhan (2009) report a 10% of incidence rate of ADHD in India in the urban sections.

6.1.2 Need for the Involvement of Parent and Teachers

Parental depressive symptoms (due to the ADHD of the child) and severity of child ADHD were associated with decreased rates of responses to the treatment of any kind (Owens, Hinshaw & Arnold, 2003). ADHD affects the well being of the parents of the children. It forces them to bear the stress caused by the poor scholastic achievement, complains from school and parents. Studies suggest (Broota, 2002) that parents deny the fact that some children require different skills to cope with the daily expectations of life and social development processes. It is very important that parents go through counselling
to themselves to overcome their own stress, anxiety and depression (Schachar & Wachsmuth, 1990) and to learn how to deal with children with ADHD.

Teacher training is another important area in changing the level of knowledge, about the causes and possible intervention for the children with ADHD in classroom setting. As mentioned by Vereb and DiPerna (2004), when children exhibit behaviour problems in school, teachers often are the first to recognize and recommend that they receive a comprehensive assessment. In addition, if a child is diagnosed with a disorder and a treatment plan is established, it may be the responsibility of the teacher to implement an intervention in the classroom. When teachers disagree with a recommended treatment, they may refuse to implement the intervention, may implement it improperly, or may fail to complete treatment (Vereb & DiPerna, 2004). Researchers have suggested that such compromised treatment integrity ultimately affects the effectiveness of treatment (Wilson & Jennings, 1996).

6.1.3 Lack of Research from Holistic/ Multimodal Intervention Approach

Although research supports the use of multimodal intervention program for children with ADHD (MTA, 1999, Jensen et al., 2001), most of the studies lack a holistic approach, (Clarke, Barry, McCarthy & Selikowitz, 2001). Review indicates that if the reading achievement has been studied and assessed for the research purposes but the writing ability has been left in most of the researchers (Cohen, Vallace, Barwick, Menna & Horodezky, 2000); or one aspect is studied and the other one is left as far as the symptomatic and resultant difficulties are concerned (Barkley, 1990).

6.1.4 Impact of ADHD on Emotional Wellbeing

In a longitudinal study, by Stipek & Graliuski (1996), it was observed that children with poor scholastic performance (chiefly due to ADHD) are rated negative by the teachers and peers. This turns them to be less task oriented and ego defensive (Poskiparta, Niemi, Lepola, Ahtola & Laine, 2003). It hampers
the self-concept and self esteem of the children, and in turn their performance deteriorates all the more.

Thus in lieu of all these factors, the topic has been selected for scientific study for the Ph.D. work.

6.2.0 STATEMENT OF PROBLEM

The statement of the problem is worded as: “Effects of Multimodal Intervention on Academic and Behavioural Performance of Children with Attention Deficit Hyperactivity Disorder”.

6.3.0 OBJECTIVES

The present study aims to evaluate the efficacy of the Multimodal Behavioural Intervention Programme on children with ADHD in terms of enhancement in classroom performance; performance consisting of grades, academic skills and the over all decrease in inattentive, impulsive and hyperactive behaviours. The following are the objectives of the study

1. To compare the means of Experimental Group at pre and post intervention level on all 20 criteria.
2. To compare the means of Control Group1 at pre and post intervention level on all 20 criteria.
3. To compare the means of Control Group2 at pre and post intervention level on all 20 criteria.
4. To compare the means of the three groups (Experimental Group, Control Group1 and Control Group2) at pre intervention level of assessment on all 20 criteria.
5. To compare the means of the three groups (Experimental Group, Control Group1 and Control Group2) at post intervention level of assessment on all 20 criteria.
6. To study the effect of multimodal intervention program on academic and behavioural performance, considering the pre multimodal intervention program score as covariate.
7. To study the overall effect of intervention on academic performance, as measured by class-based-grades (marks); academic skill learning as measured by the standardized achievement tests; behaviours as measured by the teacher, parent and researcher ratings; of the children in the three groups.

6.4.0 HYPOTHESIS

1. There is a significant difference between the pre and post intervention mean scores of Experimental Group, Control Group 1 and Control Group 2; and among the three groups in the mean scores at pre and post intervention on teacher rated measure Attention and Deportment.

2. There is a significant difference between the pre and post intervention mean scores of Experimental Group, Control Group 1 and Control Group 2; and among the three groups in the mean scores at pre and post intervention on parent rated measure Inattention, Aggression and Peer Interaction.

3. There is a significant difference between the pre and post intervention mean scores of Experimental Group, Control Group 1 and Control Group 2; and among the three groups in the mean scores at pre and post intervention on researcher rated measure Inattention, Impulsivity and Hyperactivity.

4. There is a significant difference between the pre and post intervention mean scores of Experimental Group, Control Group 1 and Control Group 2; and among the three groups in the mean scores at pre and post intervention on the class-based-grades (percent of marks) in English Reading, English Writing, English Spelling, Math Calculation and Math Application.

5. There is a significant difference between the pre and post intervention mean scores of Experimental Group, Control Group 1 and Control Group 2; and among the three groups in the mean scores at pre and post intervention on the achievement test WIAT- II in Word Reading,
Reading Comprehension, Decoding Skills, Spelling, Written Expression, Math Calculation and Math Reasoning.

6. There will not be a significant effect of pre-assessment scores on the post assessment scores, on all criteria (individually) considering the respective pre-score as covariate.

6.5.0 SAMPLE

The total sample size was of 120, including girls and boys. The sample was divided in three groups, one experimental and two controlled.

<table>
<thead>
<tr>
<th>Table B: Data Description</th>
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<tbody>
<tr>
<td>Children with ADHD</td>
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<td>(experimental)</td>
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<td>Intervention</td>
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<td>40 Boys &amp; Girls</td>
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These 120 children, (83 boys and 37 girls) were selected from five elementary schools from three adjoining school districts in South Carolina. Children were in elementary grades, attending grade second to fifth grade; age range was 7 to 11 years, with mean age of 98.5 months (SD = 6.2). Ninety two children were African-American and 28 children were Caucasians. All the children were from middle socio-economic strata and a total of 36 (19 boys and 17 girls) were in foster care. None of the children with and without ADHD were receiving any prescription medication. None of the children had co-morbid Mental Retardation, Autism, Cerebral Palsy, Neurological Impairment/illness, Conduct Disorder and Anxiety Disorder. All the children had a percentile point of 75 and above on Raven’s Colored Progressive Matrices (CPM). All the children in the three groups were regular education children i.e. no special educational support was being provided in the school. There were 40 children in each of the three groups, Experimental Group (children with ADHD with intervention), Control Group 1 (children with
ADHD, no intervention) and Control Group2 (children without ADHD, no intervention).

6.5.1 Sample Selection

Following a purposive sampling technique, children were identified initially from teachers’ report. The children who were identified as children with possible ADHD by the home room teachers were further screened. To maintain homogeneity, the children who were not on any prescription medication, were not receiving school based special education services, did not have co-morbid Mental Retardation, Autism, Cerebral Palsy, Neurological Impairment / illness, Conduct Disorder and Anxiety Disorder were screened on Connor’s Rating Scale - Revised (1997). Ratings were collected from the teachers and the parents. Children with high scores (more than 2 SD) were then observed by the researcher in classroom setting. Following DSM - IV criteria for ADHD - combined type, and following a score of 75 and above percentile point on Raven’s CPM, a total of 87 children were identified as children with ADHD for Control and Experimental Group. The 44 children whose parents agreed to bring them for the intervention procedure at a central place (district library) for one hour, three days in a week (after the school hours) were selected for Experimental Group. Other 43 children were selected for Control Group1. Some of the children had a medical diagnosis for ADHD. Forty five other children were selected from all five schools for the Control Group2 (children without ADHD, no intervention). A total of six children (from all the three groups) moved to different districts and thus their scores were deleted from the study. In the Experimental Group, one student moved out of district, two of the children discontinued as their parents were not able to bring them, and one student missed ten sessions from a total of 70 sessions in the span of six months. Finally for the Experimental Group, scores of remaining 40 children were selected for final data analysis. Mean attendance was 67.5 sessions by all other 40 children. In Control Group1, one student moved out of
district and two children started taking medication for the ADHD. This finally left 40 children in the Control Group1. In the Control Group2, four children moved out of district and one student was frequently absent from the school for various reasons, thus data of 40 children was finally analyzed.

After the initial screening, and before starting the pre intervention assessments, informed consent was taken by the parents, that they understand the risks attached, cost (of transportation) attached and give their consent for the participation.

6.6.0 DESIGN

The present research used pre and post true experimental design. The study consisted of one experimental group and two control groups to compare their scores on various assessment measures, before and after the study. The subjects in experimental group were initially put under controlled condition and measured on various pre-decided dependent variable criteria. Subjects were then placed under experimental condition and were introduced to the independent variables. Finally again the subjects were measured on the dependent variable criteria. The design is accordingly called as pretest- posttest true experimental design. (Mohsin, 1982.)

The Dependent Variables are - i. academic learning as assessed by the standardized tests of achievement; ii. academic performance as assessed by Class based grades (% of marks); iii. Attentive behaviours, impulsive behaviours and hyperactive behaviours, as assessed by researcher’s, parents’ and teachers’ ratings about the child's behaviour.

The Independent Variables are - Multimodal Intervention Program consisting of Study Skills Training, Training to increase auditory attention and processing skills, Training to reduce hyperactive behaviours (using behaviour modification techniques), Environmental Structuring, and Parent Training and Teacher Training.
6.7.0 TOOLS

6.7.1 DSM - IV Diagnostic Criteria

The Diagnostic and Statistical Manual of Mental Disorders, 4th. ed. (APA, 1994), commonly known as the DSM-IV, categorizes all psychiatric disorders, is published by the American Psychiatric Association and covers all mental health disorders for both students and adults. It also lists known causes of these disorders, statistics in terms of gender, age at onset, and prognosis as well as some research concerning the optimal treatment approaches. The DSM uses a multi-axial or multidimensional approach to diagnosing because rarely do other factors in a person's life not impact their mental health. It assesses five dimensions as described below:

Axis I : Clinical Syndromes
Axis II : Developmental Disorders and Personality Disorders
Axis III : Physical Conditions which play a role in the development, continuance, or exacerbation of Axis I and II Disorders
Axis IV : Severity of Psychosocial Stressors
Axis V : Highest Level of Functioning

6.7.2 Connor’s Rating Scale (Revised Version- Short Form)

For the screening purpose current study uses CADS-P/T (Conners’ ADHD/DSM-IV Scales–Parent/Teacher versions), which are the auxiliary scales of Conner’s Rating Scale – Revised; CRS-R, Conners' Rating Scales-Revised (CRS-R), developed by C. Keith Conners, (Conners et al., 1997) are the sets of paper and pencil screening questionnaires designed to be completed by parents and teachers to assist in evaluating students for attention-deficit/hyperactivity disorder (ADHD). The CSR-R is used as part of a comprehensive examination and is designed to be easily administered and scored. The total scales have five other auxiliary scales, which are brief and are recommended to use in screenings, treatment monitoring or limited time availability. All the scales, including long and short versions, are tools to assist
in determining whether students between the ages of three and 17 years might suffer from ADHD.

The parents' version CADS-P (auxiliary scale of CRS-R) contains 26 items and it features the option of administering both or just one of its two subcomponents. The 26 items on this scale consist of 12 ADHD Index items and the 18 item DSM-IV Symptom subscale. The teachers' version CADS-T (auxiliary scale of CRS-R) has 27 items and has 12 items from ADHD Index and 18 items from DSM-IV Symptom subscale.

Both the forms are single-paged, and numbers circled on the front are automatically transferred to a middle section for use by the clinician. The column scores can then be converted to a T-score. T-scores are standardized scores with a mean of 50 and a standard deviation of 10. These can be further converted to percentile scores as needed. As a rule, T-scores above 60 are cause for concern and have interpretive value. Interpretable scores range from a low T-score of 61 (mildly atypical) to above 70 (markedly atypical). However, again, this information should not be used in isolation to make a diagnosis.

6.7.3 Raven’s Colored Progressive Matrices

Raven’s Progressive are multiple choice intelligence tests of abstract reasoning, originally developed by Dr. John C. Raven in 1936 (Raven, 2001). In each test item, the subject is asked to identify the missing item that completes a pattern. Many patterns are presented in the form of a 4x4, 3x3, or 2x2 matrix, giving the test its name. The matrices are posed in three different forms for participants of different ability: Colored Progressive Matrices, Standard Progressive Matrices and Advanced Progressive Matrices. The current study used the Colored Progressive Matrices. It is designed for younger students, the elderly, and people with moderate or severe learning difficulties, this test contains sets A and B from the standard matrices, with a further set of 12 items inserted between the two, as set Ab. Most items are presented on a coloured background to make the test visually stimulating for participants. As
reported by Kazem (2009), is test-retest reliability coefficient for CPM is 0.56. Split half reliability coefficients ranged between 0.705-0.858 with a median of 0.81-0.91 with a median of 0.88. Concurrent validity with overall achievement using Pearson’s coefficient was found to be 0.485 and it was statistically significant at p<0.01. Concurrent validity with other mental ability test, Otis-Linone Test were calculated to be 0.641, and was statistically significant p<0.01.

6.7.4 SCLAM Rating Scale

SCLAM Rating Scale (Swanson, Conners, Loney and Milich) (Swanson, 1992) is a 23 item rating scale based upon Abbreviated Conners’ Rating Scale, IOWA Conners’ Rating Scale and Loney & Milich's and Swanson's research on these two scales. It is to be used by teachers in the classroom settings. Norms on Inattention & Deportment (over activity) are provided (Swanson, 1992). Items are rated on a 4 point scale: 0 = not at all, 1 = just a little, 2 = pretty much, to 3 = very much.

6.7.5 SKAMP Rating Scale

SKAMP - (Swanson, 1992)- The SKAMP (Swanson, Kotkin, Angler, M-Flynn, & Pelham Scale) is a 10 item scale designed to assess impairment associated with specific context-bound ADHD classroom behaviours. Teachers rate the severity of the 10 items, (6 for attention and 4 for deportment such as ‘difficulty remaining quiet according to the classroom rules’) on a 4 point scale: 0 = not at all, 1 = just a little, 2 = pretty much, to 3 = very much. It should be noted that subsequent versions of SKAMP have been developed, including one with a 7-point scale and the addition of individualized write-in item. This study used the original version of the SKAMP (Swanson, 1992), which is sometimes embedded in the SNAP-IV. Parents were asked to base their ratings on the observation of the student over the previous 4 weeks. SKAMP has been found to be related to both teacher and parent versions of the SNAP-IV (r= .93 and .79 for Inattention and Hyperactivity/ Impulsivity).
Reliability index is reported to be .98 for overall scores, .96 for Deportment and .95 for inattention (Murray et al., 2009).

6.7.6 SNAP-IV Rating Scale

The MTA version of SNAP-IV Rating Scale was used to obtain the symptom rating from the researcher. The 26 items of the MTA SNAP-IV include 18 ADHD symptoms (9 for inattentive, such as ‘often fidgets with hands or feet, squirms in the seat’) and 8 oppositional defiant disorder (ODD) symptoms, such as ‘often looses temper,’ specified in DSM-IV. Items are rated on a 4-point scale system from 0 = not at all, 1 = just a little, 2 = pretty much, to 3 = very much. The coefficient alpha for parents and teacher rating were observed to be .94 and .97 for SNAP-IV (Murray et al., 2009).

6.7.7 WIAT- II Achievement Test

WIAT- II - Wechsler Individual Achievement Test, 2nd ed. (WIAT-II), (Wechsler, 2001) was developed by David Wechsler, assesses the academic achievement of students, adolescents, college students and adults, aged 4 through to 85. The test enables the assessment of a broad range of academics skills or only a particular area of need. The suggested use of the WIAT-II is in settings such as schools, clinics, private practices and residential treatment facilities. These facilities can use the WIAT-II in order to assist with diagnosis, eligibility, placement, and decisions regarding interventions. It is encouraged to use this assessment with behavioural observation, history, and additional measures. There are four basic scales: Reading, Math, Writing and Oral Language. Within these scales there are a total of 9 sub-test scores. It offers standard scores, percentile ranks, stanines, and other scores, based either on the student’s age (four-month intervals for ages 4 through 13, one-year intervals for ages 14 through 16, and one interval for ages 17 through 19) or the student’s grade (fall, winter, and spring norms for grades Pre-K through 8, full-year norms for grades 9 through 12, and separate college norms). Internal consistency ranges from 0.80-0.98 and Test-retest reliability ranges from 0.85-
Subtests used in the current study are - Word Reading, Pseudoword Decoding, Reading Comprehension, Spelling, Written Expression, Math Calculation, Math Reasoning.

### 6.7.8 Class Based Grades

Class based grades (% of marks), given by the teachers on the teacher made assessment of performance on state based standards, (topics to be taught, as outlined by the state of South Carolina) were used as assessment of performance in the academic skill areas of English Reading, English Writing, English Spellings, Math Calculation and Math Application.

### 6.8.0 DATA COLLECTION PROCEDURE

Students were identified based on teacher information, observations by the researcher, and ratings by the parents and teachers using Connor’s Rating Scale, followed by the use of DSM-IV criteria. Parents were then sent an Informed Consent Form to provide them the information about the program as well as to seek their consent for their and their wards’ participation. Teachers and parents of all identified students were given the rating scales, SCLAM and SKAMP, respectively to give details about the behaviour of the students. WIAT (II) was administered on all the students before the start of the study. Two post graduate intern students from the university administered WIAT (II). Current researcher rated student behaviour on the rating scale SNAP-IV. After the initial data collection, interventions were given for a total of 70 sessions during a span of six months. Following the interventions, all the tests (WIAT II and rating scales) were re-administered. Teachers, parents and researcher completed the rating scales, SCLAM, SKAMP and SNAP-IV. Psychology interns completed the WIAT (II). There was a total time gap of nine to ten months between the two administrations of WIAT (II). There was a total time gap of six to seven months between the two ratings obtained by the parents and the teachers; and of seven to eight months between the ratings carried by the
researcher. Students’ class based grades were collected from the teacher-made school report cards.

Over all, time-lined sequencing of the tasks is as follows: initial screening took approximately 2 months; Pre intervention assessment took 3 months, followed by the actual intervention which took next 6 months. Post intervention assessment took the next 3 months. Overall it took almost 14 months to implement the entire intervention.

After the entire intervention, an informal closing session was held with all the students in the three groups, separately for each group and they were given a general idea that how their scores have improved and what areas they need to improve. They were also given a brief idea that how their participation would help other kids in future.

6.8.1 INTERVENTION PROCEDURE

It was a multi modal intervention procedure. Students in the Experimental Group were given the training to improve attention span, reduce hyperactivity and study skills to practice. Direct interventions to the students were given and monitored by the researcher and one certified special education teacher. Each intervention session was of 70 minutes; where 50 minutes were spent in active work, 10 minutes in maintaining and discussing the behaviour chart for all the token the students received as a part of token-system followed; and rest 10 minutes were spent as change over time in-between various activities. Students in Experimental Group were divided into two intervention groups of 22 each. Both groups were given interventions three days a week (on alternate days) by both the researcher and the special education teachers together. A total of 70 sessions of direct interventions were given to each group over a span of six months. Teachers were given training in total of five sessions about the symptoms and causes of ADHD and basic classroom strategies they could use to work with the student with ADHD. Parents were also given the training for a total of six sessions about the symptoms and causes of ADHD.
and basic behaviour management strategies they could use at home to work with the students. Class room setting was partially changed as a part of interventions.

6.8.1 i. Intervention with the Students:

- **Axis 1**: 5 minute Listening Skill task
- **Axis 2**: 10 minute Word Copying task: Guided Practice
- **Axis 3**: 20 minute Reading Skill task: Direct Instructions and Guided Practice
- **Axis 4**: 15 minutes Mathematics Skill Training
- **Axis 5**: 10 minutes: Token and Behaviour Chart Management

6.8.1 ii. Teacher Training: Five one hour sessions

A total of nine teachers, teaching the students with ADHD in Experimental Group, were given training for five sessions of one hour each. Session 1 consisted of basic introduction about the program, nature, causes and treatment for ADHD. Session 2 and 3 consisted of class-room based behaviour management strategies teachers could use, followed by the discussion. Session 4 consisted of the presentation individually by all the teachers about their experience in the class-room. Session 5 was a closing session where the group discussed how they modified their teaching strategies and the changes they noticed in the student performance and behaviour. Student grades, and improvements and persisting problems were also discussed in the fifth session.

6.8.1 iii. Training of Parents: Six one hour sessions

Parents were given training in a total of 12 sessions of twenty two parents in each group, thus each parent received a training of six sessions. **Session 1** consisted of general discussion; problems faced by the parents at home, and a brief presentation by the researcher about the symptoms and causes of ADHD. **Session 2** again focused on the symptoms, causes and behaviour modification strategies for ADHD. **Session 3** consisted of developing behaviour charts to be managed at home. **Session 4 and 5** consisted
of problems faced by the parents at home while implementing behaviour charts and the possible changes in the implementation. **Session 6** was a closing session and the parents discussed overall change in behaviour at home and school and changes in the grades.

**6.9.0 DATA ANALYSIS**

Mean scores and standard deviations were calculated using the raw scores of all the students (40 in each group) for all the rating scales, academic performance on class-tests and academic learning on standardized tests.

To study the significance of difference between the pre and post intervention mean scores of Experimental Group, Control Group1 and Control Group2 respectively correlated t test was used for all the criteria.

To study the significance of difference among the three groups in the mean scores at pre and post intervention on all the criteria, F test, 2X3 Factorial Design ANOVA was used.

To study the significance of effect of multimodal intervention program, considering the effect of pre-multimodal intervention program assessment scores on the post assessment scores, on all criteria (individually), where the respective pre-score was taken as a covariate 2X3 Factorial Design ANCOVA was used.

**6.10.0 FINDINGS**

1. Interventions increased the attention span, but did not decrease the deportment in the students with ADHD in the classroom setting, as assessed by the teachers’ ratings.

2. Interventions decreased the inattention, decreased the aggression and increased the peer interaction in students with ADHD in the classroom setting, as assessed by the parents’ ratings.
3. Interventions decreased inattention, decreased impulsivity and reduced hyperactivity in the students with ADHD in the classroom setting, as assessed by the researcher’s ratings.

4. Interventions enhanced the class based performance of students with ADHD in the areas of English reading, English writing, English spelling, math calculation and math application, as assessed by the change in class based grades.

5. Interventions enhanced the academic skills in the areas of word reading, reading comprehension, decoding, spellings, written expression, math calculation and math reasoning in students with ADHD, as assessed by the change in the standard scores on WIAT-II achievement test.

6. A statistical significant assessment was also observed in the academic skills in the areas of word reading, reading comprehension, decoding, spellings, written expression, math calculation and math reasoning of students with ADHD, who were not given any intervention, although the percent of increase in scores is higher in students who were given the interventions than students who were not given interventions.

7. The interventions were effective in increasing the attention span, decreasing hyperactivity, impulsivity, aggression and peer interaction, but were not effective in decreasing deportment, considering the pre intervention scores as covariate.

8. The interventions were effective in enhancing academic skills and academic performance, considering the pre intervention scores as covariate.

6.11 IMPLICATIONS

6.11.1 Students

The results of the study and the recommended interventions as found efficient in the current study would help the children to have a better self concept and intrinsic motivation towards learning better. It will also help the
children to be able to develop a meta-cognition towards their disruptive, inattentive and impulsive behaviours and thus to develop a self control on such behaviours. It would also help them to learn the skills to focus (be attentive) on the given visual or auditory tasks as well as to learn the academic skills efficiently.

6.11.2 Parents

The results of the study and the recommended interventions as found efficient in the current study would help the parents to understand the nature and causes of ADHD. Study would enable the parents to alleviate the guilt and anger towards their children with ADHD and to work more effectively in modifying the behaviours in home setting, participate efficiently in the classroom based learning and performance and setting a platform for multidimensional success for their children with ADHD.

6.11.3 Teachers

The results of the study and the recommended interventions as found efficient in the current study would help the teachers to understand the nature and causes of ADHD. It would help them in changing their belief that disruption is a deliberate act by the child to a broader understanding about how the behaviours are neuro-biologically determined and how various behaviour modification strategies and teacher strategies can help the children with ADHD learn and perform better, to have a better teaching-learning environment in the classroom setting. It would also help in reducing the teacher-stress while dealing with the children with ADHD on every day basis and striving to have better behaviours and better academic learning.

6.11.4 Teacher Educators

The results of the study and the recommended interventions as found efficient in the current study would help the teacher educators to develop the course contents which focuses on dealing and teaching effectively with the children with ADHD, ADHD being a highly prevalent disorder which has
multiple long term negative effects on a child’s academic, social, personal and professional life.

6.11.5 Further Research Studies

The results of the study and the recommended interventions as found efficient in the current study would be able to develop research studies in the similar direction. As the salient feature of the current study was the ‘how’ of the intervention, along with the ‘what’ of the intervention, it might give a direction for further research on this pattern. The same study can be replicated or can be carried out with some relevant modifications. The similar intervention can be administered on wider group in terms of age, gender, family background, parental support and nationality difference.

6.12.0 CONCLUSION

Overall findings indicate that the current study has been successful in developing and implementing the multimodal intervention program for children with ADHD addressing academic and behavioural performance in the classroom setting. Six months of multimodal interventions through, 72 hourly sessions of direct interventions with 40 children with ADHD, five sessions with teacher and six sessions with the parents yielded significant improvement in the children with ADHD in terms of increasing the attention span, decreasing hyperactivity, impulsivity, aggression and peer interaction, enhancing academic skills and academic performance, in comparison to their peers (with and without ADHD), in two control groups. The current multimodal intervention programme was not effective in decreasing deportment in the classroom setting. The study is important in its nature as it addresses the need of psycho-educational interventions for an increasing population of children with ADHD. It addresses the multifaceted problems in terms of behaviours pertaining to impulsivity, inattention, hyperactivity, and learning of academic skills and overall academic performance. It focuses on different academic areas such as reading, writing and math and is not limited to only reading. It involves
students along with parents and teachers, thus builds a base for more comprehensive approach in managing the problems related with ADHD. Study also has far reaching implications for students, parents, teachers, teacher educators and further research as it provides a promising base as an efficient and effective psycho-educational, non-medical, multimodal intervention program.