Vol 5 Issue 2 Aug 2015

ISSN No :2231-5063

# International Multidisciplinary Research Journal

# Golden Research Thoughts

**Welcome to GRT**

**RNI MAHMUL/2011/38595** **ISSN No.2231-5063**

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board.Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

## *International Advisory Board*



## *Editorial Board*



**Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India**
**Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.in**

Golden Research Thoughts
ISSN 2231-5063

Impact Factor : 3.4052(UIF)
Volume - 5 | Issue - 2 | Aug - 2015

# IMPACT OF DIETARY PATTERN AND PHYSICAL ACTIVITY ON OBESITY AMONG NORMAL CHILDREN AND CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Avanti Prabhakahar
Research Scholar, Pondicherry University & Asst. Professor, Department of Postgraduate Studies and Research Studies in Home Science,Justice Basheer Ahmed Sayeed College for Women (Autonomous), Chennai.

Co - Author Details :
Sangeetha Narayansamy
Asst.Professor,Pondicherry University.

ABSTRACT

The aim of the present investigation was to evaluate the impact of dietary pattern and physical activity on obesity among normal children and children with Attention Deficit Hyperactivity Disorder. (ADHD) The study was carried out on 6-12 year old children .This investigation was carried out among a total of 120 school going children out of 60 normal children were from the mainstream schools (32 boys and 28 girls), 60 children with ADHD were from the specialschools (47 boys and 13 girls).The technique used for the sampling was Purposive sampling technique. The primary data was gathered using questionnaire as a tool .The data was subjected to statistical interpretation using SPPS.(version 17)

The overall results concluded as, the children with ADHDexhibited a healthier dietary pattern over theircounterparts from the mainstream schools. The normal children spent more amount of time in outdoor activities and screen based leisure activities, when compared to children with ADHD. Lastly incidence of overweight and obesity was found to be higher and prevalent in normal children than the children with ADHD.

KEYWORDS :*Dietarypattern, physical activity, leisure time activity, obesity, normal children and children with ADHD.*

## INTRODUCTION :

Obesity is no more a rich man's possession. It continues to rise up both in industrialized and developing nations. Age is not a bar. Overweight/ Obesity in children is associated with multiple social and neurological problems.Childhood obesity is a condition where excess body fat adversely affects the child's health or wellbeing. It is being recognized as a serious public health issue. The term overweight rather than obese is often used in case of children as it is less stigmatizing.

Children at risk of becoming overweight or obese include the ones who consume food and drinks that are high in sugar and fat on a regular basis such as fast foods, candies, bakery goods and other sugar-laden beverages.

Children, who are not being physically active each day, watch a lot of television, play video

games excessively, indulge in the activities that don't burn calories are also at a great risk of becoming overweight. Likewise children who live in an environment where healthy eating and physical activity are not encouraged, come from a family of overweight people are also prone to become obese.The lack of physical activity among youth can be attributed to a non-structured play-time, reduced recess time and physical education. Today children are spending less than half the amount time playing outdoors as they did 20 years ago. Whether watching television, playing computer or with video games, children are spending less time being active outdoors, and more time plugged in indoors. Children spend an average of 3- 7 hours per day plugged into electronic media and spend only about 30 minutes to 1 hour for physical activities leading to an array of physical, psychological health issues in children.

The most common and prevalent psychological problems of children are various learning disabilities, ADHD, autism, childhood aggression, depression etc.It is self-evident that engaging in physical activity (at school and also outside of school) is important, and it might be even more important for children with ADHD since they might be at higher risk of obesity.

Diet alone is probably not the only driving force behind the many cognitive and behavioral symptoms that trouble children with Attention Deficit Hyperactivity Disorder (ADHD). Yet in the recent past, there is evidence that certain modest dietary changes for children with ADHD could help supplement standard treatments that include psychotherapies and behavioral changes.Factors such as nutrition and its effect on brain imbalance are often overlooked by researchers in various investigations.

In this study researchers have chosen childhood obesity as an independent variable in relation with a specific learning disability-ADHD, which is more commonly seen today than the yesteryears.

Regular physical activity provides important health benefits for children with disabilities. Benefits include improved cardiovascular and muscle fitness, improved mental health, and a better ability to do tasks of daily life. Sufficient evidence now exists to recommend that people and children with disabilities should get regular physical activity.

Physical activity can help people of all abilities including ADHD improve their overall health and fitness, and reduces the future risk for many chronic diseases.

## AIM OF THE STUDY

The aim of the present study is to assess the impact of dietary pattern and physical activity on incidence of obesity among normal childrenand children with ADHD.

## OBJECTIVES OF THE STUDY

- To study the impact of the dietary pattern on incidence of obesity among normal children and children with ADHD.
- To study the impact of the physical activity on incidence of obesity among normal children and children with ADHD.
- To study the association between dietary pattern and physical activity on incidence of obesity among normal children and children with ADHD.

## METHODOLOGY

### Tools used-

The tool to assess the impact of dietary pattern and physical activity on incidence of obesity among normal and children with ADHD was formulated and standardized by the investigator herself.

The tool was distributed to the mothers of the normal children and children with ADHDin their

respective schools during their parent teacher meeting and instructions were given to tick the response which they feel or think is correct in accordance to the statement.

## SELECTION OF SAMPLE

The total sample used for the study consisted of 120 school going children between 6-12 years. Out of which 60 children were from the regular schools (32 boys and 28 girls), and 60 children with ADHD were from the special schools (47 boys and 13 girls). The sample was selected using Purposive sampling technique.

## RESULTS AND DISCUSSION:

The result were discussed with respect to their frequency, mean scores, standard deviation and't'-test.

TABLE 1

DURATION OF EXERCISE WISE DISTRIBUTION OF NORMALCHILDREN AND CHILDREN WITH ADHD

| Duration of exercise | Normal Children | Children with ADHD | Total |
|---|---|---|---|
| 1 Hour | 28 (53.8%) | 23 (74.2%) | 51 (61.4%) |
| 2 Hour | 15 (28.8%) | 6 (19.4%) | 21 (25.3%) |
| 3 Hour | 9 (17.3%) | 0 (.0%) | 9 (10.8%) |
| >4 Hour | 0 (0%) | 2 (6.5%) | 2 (2.4%) |
| Total | **52 (100.0%)** | **31 (100.0%)** | **83 (100.0%)** |

On observation of table 1, 54 per cent children hailed from normal schools and 74 per cent from the special schools performed at least 1 hour of physical exercise in a day.

Thus it can be concluded that 83 per cent children performed at least one hour of exercise daily from both normal and special schools. Children from normal schools were found be more physically active than their ADHD counterparts.

TABLE 2
HEIGHT WISE COMPARISION OF NORMALCHILDREN AND CHILDREN WITH ADHD

| Variables | Study group | N | Mean | Standard Deviation | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| Height (in cm) | Normal children | 60 | 134.28 | 9.328 | 3.21 | 0.01 |
| | Children with ADHD | 60 | 122.40 | 27.144 | | |

NOTE: Significant at the 1% level

It can be seen from table 2 that the mean scores of height (in cm) for normal and children with ADHD is 134.28 and 122.40 respectively. Thus it can be said that mean height of childrenwith ADHD was lesser than the normal children.

The t-value (t=3.21) is higher than the table value (1.96). Hence it can be said that there is a significant difference at the 1% level in the height wise comparison of normal children and children with ADHD.

The present study indicated that the height of normal children was found to be more than the childrenwith ADHD. This can be attributed to the better participation of normal children in physical activity than their counterparts.

TABLE 3
WEIGHT WISE COMPARISION OF NORMAL CHILDREN AND CHILDREN WITH ADHD

| Variables | Study group | N | Mean | Standard Deviation | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| Weight (In Kilograms) | Normal children | 60 | 35.52 | 7.959 | 4.88 | 0.01 |
| | Children with ADHD | 60 | 26.40 | 12.114 | | |

NOTE: Significant at the 1% level

It is evident from the table 3, that the mean scores of weight wise (in Kg) comparison of normal and children with ADHDare 35.52 and 26.40 respectively. Thus it can be concluded that the weight of normal children was higher than the children with ADHD. Further perusal of the table indicates that there exists a significant difference at the 1% level in the weight wise comparison of normalchildren and children with ADHD as the calculated t value (t=4.88) is higher than the table value. (1.96)

The results showed that normal children weighed heavier than the children with ADHDof the same age. The normal children were found to have higher amount of time watching television and in playing multimedia games as leisure time activity when compared to children with ADHD.

TABLE 4

BMI PERCENTILE WISE COMPARISION OF NORMAL CHILDREN AND CHILDREN WITH ADHD

| Variables | Study group | N | Mean | Standard Deviation | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| BMI Percentile | Normal children | 60 | 75.62 | 25.620 | 5.42 | 0.01 |
| | Children with ADHD | 60 | 43.75 | 37.661 | | |

NOTE: Significant at the 1% level

Table 4 indicates the mean scores of BMI percentile wise comparison of normal and children with ADHDas 75.62and 43.75 respectively. Thus it can be seen that BMI percentile of normal children was more than children with ADHD.The t-value (t=5.42) is higher than the table value (1.96). Hence it can be said that there exists a significant difference at the 1% level in the height wise comparison of normalchildren and children with ADHD.

The BMI percentile of normal children was found to quantitatively more than the children with ADHD, which can be attributed to their statistically significant higher fat consumption in the form of fried snacks on daily basis.

TABLE 5
FAT INTAKE WISE COMPARISION OF NORMALCHILDREN AND CHILDREN WITH ADHD

| Variables | Study group | N | Mean | Standard Deviation | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| Daily Fat intake (in grams) | Normal children | 60 | 83.84 | 80.90 | 2.69 | 0.01 |
| | Children with ADHD | 60 | 47.41 | 66.69 | | |

NOTE: Significant at the 1% level

It is evident from the table 5, that the mean scores of daily fat consumption (in gm.) wise comparison of normal children and children with ADHD was 83.84 and 47.41 respectively. Thus it can be seen that fat consumption was higher in normal children. The t-value (t=2.69) is higher than the table value (1.96),henceit can be concluded as there is a significant difference at the 1% level in the fat intake wise comparison of normal childrenand children with ADHD.

In this study normal children consumed higher quantity of fat rich foods than the childrenwith ADHD. They also consumed higher amount of sugar, jaggery, oil and ghee.

TABLE 6
CARBOHYDRATE INTAKE WISE COMPARISION OF NORMAL CHILDREN AND CHILDREN WITH ADHD

| Variables | Study group | N | Mean | Standard Deviation | 't' value | Level of Significance |
|---|---|---|---|---|---|---|
| Carbohydrate (in grams) | Normal children | 60 | 196.65 | 63.88 | 2.27 | 0.05 |
| | Children with ADHD | 60 | 173.70 | 45.24 | | |

NOTE: Significant at the 5% level

It is evident from the table 6 that the mean scores of daily carbohydrate intake (in gm.)for

normalchildren and childrenwith ADHDwas 196.65 and 173.70 respectively. Thus it can be seen that carbohydrate intake of normal children was found to be higher than the childrenwith ADHD

As the t-value (t=2.27) was found to be higher than the table value, (1.96) it can be concluded that there is a significant difference at the 5% level in the carbohydrate wise comparison of normal and childrenwith ADHD.

The study also showed that the carbohydrate intake was higher in the normal school children. This is due to the higher consumption of foods like rice, beansand potatoes on the regular basis.

## CONCLUSION

The present study concluded that, there was a significant difference between height, weight, BMI percentile, fat and carbohydrate consumption wise comparisons of normalchildren and childrenwith ADHD.

To summarize the overall results, when the comparison of dietary pattern and physical activity of normal children was done with theirADHD counterparts of the same age, the following findings were drawn:

- The childrenwith ADHDexhibited healthier dietary pattern over the normal children.
- The normal children spent greater amount of time in physical activities and in the screen based activities, when compared to the childrenwith ADHD.
- Overall incidence of overweight and obesity was found to be higher and more prevalent in the normal school going children in this investigation.

## BIBLIOGRAPHY

1.Bandini L.G, Curtin C, Hamad C, Tybor D. J, Must A. (2005). Prevalence of overweight in children with developmental disorders in the continuous national health and nutrition examination survey (NHANES), Journal of Pediatrics, Vol: 146, Pp. 738–43.

2.Barbara A.D, Peerson, J.M, Brown K.H, (2002) TV/video viewing habits of a multiethnic, low income preschool population of children American Journal of Pediatric Nutrition., , Vol: 78(4) Pp.756–764

3.Bowman S.A, Lawlor, D, Kimm, (2003) Fast food consumption and effect of dietary pattern and risk of obesity, Lancet, Vol: 375 (9727), Pp. 1737–1748.

4.Cortese S., Isnard, P., Frelut, M.L.G., Michel, G., Guedeney, A., Falissard, B., Acquaviva, E., Mouren, M.C. (2007). Association between symptoms of Attention-Deficit/Hyperactivity Disorder and bulimic behaviors in a clinical sample of severely obese adolescents, International Journal of Obesity 31(2):340-6. IF: 4.04

5.Grimm GC, Harnack L, story M,(2004). Factors associated with soft drink consumption in school aged children, Journal of American Dietetic Association,104(8):1244-9.

6.Jamal H. A., Taha A.Z.,. Sabra A.Bella H.(2008.) Attention Deficit Hyperactivity Disorder (ADHD) among Male Primary School Children in Dammam, Saudi Arabia: Prevalence and Associated Factors, Journal of Egypt Public Health Association Vol. 83 No. 3 & 4

7.Jones L.R, Taylor E. Jensen P.S. Cantwell D.P,(2008). Dietary determinants of obesity in children, PubMed, Vol: 351(9100) Pp. 568–620.

8.Logan S.W, Rudolf, M.C, Anhalt, H.(2011). Motor proficiency and body mass index (BMI) in preschool children,American Journal of Pediatric Nutrition, Vol: 94(4) Pp. 757–787.

# Publish Research Article
# International Level Multidisciplinary Research Journal
# For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper,Summary of Research Project,Theses,Books and Book Review for publication,you will be pleased to know that our journals are

## Associated and Indexed,India

- International Scientific Journal Consortium
- OPEN J-GATE

## Associated and Indexed,USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Databse
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005,Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.in