

Effectiveness of Caregiver Mediated Psychosocial Interventions on Knowledge, Coping of Caregivers of Children with Attention Deficit Hyperactivity Disorder at Selected Settings

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ABSTRACT

Background: Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that often persists into adulthood. ADHD is characterized by symptoms of inattention, hyperactivity, and impulsivity, which can make it difficult for a child to function effectively in daily life. These symptoms can interfere with learning and social interactions, making it challenging for children to succeed in school and maintain relationships with peers and family members.

Aim of the Study: To assess the knowledge and coping strategies of caregivers, as well as the behavior and academic performance of children with ADHD in special schools. Additionally, the study aims to evaluate the effectiveness of caregiver-mediated psychosocial interventions for both caregivers and children with ADHD.

Materials and Methods: A quantitative research approach was adopted, utilizing a quasi-experimental pretest-posttest design with a non-equivalent control group. The study was conducted in selected special schools in Chennai. The sample size final was 75 in the experimental group and 72 in the control group, totalling 147 participants in posttest and 150 in pre-test. A non-probability purposive sampling technique was used to select the participants.

The following tools were used for data collection: A structured knowledge questionnaire for caregivers, the Craver's Brief COPE scale to measure caregiver coping, the Pediatric Symptom for children's behavior, The DuPaul's Academic Performance Rating Scale for children's academic performance.

Results: The interventions were highly effective, leading to very high statistical significance for all primary outcomes in the experimental group, while the control group showed no significant change. In pre-test, majorities in both the Control group (87%) and the Experimental group (91%), showed Inadequate knowledge and Ineffective Coping scores for problem-focused coping, respectively. Post-test, 80% of the experimental caregivers achieved Adequate knowledge (mean gain of 5.01, $t=16.56$, $p=0.001$), and 80% achieved an Effective Coping Score (mean gain of 24.39, $t=18.86$, $p=0.001$). Similarly, pre-test scores for child behavior showed high levels of Unacceptable Behavior (e.g., 97% for Externalizing behavior in the experimental group). Post-test, 97% of children in the experimental group had an Acceptable Behavior Score (mean reduction of 8.41, $t=14.02$, $p=0.001$) and 91% showed Good Academic Performance (mean increase of 18.80, $t=16.03$, $p=0.001$) on the Learning Ability forward score. In contrast, the control group showed negligible or no significant improvement across all measures.

The gains observed were moderately correlated within the experimental group. A positive moderate correlation was identified between the behavior score and academic performance gain score with the Karl Pearson r value of 0.42 which was highly significant at $P=0.001$ in the experimental group. This suggests that reduced problematic behavior was linked to improved academic performance. Conversely, the control group showed only a weak positive correlation ($r=0.17$, $P=0.35$). The correlation for Knowledge Gain and Coping Gain was 0.125 using Karl Pearson's r , indicating a small positive relationship. Overall, the data confirms the profound effectiveness of the caregiver-mediated psychosocial interventions.

Conclusion: Caregiver mediated psychosocial interventions was effective and found to be significant in modifying the knowledge and coping among caregivers and behavior, academic performance of children with ADHD. Thus, the caregiver mediated psychosocial interventions can be incorporated as a strategy for caregivers and children with ADHD and it can be followed at special schools.

Keywords: *knowledge, coping, behavior, academic performance, caregiver mediated psychosocial interventions*

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INTRODUCTION

ADHD affects about 5–10% of school-aged children around the world. Boys are more likely to be labelled with ADHD than girls. ADHD is a complicated condition that has a mix of genetic, environmental, and biological factors. ADHD is an illness that impacts various areas of the brain and is complicated.¹

The World Mental Health Surveys (2021) estimated that the ADHD prevalence rates across the globe. In Norway, Germany, and Spain it has been reported as 1.9%, 1.8%, and 5.4%, respectively. The prevalence rates of ADHD in children and adolescents were observed to be the highest in the United States (8.1%) and the lowest in Iraq, Poland, and Romania (0.4%).²

In India, prevalence of ADHD among adolescents is 7.1%, with a 95% confidence interval (CI) ranging from 5.1% to 9.8%. The prevalence of ADHD among male children was 9.40%, while among female children it was 5.20%. The prevalence of ADHD range for children aged 8-15 years was between 7.6% and 15%.³

A survey was conducted in Tamil Nadu, India to assess the burden of mental disorders. The State level disease burden initiative identified the social dysfunction index of mental disorders in the states of India, as determined by the Crude Disability Adjusted Life Year rates. The disability adjusted life year for individuals with ADHD between the age group of 5 and 85 was found to be 4.9 (with a range of 3.0-7.9).⁴

It was identified that the Parent Skills Training Intervention (PSTI) was effective in fostering positive parent-child relationships in Indian families of children diagnosed with attention-deficit/hyperactivity disorder. The Results of the Mixed ANOVA analysis indicated that there were no significant differences between the group that received PSTI with medication and the group that received PSTI on any VADPRS domains, except for depression/anxiety scores. Over 60% of parents reported that the PSTI was beneficial in enhancing their awareness, mitigating feelings of guilt or blame, and reducing stress levels.⁵

The investigator has interacted with many caregivers with special children during the clinical supervision and had known about its impact on daily life which instigated the investigator to develop interest and also the relevant literatures motivated the investigator to undertake the present study which aimed to ensure that the caregivers will have good knowledge and coping. The investigator is much interested in studying the behavior and academic performance of children with ADHD. The role of caregiver mediated psychosocial interventions, such as the use of comprehensive interventions, has been shown to be efficient for enhancing knowledge and coping

abilities in caregivers and improve the children's behavior and academic performance

OBJECTIVES OF THE STUDY

1. To assess and compare the level of knowledge and coping of the caregivers of children with the ADHD between the experimental and control group.
2. To assess and compare the behavior and academic performance of children with ADHD between the experimental and control group.
3. To assess the effectiveness of caregiver mediated psychosocial interventions on knowledge and coping of caregivers of children with ADHD.
4. To assess the effectiveness of caregiver mediated psychosocial interventions on behavior, academic performance of children with ADHD.
5. To correlate the mean differences in knowledge and coping scores of the caregivers of children with ADHD.
6. To correlate the mean differences in behavior and academic performance scores of children with ADHD.
7. To associate the selected background variables with the mean differences in knowledge and coping of the caregivers of children with ADHD in experimental and control group.
8. To associate the selected background variables of caregivers with the mean differences in behavior, academic performance scores of children with ADHD in experimental and control group
9. To associate the selected background variables of children with the mean differences in behavior, academic performance scores of children with ADHD in experimental and control group.
10. To associate the selected background variables of children with ADHD with the mean differences in knowledge, coping scores of caregivers in experimental and control group.

THE NULL HYPOTHESES

H0A : There is no significant difference between the pre and post-test level of knowledge and coping of caregivers of children with ADHD between the experimental and control group.

H0B : There is no significant difference between the pre and post-test level of behavior and academic performance of children with ADHD between the experimental and control group.

H0C : There is no correlation between the mean differed

knowledge and coping scores of the caregivers of children with ADHD in experimental and control group

H0D : There is no correlation between the mean differed behavior and academic performance of children with ADHD in experimental and control group

H0E : There is no significant association of the selected background variables with the mean differed knowledge, coping of the caregivers of children with ADHD in experimental and control group

H0F : There is no significant association of the selected background variables of caregivers with the mean differed behavior, academic performance scores of children with ADHD in experimental and control group

H0G : There is no significant association between the selected background variables of children with ADHD with the mean differed knowledge, coping scores of caregivers in experimental and control group

H0H : There is no significant association between the selected background variables of children with ADHD with the mean differed behavior, academic performance scores of children with ADHD in experimental and control group

The major assumptions were

1. Care givers of children with ADHD may have some knowledge and coping regarding ADHD
2. Caregiver mediated psychosocial interventions may enhance the knowledge of the caregivers of children with ADHD
3. Children with ADHD may have some behavioral issues and lack in academic performance
4. Caregiver mediated psychosocial interventions may positively influence on the behavior change of children with ADHD.

The conceptual framework for the present study was based on Theory of Planned Behavior by Arjzen (1991) and Protection Motivation Theory (PMT) by Rogers 1983 which guided the investigator to prepare and train the caregivers of children with ADHD to train and to empower the children with ADHD through the interventions.

MATERIALS AND METHODS

A quantitative research approach was chosen and a quasi-experimental pretest-posttest design with non-equivalent control group design was adopted for the study. The samples of the study consisted of 147 caregivers and children with ADHD who fulfilled the sample selection criteria. Non probability purposive sampling method was used to select samples. The tools used were the structured knowledge questionnaire for the knowledge and Craver's brief cope for coping of the caregivers and pediatric symptom checklist for behavior and Du Paul's Academic

performance rating scale for academic performance of children with ADHD.

The investigator executed the Caregiver mediated psychosocial interventions which included the following aspects:

Day-1: Pretest assessment of background variables, knowledge, coping of caregivers and behavior, academic performance of children with ADHD

Day -2: Caregiver mediated psychosocial interventions - It consists of 10 activities such as mindfulness exercises, self-reflective journaling and autogenic relaxation techniques, communication exercises, fidgeting management and anger management, the memory game, colored counting game, spell train exercise, and play sorting game.

Post assessment 1-after 2nd week post-test of knowledge and coping was done for caregivers of children with ADHD

Post assessment 2 – after 6th week post-test of behavior and academic performance was done for children with ADHD

RESULTS AND DISCUSSION

In pre-test, majority, 73% of the caregivers had moderate level of knowledge, 27% of them had inadequate level of knowledge and none of them are having adequate level of knowledge in the experimental group whereas in control group, 87% of the caregivers had inadequate level of knowledge, 13% of them had moderate level of knowledge and none of them had adequate level of knowledge score.

In post-test, 0% of caregivers had inadequate level of knowledge, 20% of them had moderate level of knowledge and 80% of them had adequate level of knowledge in experimental group and whereas in control group, 87% of the caregivers had inadequate level of knowledge, 13% of them had moderate level of knowledge and none of them had adequate level of knowledge score. This showed that the caregiver mediated psychosocial interventions was effective in improving the caregiver's knowledge in the experimental group.

In pre-test, majority, 91% of the caregivers had Ineffective Coping Score in problem- focused coping, 10% of them had Effective Coping Score in the experimental group whereas in control group, 100% of the caregivers had Ineffective Coping

Score, 0% of them had effective level of coping and in post-test, 20% of caregivers had Ineffective Coping Score and 80% them had Effective Coping Score in problem-focused coping in experimental group and 90% of them had Ineffective Coping Score and 10% of the caregivers had effective coping in control group.

In pre-test, 3% of the children had Acceptable Behavior

Score in externalizing behavior, majority 97% of them had Unacceptable Behavior Score in the experimental group whereas in control group, 0% of the children had adaptive behavior, 100% of them had maladaptive behavior ; in post-test, in experimental group 97% of children had Acceptable Behavior Score, 3% of them had maladaptive behavior and in control group 0% of them had adaptive behavior and 100% of the children had maladaptive behavior.

In pre-test, 91% of the children had Poor Academic Performance on the Learning ability forward score, 9% of them had Good Academic Performance in the experimental group whereas in control group, 100% of the children had Poor Academic Performance

, 0% of them had good level of academic performance ; however in post-test, 9% of children had Poor Academic Performance and 91% them had Good Academic Performance in experimental group and 100% of them had Poor Academic Performance and 0% of the caregivers had good level of academic performance in control group.

Independent t test was used to compare mean pre-test and posttest, knowledge, coping scores of caregivers and behavior, academic performance of children with ADHD between experimental and control group. It was inferred that in pre-test there was no statistically significant difference observed. However, in posttest, very high level of significant difference observed between experimental and control group. This shows

the caregiver mediated psychosocial interventions was effective in improving the knowledge, coping scores of caregivers and behavior, academic performance of children with ADHD in the experimental group.

The correlation between the mean differed score of knowledge with coping among caregivers in experimental group revealed that the calculated r value was 0.125 which infers that there is a moderate positive correlation between knowledge gain score and coping gain score. It means knowledge score increases, their coping gain score also increases fairly, which was found to be statistically significant at $P < 0.001$ level in the experimental group (implied by Spearman $\rho = 0.151$, $r = 0.125$ is weak/moderate). No significant correlation was seen in the control group (implied by non-significance outside of experimental group).

The correlation between the mean differed score of behavior with academic performance among children in experimental group revealed that the calculated r value was

0.42 which infers that there is a significant positive moderate correlation between behavior score and academic performance gain score. It means behavior score reduced with their increased academic performance gain score, which was found to be statistically significant

at $P = 0.001$ level in experimental group. No significant correlation was seen in the control group ($r = 0.17$, $P = 0.35$).

There was a significant association between selected demographic (e.g., parental education, child's age/gender, parental status), lifestyle variables (e.g., duration of child's time spent with family), and past health history with the knowledge and coping gain scores of caregivers in the experimental group.

There was a significant association between selected demographic (e.g., child's gender, father's education/occupation), lifestyle variables (e.g., distance permitted for outdoor play, duration of child's time spent with family), and past health history with the behavior and academic performance gain scores of children with ADHD in the experimental group.

CONCLUSION

The study findings revealed that caregiver mediated psychosocial interventions was effective and found to be significant in modifying the knowledge, coping of the caregivers and behavior, academic performance of children with ADHD. Thus, the caregiver mediated psychosocial interventions can be incorporated as a promotional and preventive, strategy for imparting knowledge and improving coping among caregivers and it can be followed at selected special schools to help achieving healthy behavior and enhance the academic performance. The caregiver mediated psychosocial interventions may be implied in various contexts of nursing education, administration, services and research.

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