

PalArch's Journal of Archaeology  
of Egypt / Egyptology

HEAVY WEIGHT SCHOOL BAG AND IT'S IMPACT ON THE PHYSICAL  
HEALTH OF THE CHILDREN

*Dipjyoti Das<sup>1</sup>, Dr. Dulumoni Goswami<sup>2</sup>*

<sup>1</sup>Research Scholar, Department of Education, Gauhati University

<sup>2</sup>Associate Professor, Department of Education, Gauhati University

**Dipjyoti Das<sup>1</sup>, Dr. Dulumoni Goswami<sup>2</sup> heavy weight school bag and it's impact on the physical health of the children, -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(9). ISSN 1567-214x**

**Key words: School bag, physical health, children, education, heavy weight school bags.**

### ABSTRACT

In the recent years heavy weight bag of the school children has been an important issue all over India. In spite of the government norms the school bag weight has been increasing day by day and it becomes a huge burden on the small children. Regular use of these heavy bags can put the small children at the risk of various physical health problems such as spinal pain, back pain, shoulder pain, muscle injury etc. The present study wants to throw lights on these physiological problems of the children occurred by carrying the heavy loaded schoolbags. The study was conducted under descriptive survey method where 120 samples of students were collected through convenient sampling. Data were analyzed through simple percentage.

**Key words:** School bag, physical health, children, education, heavy weight school bags.

### Introduction

Childhood is the golden days of human life. It is the period where the small buds of flowers start to bloom. It's a fundamental stage and its influence extends to the adulthood. The dictionary defines childhood as the period between infancy and puberty. This is the period where they

need most freedom, knowledge, curiousness, daydreaming and play. But in now a day, this freedom has been reducing from their life, they are losing their opportunity to explore everything they need because of the outer forced activities. They don't have the time to play in the morning as they have to go for school at very early morning. In the evening time they have to engage themselves with the homework. Adults began to chip away their freedom by increasing their school time, schoolwork, home work. Adult directed sports for children began to replace the games, hobbies. Here is another devil spoiling the childhood that is school bag. Carrying very heavy schoolbags have brought many side effects among the small school students. Health providers and researchers have explained their concern about the ill effect of carrying the excessive loaded bags by the small school students. Among the health problems back pain is most common among the student which is caused due to carrying of heavy weight. In earlier this problem was not regarded as common but now it has become a serious problem.

### **Review of Related study**

Everyday all students of primary, middle and secondary school students run towards the school with a very loaded stuff hanging over their shoulder. Normally it seems harmless but if we go to the deep of the health of the students we will see painful back and neck problems among them. Researchers say sometimes they carry more than 20-30% of their own body weight which is harmful for their physical and mental health. Dr. Seymour Zimble – an Orthopedic Surgeon of Boston, in his article 'Frequency of low back pain due to heavy bags among school going children' in 2013 recommended that students should not carry the bags more than 10-15% of their total body weight. If the students walk by carrying a heavy load on their back or shoulder, their posture may change. They have to bend forward and raise their head. Iran Jahanbin, N Behestipour and Ali Haghnegahdar of Shiraz University of Medical Science, Shiraz, Iran (1892) in their study '1982 revealed that those students carry over 10% of their body weight,

94% of them suffered from physical complaints. Avantica Rai and Shalini Agarwal 2015 focused on the checking of physiological stress due to the heavy weight of school bags carried by the students. Anna Brzek, Tarja Dworrak, Markus Strauss, Fabian Sanchis-Gomar, Ibtissam Sabbah, Birgit Dworrak and Roman Leischik of Faculty of Public Health , Lebanese University, Saida, Lebanon (2017) in their study revealed that differences in the weight of school bags after one school year have influenced changes in body posture abnormalities, especially in rotation parameters. Rachhana S Pawaskar, Snehdeep S patil, Ruchika Patel, Puneet Kour Dhaliwal, Anjali V Wagh( 2018) found prevalence of musculoskeletal symptoms in students from English medium schools and Marathi medium schools was 77.4% and 36.9% respectively.

Various international Medical Associations have recommended that the students should not carry more than 10-15% of their total body weight. Auburn University had conducted a study on this problem and they found the average bag weight was 17% of the student's total body weight, Among these children, 67.2% had muscle soreness, 50.8% had back pain, 24.5% had numbness and 14.7% had shoulder pain. The female students face higher pain problems due to their height and thin body structure. Dr. Zubeir Patel, an Indian Physiotherapist, recommended that a student should carry maximum 10% of his/her total body weight including lunch box and water bottle. If a child carry an excessive loaded back pack which is much heavy for his/her body, then it leads to different musculoskeletal problems like forwarded head posture, lower body pain, back pain, neck pain and shoulder pain. Because most of the children have to bend over backward due to the weight of their bags.

### **Objectives**

The objective of this study are-

- a. To assess the schoolbag weight of the children between 10-12 years in the schools of Nagaon town area.

- b. To find out the physical health problems faced by the children due to heavy schoolbag.

### **Delimitation of the study**

The study was delimited to only the primary school children studying in Class- V to Class VII or the age group 10 to 12 years only. Geographical area of the study is also confined only in the Nagaon Town area which only 120 km far from Dispur the capital of Assam.

### **Methodology, Procedure and Tools of data collection**

The study was conducted under the Descriptive survey method. Data for the study was collected under three procedures.

- (1) The researcher collected the data of school bag weight and body weight of the students with the help of a weighing machine. The researcher visited either in children's home or at the place where children's wait for their school bus at the time of their departure. Then the measurement of school bag and his body weight was taken.
- (2) For the collection of information about their health or physical problem, an interview schedule was prepared for the parents.
- (3) After taking the information, a medical check-up was done on only a limited number of children selected randomly with the help of a Physician.

### **Population and Sample**

The population for this study consists of all the primary school students of Nagaon town area in the age group 10 to 12 years. Both public and private primary students from class 5-7 were taken. Sample for the present study was collected through convenient sampling technique. Here, sample was selected by the discretion of the researcher and no theoretical basis is taken into consideration. The researcher choose the sample only where he can get his required data to serve his study. Students from class v-vii were taken as sample. Total 120

students were studied with equal numbers from public and private schools of Nagaon town area. Both male and female students were taken under the study. As such out of total 120 samples of children, 60 were from government schools and 60 from private schools. Again equal number boys and girls children's were taken for the study. Again the parents (either mother or father or guardian) of all the children were also taken as sample to study the health problem of their children.

### Findings and Discussion

The first objective of this study was to assess the schoolbag weight of the children between 10-12 years in the schools of Nagaon town area. Through the self structured interview schedule the researcher collected the data of child's bag weight and body weight at their school time. Age wise average bag weight and body weight of the students were measured with the help of a weighing machine which is presented in the Table No-2. Before presenting the obtained data the standard norm set by the Ministry of Human Resource Development, Government of India in 2019 is presented in the following Table no-1

**Table1 : Standard MHRD norms of School Bag ( 2019)**

Class I &II	1.5kg
Class III& V	2-3kg
Class VI to VII	4kg
Class VIII&IX	4.5kg
Class X	5kg

**Table-2 Measurement of Body weight and School Bag of the Children**

class	Years	Body weight without bag (average)	Bag weight (average)	%of bag weight of total body weight of the student(average)

V	10 years	32.21 kg	5.06kg	15.7%
VI	11years	34kg	6.4kg	18.8%
VII	12years	36.1kg	6.9kg	19.1%

From the above table It is seen that a children of class V or 10 years of age with average body weight of 32.21 kg have to carry school bag of 5.06, similarly a student of class VI of 11 years of age with average body weight of 34 kg carry 6.4 kg weight school bag and a children of class VII or 12 years of age with average body weight of 36 kg have to carry 6.9 kg weight school bag. But actual finding from our field survey indicate that all the children carry heavy weight school bag which is against the MHRD norms. In this study, no students are found that are following the weight limit. At every class, they are crossing the limit. The MHRD norms has not turned into complete reality. So the school authority and parents should be very conscious regarding the weight of the bags.

Various medical association has prescribed that the schoolbag weight should be 10-15% of their body weight. But here we see in every class the weight has crossed the prescribed norm. In class V, we found from our survey that a child is carrying a bag which is 15.7% of their total body weight. In class VI, a child is carrying a schoolbag which is 18.8%% of his total body weight. In class vii, a child is carrying a schoolbag 19.1% of their total body weight. Though it lies in border line at the class V, but in class VI and VII the bag weight is crossing the limit of the MHRD norms as well as the norms suggested by many experts in the field.

The second objective of this study was to find out the physical health problems due to heavy weight schoolbag. For this objective, the researcher collected the information about the physical problems of children from the parents of all the 120 children. The gathered information is presented in following table.

**Table no 3 : Health problems faced by the Children**

Health problems	Frequency	Percentage
Shoulder pain	29	24.2%
Shoulder and upper	51	42.5%

back pain		
Upper back pain	22	18.33%
Lower back pain	24	20%
Leg pain	60	50%
Muscle pain	46	38.3%
Spinal injury	0	0
Tiredness	114	95%

120 students were taken as sample in this study. Every student is facing various problems due to the heavy weight school bag they carry regularly to school. Among them 29 numbers (24.2%) of students as reported by their parents that they are suffering from shoulder pain. It mostly felt by them after returning back from school to home. 51 numbers of students (42.5%) are suffering from shoulder and upper back pain. 22 numbers (18.33%) of students have only upper back pain. 24 numbers of students (20%) have lower back pain. 60 numbers of students (50%) have leg pain. While they have to walk by lifting the bag, the pain grows. 46 numbers of students (38.3%) have muscle problem, 114 numbers of students (95%) complained that they are suffering from tiredness (parents perceive). This is the most considerable problem among the students due to the carriage of heavy weight schoolbag. Thus the data indicates that 95 percent of the children under the study are suffering from health related problems more or less.

This study shows that the duration of daily carriage is associated with the physical discomfort of the students. Due to the fashion, some students carry the bags in one shoulder sometimes as observed by the investigators. That is very harmful to their body as they carry the heavy load on one shoulder.

#### **Medical check-up by the Physician :**

For a scientific investigation that the students are suffering from any physical problem due to the carry of heavy loaded bags on their back, a medical checkup was done on 10 number of students which were selected randomly. The result of the Physician's report on the 10 children carrying heavy weight school bag is presented in the Table-4.

**Table-4 Report of the doctor's check-up**

Sl.No	Age	Course	Type of Physical problems
1	10 years	CBSE	Shoulder pain
2	11 years	CBSE	Back pain
3	12 years	SEBA	Neck pain
4	11 years	SEBA	Back pain
5	11 years	SEBA	Leg pain, back pain
6	10 years	CBSE	Neck pain
7	12 years	SEBA	Back pain, muscle pain
8	11 years	CBSE	Shoulder pain
9	10 years	SEBA	Tiredness, leg pain
10	11 years	CBSE	Tiredness

It is also reported by the Doctor that the physical problems faced by all these 10 children are due carrying heavy weight. Our study also proved that all the children are carrying heavy weight school bag than the prescribed norms consequently facing physical health problem.

### Major findings

The major findings of the study are as follows-

1. As per findings of the study the children of age group 10 to 12 years in Nagaon Town are not following the M HRD norms regarding heavy weight school bag and all the children used to carry heavy weight school bag in comparison of their body weight.
2. Among the total 120 students 24.2% has been suffering from shoulder pain. Some student sometimes carries the bag on one shoulder due to trend fashion or something else. This one shoulder carriage hits the shoulder pain most.
3. 42.5% students are suffering from shoulder and upper back pain. Improper carrying method is mainly responsible for this problem. The bag should be fitted tightly on the back but many students make the strap loose so that sometimes it touches the knee level. It's a wrong method.
4. Almost 20% students are suffering from upper and lower back pain. As they carry an excess weight on their back, the center point of the backbone is pressed and the spine gets pressed. So this pain grows.



5. 50% of the total students have leg pain due to the carriage of heavy load on their back. This heavy load changes the posture of the students. They have to bend in forward direction to maintain the balance.
6. 38.3% of the total students have muscle pain for the carrying of heavy loaded bags.
7. The most serious problem is tiredness. All most all students have this problem. Sometimes they get afraid by the name of school as they feel the bags are so heavy for them. 95% students complained that they easily get tired after school.

### **Recommendations:**

From the results of the present study, the recommendations are as follows:

1. Parents should take care so that the school bag weight is always less than 10% of the total body weight of the child.
2. The parents and teachers should be always aware about their carrying technique of bags.
3. The stuff of the backpacks should be always checked.
4. Make sure that the child can understand the harm of carrying the heavy bags on one shoulder.
5. Regularly the bags should be cleaned out so that the child cant keep any unnecessary things in his bag.
6. Regularly ask the children if they feel any discomfortness by carrying the heavy bags.
7. Take them to the doctors if they feel any problem.
8. Always purchase a well designed back packs with light weight.
9. School authority must strictly maintain the norms of school bag and also regularly monitor the bag weight of the children.

### **CONCLUSION:**

The findings of the study provide additional information about the school bag weight and its effect on physical health of the students. The results indicated that the prevalence of physical problems among the school going students was very high. The results have revealed that most of the children are carrying heavy bags, which is more than 10-15% of their total body weight, which is considered as excess weight for their body. This excess weight leads to the shoulder and back pain and various musculoskeletal problem of the students. In childhood the children should be kept free from the outer force and adult choice

activities. Out of total 120 students from class v, a student is carrying a bag which is 15.7% of their average body weight, in class vi- the bag weight is 18.8% of their total body weight and in class vii the bag weight is 19.1% of their total body weight. This excess weight leads to the shoulder and back pain of the students. Here we see that maximum students carry a bag which is more than 10% of their total body weight. This excess weight has lead the students to various physical problems like muscle pain, shoulder pain, neck pain, back pain,leg pain etc. For this problem the awareness of school and parents is also responsible. Though many circular has been released to limit the bag weight, but it remained only in papers. It is still far away to turn in reality.

### **REFERENCES:**

- Ashworth M. 1985 Beyond Methodology, Cambridge University.
- Ansari, M.S, 2012, Popular Master Guide UGC NET /SLET, Ramesh Publishing House, New Delhi.
- Azlin Nor M.N.,Asfarina Z and L Wan Chee, 2010- Schoolbag Weight,Its Content and Incidence of Backpain in Different Medium Primary Schools in Kuala Lumpur,.
- EbtasamMo'awad El-Sayed Ebied 2015 Impact of School Bag Use Instructional Guidelines on Primary School Children's Awareness and Pain Intensity.
- Hadeel Fadhil Farhood ,2015, Low Backpain In School Children: the role of school bag weight and carrying way.
- Hamish William Mackie,2006 Schoolbag Carriage: design ,adjustment, carriage duration and weight. Massey University, New Zealand.
- Ibrahim Amal H., 2012, Incidence of Backpain in Egyptian School Girls: Effect of Schoolbag Weight and Carrying way.
- Kothari C. R., Research Methodology Methods and Techniques by Wiswaprakashan, New Delhi.
- Kumar, 2008 Research Methodology published by Laxmi Narayan Agarwal,Agra.
- Koul L 2013, Methodology of Educational Researc, third revised edition by Bikash Publishing house Pvt. Ltd.
- Mangal S.K. 2006, Advanced Educational Psychology, Prentice Hall of India, New Delhi Nathan Santosh, 2015, School bag Investigation, Marryatville Governing Council.
- Oberoi S.C. ,2004 Educational Technology, NewDelhi,arya Book Depot.
- Ojha S. Seema ,2015 Burden Of The School Bag: Is Anybody Listening?