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Effectiveness of Nursing Intervention Package in terms of Knowledge, Reported Practice of Parents and Attention, Scholastic Achievement and Behaviour of Children with (ADHD)

Sindhu Devi M.[1], Kochuthresiamma Thomas[2]

Author Affiliation
[1]Professor cum Principal, Sree Sudheendra College of Nursng, Ambalamedu, Ernakulam, Kerala 682303, India. [2]Former Principal, Government College of Nursing, Thiruvananthapuram, Kerala 695011, India.

Reprint Request
Sindhu Devi,
Professor cum Principal, Sree Sudheendra College of Nursng, Ambalamedu, Ernakulam, Kerala 682303, India.
E-mail:
mohansindhu05@yahoo.co.in,
sreesudheendracon@gmail.com

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Abstract

ADHD is considered to be a 20th century phenomenon affecting mainly children from developed nations. The aim was to assess the effectiveness of nursing intervention package in improving the knowledge and reported practice of parents and attention, scholastic achievement & behavior of children with Attention Deficit Hyperactivity Disorder (ADHD). Quasi-experimental One group pre-test and post-test design was used. The study was conducted in selected schools of Kerala. There were 119 primary school children with ADHD between the age group of 5–12 years, their parents and teachers as study subjects. The tools were used are, Structured questionnaire to assess socio-demographic data and both knowledge and Reported Practice, Modified Vanderbilt assessment Scale (Parent & Teacher) Modified Home/School situations questionnaire (Parent & Teacher), Meditation Compliance Checklist, and Nursing intervention package. The study was carried out in 5 phases. Started the assessment with the first phase (Pre-test) and with the second phase the researcher conducted Posttest1followed by interventions as planned and continued till the 5th phase of intervention and Posttest 4. The results showed that the difference showed a marked improvement in the knowledge and practice score of parents. Regarding the effectiveness, in knowledge and practice score of the respondents before and after intervention is significantly different. There is a significant difference in the mean score & 't' value which reveals an increase in attention, scholastic achievement, and in behaviours the Home/ school assessment scale in children with ADHD. There is an association between reported practice of parents and demographic variables like sex, age in years, type of family and income per month. There is also an association between reported practice of parents and scholastic achievement. Scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. The desired behavior is increasing with increase in attention and behavior is decreasing with decrease in attention in the child as per the teacher assessment. The result also showed that the meditation has great impact in different areas if the subject is compliant to it.

Keywords: ADHD; Scholastic Achievement; Behaviors; Attention; Meditation.

Introduction

Childhood is a time of daydreaming, playing and exploring the world. Within this field of play, there can sometimes be a fine line between daydreaming and chronic inattention, play fulness and hyperactivity [1,2]. Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized by high levels of inattention, hyperactivity and impulsivity that are present before the age of seven years, seen in a range of situations, inconsistent with the child's developmental level and causing social or academic impairment [3,4]. The

worldwide incidence of ADHD in children is 3-5 per cent. In India, it is as high as 15.5 per cent. Boys outnumber girls by a large margin in clinical samples but by a smaller ratio (3:1) in the community [5,6]. The school health Nurse works in close collaboration with the students, teachers, parents, school administration and outside agencies to address the academic, social, behavioural and emotional needs of children within the school setting. Therefore, the investigator felt that there is an imperative need for exploring a safer and a more convenient alternative, which could be of more use to teachers, parents and children in the Indian setting. Hence, this study was taken up and designed to help meet these needs.

The aim was to assess the effectiveness of nursing intervention package in improving the knowledge and reported practice of parents and attention, scholastic achievement &behavior of children with Attention Deficit Hyperactivity Disorder (ADHD).

Materials and Methods

In view of the nature of the problem selected quantitative approach is considered appropriate and a Quasi-experimental One group pre-test and post-test design was used for the present study. To achieve the stated objectives the hypotheses formulated as follows

Hypotheses: (at 0.05 level of Significance)

H1: There will be a statistically significant difference in the mean knowledge and practice (reported) scores of parents of children with Attention Deficit Hyperactivity Disorder (ADHD) before and after nursing intervention package.

H2: There will be a statistically significant difference in the mean attention score of the children before and after nursing intervention package

H3: There will be a statistically significant difference in the mean scholastic achievement score of the children before and after nursing intervention package.

H4: There will be a statistically significant difference in the mean behavior score of the children before and after nursing intervention package.

H5: There will be a statistically significant association between the Knowledge score and the selected Demographic Variables like sex, age in years, number of children, birth order, type of family, income per month, father's education, father's occupation, mother's education, mother's occupation and scholastic performance.

H6: There will be a statistically significant association between the reported practice score and the selected Demographic Variables like sex, age in years, number of children, birth order, type of family, income per month, father's education, father's occupation, mother's education, mother's occupation and scholastic performance.

H7: There will be a statistically significant correlation between Attention, Scholastic achievement and Behaviour.

The investigator has selected 3 CBSE schools by purposive sampling after considering the proximity, availability of subjects and co-operation from authorities. Subjects were assigned to the study group by lottery method of simple Random sampling replacement technique. The sample comprised of 119 children with ADHD in the age group of 5-12 years, their parents and 24 teachers who are directly involved with the students. The following instruments were developed/ used by the researcher to collect data.

1. Socio- demographic data containing 25 items.
2. Structured questionnaire, consists of two sections

Section 1

It consists of 51 items on ADHD provided with three - point scale indicating true, false and do not know and which consists of the following Symptoms/diagnosis of ADHD, Management of ADHD, and Associated features.

Section 2

There are also 15 items on routine practice of parents phrased with in terms of a statement about management of their child with ADHD and uses a Yes, or No format. The scoring is done as follows:

Knowledge		
Poor	Up to 33%	0-17
Average	34- 66%	18-34
Good	Above 66%	35-51
Practice		
Poor	Up to 33%	0-5
Average	34- 66%	10
Good	Above 66%	11-15

3. Modified Vanderbilt assessment Scale (Parent):

12 Items on behavior,

03 items on academic achievements

05 items on attention

4. Modified Vanderbilt assessment Scale (Teacher):

12 Items on behavior

05 items on class room behavior

03 items on academic achievements

05 Items on attention

This is a tool is adapted from the Vanderbilt Rating Scales developed by Mark L. Wolraich, MD. Revised-1102, a slight modification was done by the researcher to apply the tool into the Indian culture with the permission of the author. The Vanderbilt Assessment Scales are scored from 0 (Never) to 3 (Very Often) for five dimensions: Inattention; Hyperactivity/ Impulsivity; Combined (Inattention and Hyperactivity/ Impulsivity);

5. Home situations questionnaire (Parent)

13 items on attention level during activities at home. This is a tool prepared from the Home and School Situations Questionnaire- Revised: Normative Data, reliability, and Validity by G.J.Dupaul, 1990. It consists of different activities a child does in the school & home which needs concentration.

6. School Situations questionnaire (Teacher)

9 items on attention level at school activities 2.

7. Meditation Compliance Checklist

Prepared by the researcher to assess the compliance with meditation. There are 06 items added on list regarding the compliance with meditation. This is a list of behaviours & mannerisms which demonstrates the degree to which the child is incorporating meditation in to daily practice.e.g. Total time which the child is able to keep his eyes closed, interest in participation, able to sit quietly, able to sit without any interruption, etc.

8. Nursing intervention package which consists of the following

i. Parent Teaching Sessions

- Definition
- Primary Symptoms
- Incidence Rate
- Causes
- Factors contributing to ADHD
- Types
- The problems associated with ADHD
- Diagnosis
- Prognosis
- The major intervention categories for ADHD
- Strategies for Parents
- Home Management
- Behavior Modification
- Concentration Enhancement Methods
- Social Skill and School BasedInterventions

The topic was planned for 3 sessions. A booklet was prepared and circulated among the parents for easy understanding and reference [13,16].

ii .Meditation

The investigator underwent a programme on meditation and relaxation exercises which is applicable to children between the age group of 5-12 years. The method of teaching was through demonstration of meditation with background music for a group of eighteen to twenty children.

Content validity of the tool:

Content validity of the tool and the intervention package was established after consulting with experts from the field of two child Psychiatrists specialized in ADHD, two psychologists specialized in ADHD, one Pediatrician who runs a clinic for children with ADHD and five psychiatric nursing experts.

Reliability:

The reliability of the tool (structured questionnaire and observation check list) was tested by administering it to 10 parents in the school. Split half method by using Karl Pearson's formula was used. The reliability is found to be r= 0.99 and hence statistically significant and thus tool found to be effective and reliable.

Procedure for Data Collection

Ethical Considerations

Ethical clearance was obtained from the institutional ethical committee of MOSC Medical College Hospital, Kolenchery, Ernakulam. Permission was also taken from the, DEO, managements & principals of different schools.

Pilot Study:

The pilot study was conducted in VyasaVidyanikethan School from 23rd of December 2010- 31st of March 2011, after getting the administrative approval from the concerned authorities.

Data Collection:

Prior to collection of data for main study the researcher took formal permission from the schools. All the samples were selected with the help of school teachers and school psychologists in consultation with a psychiatrist. From each school 39- 40 samples were taken who filled the selection criteria. The study was carried out in 5 sessions [22].

1. From the 25th to 30th of July 2011 the researcher started the sessions (Pretest) with the pre intervention assessment phase. The researcher introduced herself and explained the purpose of the study to the parents and teachers, obtained their willingness and written consent/assent was taken from the subjects. Confidentiality was assured to the subjects. A personal interview and introductory lecture was conducted. The scales used in the study were projected for the group with the help of LCD and instruction regarding the filling the forms were given. The researcher approached each respondent and administered the tools.
2. The posttest-1 and I session, was conducted along with introduction of meditation to the sample group of children. Parents also were encouraged to attend the same. The investigator demonstrated to the group. Also the researcher took the assistance of the teachers during the administration of intervention. Then the meditation was to be carried out for 10 months and the researcher observed them bimonthly with the teachers in the respective schools. The subjects were instructed by the researcher to perform meditation twice a day for at least 5 minutes with the parents or if possible more and to note the compliance as per the checklist given by the researcher.
3. The Posttest-2, 3, & 4, followed by the Nursing intervention package applied to the subjects along with the return demonstration of meditation by the group. The duration of meditation was increased to at least 10 & 15 minutes or if possible more and parents were asked to note the compliance as per the checklist given by the researcher. The post-test knowledge and practice assessment of parents and assessment of children were carried out after 11 months in all the schools. Bimonthly Observations were done to assess the progress in the children in the specified areas. Telephonic Contact with the subjects were done monthly to know the progress and also to remind them about the coming sessions.

Results

Majority (95.0%) of the children have been living with both parents. Only 9.2% of them are using spectacles. Majority (82.4%) of the mothers of respondents never had any health problems during pregnancy. 39.5% had their delivery of this child between the age group of 26 - 30 years and 38.7% of mothers had the delivery at 20 - 25 years of age. 51.3% of them had normal delivery and 79.0% of them did not have any problem during delivery. Majority (51.3%) of the respondents had a birth weight above 3 kg and 74.8% of them did not develop any problem while in the hospital. Regarding delayed milestones 8.45% were late in talking 5.9% were late in walking 5% were late in sitting and majority of

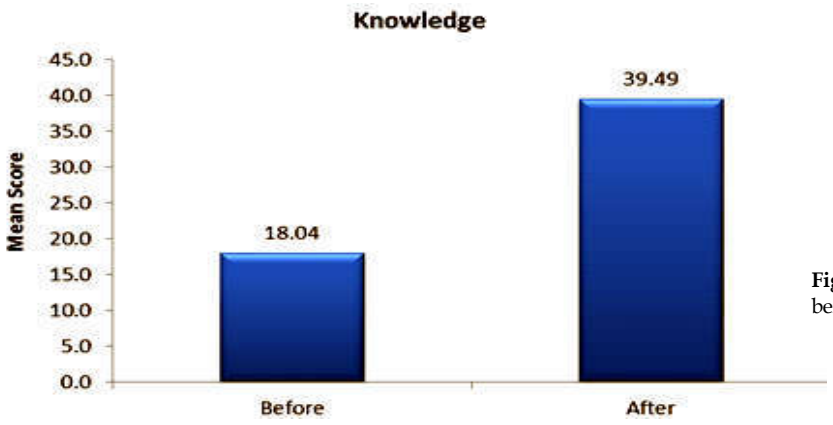

Fig. 1: Knowledge Score of the respondents before & after intervention

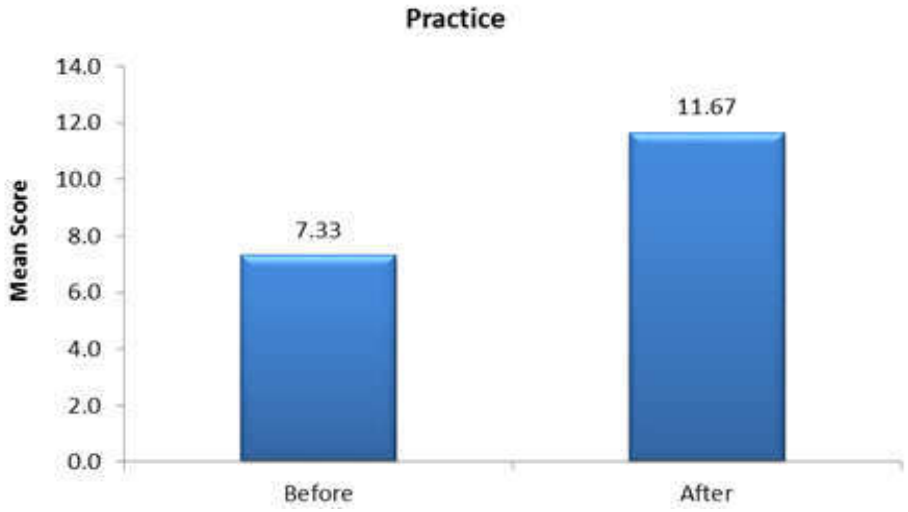

Fig. 2: Reported practice score of respondents before & after intervention

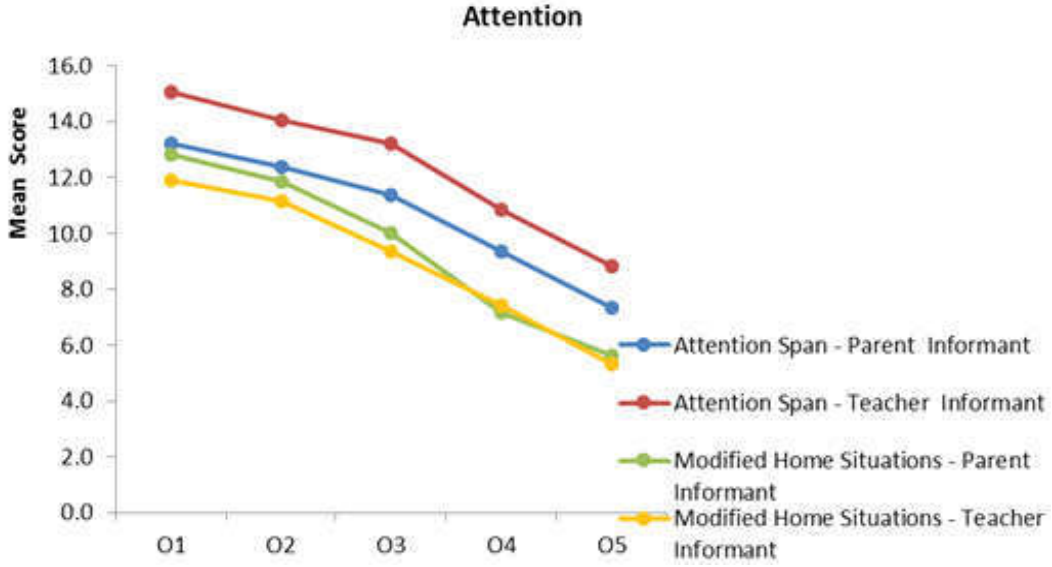

Fig. 3: Attention span score by Parent and Teacher in Home and school situations

them did not have any delayed milestones. 34.5% of them gives history of falls and 6.7% give a history of accidents.32.85% of the respondent's gives history of frequent common cold and sore throat. 29.4% of them have family history of ADHD.

Regarding knowledge, the difference is marked that 48.7% of them had poor knowledge, and 2.5% had good knowledge and which improved after nursing intervention as 2.5% of them only remained as poor scorers, and 61.34% showed a marked improvement in their knowledge score. The results showed that 26.05% of them had poor practice in managing children with ADHD, 58.8% had adequate and 15.12% had scored good after nursing intervention and only 1.7% of them remained as poor scorers, and 52.94% showed a marked improvement in their knowledge score in the parenting skills.

The ADHD knowledge score of the respondents after intervention (39.49) is significantly higher than the ADHD knowledge score before intervention (18.04).

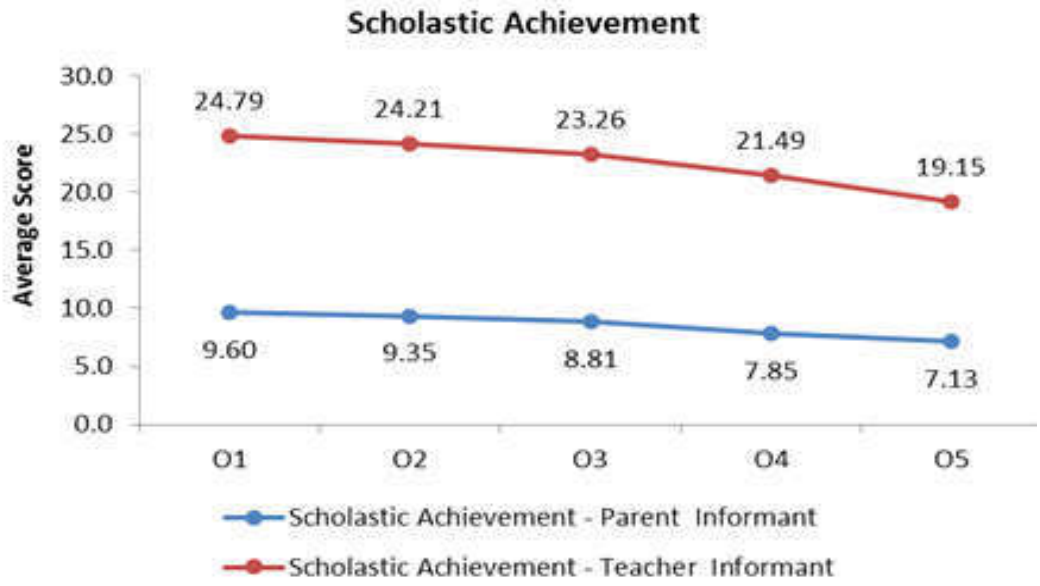

Fig. 4: Scholastic Achievement score by Parent and Teacher in Home and school situations

The reported practice of parents after intervention (11.67) is significantly higher than the reported practice of parents before intervention (7.33).

Regarding the level of problems in paying attention scored by parent, all the respondents had the highest mean score of 13.20 during the pretest. The attention score decreased to 12.37 during the posttest-1 and showed a sharp decline in attention score to 7.34 in the posttest-4 which showed a significant increase in attention in children with ADHD after the nursing intervention package. The problems with attention score decreased to 14.04 during the posttest-2 and showed a sharp decline in attention score to 8.82 in the posttest-4. This showed that there is a significant increase in attention in children with ADHD after the nursing intervention package.

Problems with attention in the home situation scored by parent, the respondents had the highest mean score of 12.83 during the pre-test. The home situation score decreased to 11.87 during the posttest-1 and showed a sharp decline in home situation score to 5.61 in the posttest-4. This shows that there is a significant reduction in problems with attention in home situation score and increase in attention in home situation score in children with ADHD after the nursing intervention package.

In the school situation score by teacher, the respondents had the highest mean score of 11.89 during the pre-test. The home situation score decreased to 11.17 during the posttest-1 and showed a sharp decline in home situation score to 5.31 in the posttest-4 shows that there is a significant reduction in problems with attention in school situations score and increase in attention in the school situations scale in children with ADHD after the nursing intervention package.

Scholastic achievement score by parent, the respondents had the highest mean score of 9.60 during the pre-test. The scholastic achievement score decreased to 9.35 during the posttest-1 and showed a sharp decline to 7.13 in the posttest-4. This shows that there is a significant reduction in problems with scholastic achievement and increase in scholastic achievement in children with ADHD after the nursing intervention package. Scholastic achievement score by teacher, the respondents had the highest mean score of 24.79 during the pre-test. The scholastic achievement score decreased to 24.21 during the posttest-1 and showed a sharp decline to 19.15 in the posttest-4 shows a significant reduction in problems with scholastic achievement and increase in scholastic achievement in children with ADHD after the nursing intervention package.

The behavior score by parent, the respondents had the highest mean score of 13.34 during the pre-test. The score decreased to 12.50 during the posttest-1 and showed a sharp decline to 7.32 in the posttest-4 and which shows a significant reduction in problems with behaviours and increase in desired behaviours in children with ADHD after the nursing intervention package.The behavior score by teacher, the respondents had the highest mean score of 13.19 during the pretest. The

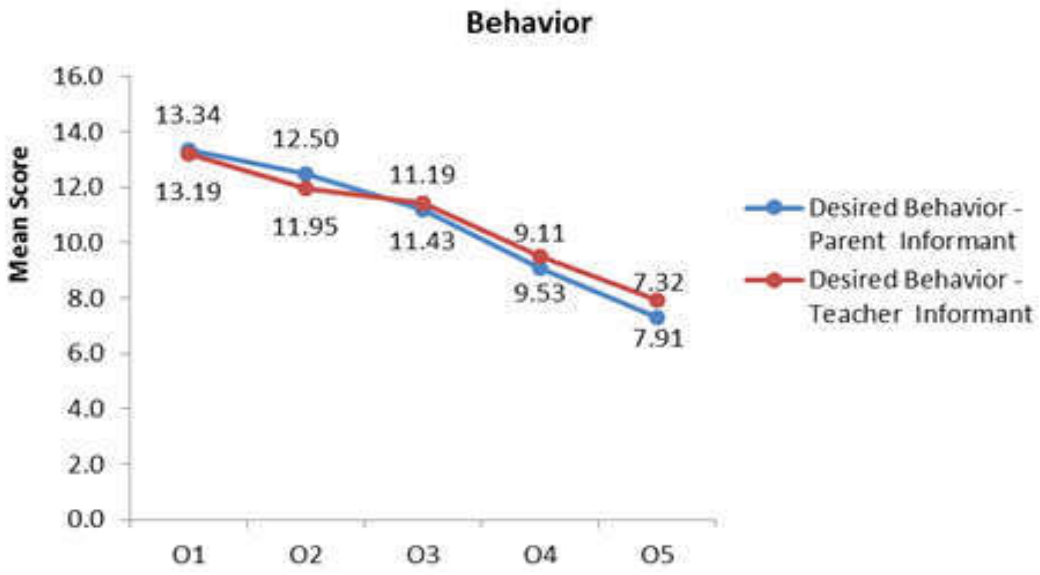

Fig. 5: Behaviour score by Parent and Teacher in Home and school situations

score decreased to 11.95 during the posttest-1 and showed a sharp decline to 7.91 in the posttest-4 which showed a significant reduction in problems with the behavior score and increase in desired behaviours in children with ADHD after the nursing intervention package.

As the p-values are less than the significance level 0.05; there is an association between reported practice of parents and demographic variables like gender, age in years, type of family and income per month. Regarding association between knowledge on ADHD and demographic variables, as the p-value corresponding to scholastic performance is less than the significance level 0.05; there is an association between reported practice of parents and scholastic performance which shows that the reported practice of parents is independent of father's education, father's occupation, mother's education and mother's occupation and dependent with scholastic performance.

As per the parent assessment, correlation between attention and scholastic achievement is significant at 0.01 level; scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. There is no correlation between attention and behavior. The correlation between behavior and scholastic achievement is also not significant.

As per the teacher assessment, the correlation between attention and scholastic achievement is significant at 0.01 levels; scholastic achievement is increasing with increase in attention and scholastic achievement is decreasing with decrease in attention. The correlation between attention and behavior is significant at 0.05 levels; desired behavior is increasing with increase in attention and behavior is decreasing with decrease in attention. The correlation between behavior and scholastic achievement is not significant.

Out of 119 subjects who attended the sessions, only 52 of them were able to follow meditation. As per the table there is a slight increase from 59.6% to 61.5% and 57.7% to 61.5% of respondents were regular in meditation and imitativeness in meditation respectively. Interest in participation was also noted from 78.8% to 80.8% .A marked increase from 48.1% to 63.5% was noted in the ability to sit quietly during meditation in the respondents. About 50% of them were able to meditate without any interruption during the third observation. Overall the result shows that the meditation has great impact in different areas if the subject is compliant to it.

Discussion

The present study showed that nursing intervention package was effective in improving the knowledge of the respondents on ADHD. The research findings support the idea that nurses can assist families in learning about and dealing with their child's ADHD, a chronic condition. Results also provide some support for the effectiveness of this parenting program for reducing symptoms of attention-deficit hyperactivity disorder (ADHD)

and associated problems in preschool-aged children. This study clearly indicated the need for preparing the parents with sufficient knowledge in order to take care of their children with ADHD. It suggests that addressing attention problems in early childhood could help many children make academic gains throughout their school careers. It also demonstrated that as nurses we have a responsibility towards our children to make sure that parents are knowledgeable about ADHD and be in a position to offer support to children so they can manage their behavior and achieve success both socially and academically. Sound mental health in childhood and especially adolescence provide a strong foundation for adult contentment, happiness and adjustment and adolescents form a significant proportion of the general population.

Conclusion

The study provided an enriching experience to the investigator. On the basis of the study it can also be concluded that a systematically planned and implemented intervention program has a positive effect on the knowledge and practice of the parents and as well as the attention, scholastic achievement and behavior of children with Attention Deficit Hyperactivity Disorder (ADHD). Success in school is like a three-legged stool in which the parent, teacher and student each play a vital role.

And the most valuable reward in teaching is hearing a student say," Thank you for understanding me".

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