

Effectiveness of Government Guidelines in Reducing Bag Weight in Delhi/NCR Schools

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Abstract- It is very common to see school-going students carry heavy backpacks to school every day. This has been a known issue in most parts of the world. Regularly carrying such heavy bags can lead to various physical and mental problems like neck and back pain, fatigue, muscular discomfort and stress among the students, which can further affect their physical development in the future and may also cause and lead to poor academic performances. Governments often implement guidelines to reduce bag weight for students to solve this issue. This research paper studies the effectiveness and awareness of government guidelines in solving the problem of heavy school bags among students in Delhi/NCR schools. Quantitative and Qualitative data collected from the survey helps evaluate how students feel about carrying heavy bags, the extent to which these guidelines have been implemented and whether they have led to reducing bag weights. The survey also tells us how aware students are regarding these guidelines. Further suggestions from students have been collected which tell us how relevant this problem is and what they feel can be done to tackle this problem.

Keywords—Heavy bags, government guidelines, implementation, physical health

I. INTRODUCTION

Heavy school bags create a huge concern for school students impacting their physical health, psychological well-being, and academic performance. The prolonged carrying of heavy school bags can lead to musculoskeletal discomfort, pain, fatigue, and stress among students. Moreover, the lack of storage facilities in schools increases the problem, as students are often left with no choice but to carry heavy loads throughout the day.

“The posture of the body also gets affected to a great extent which in the long term develops imbalances in the body and affects the health of the nervous system”.(India Today, 2019)

About 23% reported Lower Back Pain, 41.2% reported Shoulder Pain and 38.6% reported Neck Pain. (Ghazala Usman, 2014).

If these problems are overlooked, they are bound to cause a huge problem in both the physical and psychological growth and well-being of students in the future. Understanding the detrimental effects of heavy backpacks on students, educationalists and policymakers have made solutions to try to solve this problem. Governments have introduced guidelines to reduce bag weight, aiming to reduce this burden.

In 2020, the Ministry of Education announced a significant change to the school bag policy. Based on research conducted by the National Council of Educational Research and Training, the Ministry declared that a student's school bag should not weigh more than 10% of their body weight. This new policy was shared with state governments in November 2020.

The Directorate of Education circular directives were:

1. Teachers should inform students in advance about the books and notebooks they need to bring to school each day.
2. To help reduce the weight of school bags, the school management should provide clean drinking water so that students do not need to bring water bottles from home.
3. Teachers should check the weight of students' school bags every three months on a designated day, and if any bags are found to be too heavy, this should be communicated to the parents.
4. Schools should include teaching of correct bag-carrying methods in the health education classes.

As part of its guidelines, the New Education Policy is focused on reducing the weight of school bags. It recommends measures such as promoting digital learning materials, revising the curriculum to minimize unnecessary content, and implementing

locker systems or storage facilities in schools. Some of the guidelines provided are as follows:

1. from Class I to X, the schoolbags should not weigh more than 10% of the total body weight of the students.
2. Pre-primary students should not carry bags to school.
3. Until class II, the policy recommends that teachers not give homework to the students.
4. For children studying in classes III to V, the homework limit should be two hours per week.
5. For classes VI to VIII, the homework limit should be one hour per day. Similarly, classes IX and above should be two hours per day.
6. Schools should undergo infrastructural changes like lockers as students won't be able to carry several books daily.
7. Thin or light ones should replace heavy or thick books.

There exists a lack of awareness among both students and teachers regarding this problem which furthermore hinders the implementation and effective of these policies and guidelines.

“Only 31.8 % of the school teachers knew that the ideal proportion of back packs, 56.4 % knew that the heavy bag packs can cause headache, neck pain and leg pain, 49.2 % knew that it causes shoulder pain and 43.6% knew that it causes back pain in students” (Bruce,Praythiesh,2024)

This paper aims to investigate the awareness of associated problems with heavy bags, guidelines and the physical and psychological effects of carrying heavy bags, and the availability of storage facilities in schools along with their suggestions to solve this problem.

- A. Aim- to assess the effectiveness of government interventions in reducing bag weights for school students. To also understand the level of implementation of these guidelines in schools and study the awareness of students about the existence of these guidelines and the risks associated with heavy school bags.
- B. Objectives-
1. To assess the current bag usage patterns and storage options available for students.
 2. To study existing interventions and guidelines proposed by the government.

3. To study the impact of interventions and their effectiveness among students.
4. To understand the level of awareness among students with regard to the guidelines
5. To understand how students feel carrying such heavy bags to school everyday.

II. LITERATURE REVIEW

The issue of heavy school bags and their impact on students' well-being has gained a lot of attention from researchers, policymakers, educators, and healthcare professionals all around the world. In Delhi/NCR, where educational standards and academic pressure are high, this concern is of immense importance.

Numerous studies have studied the prevalence of heavy school bags among students, highlighting the adverse consequences on their physical health, including musculoskeletal discomfort, back pain, and posture-related issues (Humaira Khan¹, 2021)

Neck and Back Pain in Students is closely related to the school bags that they carry. There are a large number of literatures in terms of postural and physical changes due to school bags in adolescents and problems faced by young adults.(Shivani Mandrekar ,2019)

Several government initiatives have been implemented to address the problem of heavy school bags. The Delhi government issued guidelines in 2016 recommending weight limits for school bags and promoting measures such as timetable adjustments, digital learning resources, and locker facilities to reduce the burden (The Times of India, 2016)(Testbook, 2023). Policies as the New Education Policy (2016) and the School Bag Policy of 2020 provide certain guidelines to be followed by schools to reduce the problem of heavy school bags among students.

Impact of Educational Intervention in Reducing the Weight of School Bags in Selected School Children (Meenakshi, 2023) evaluates the effectiveness of an educational program aimed at reducing the weight of school bags among students.

Each of the articles above and many more add to the better understanding of the problems faced by students both physically and mentally. They also study the various government guidelines and other educational programs that provide a possible solution to this problem. By combining the existing literature and some more key areas for intervention, these papers and

articles provide valuable insights for policymakers, educationists, healthcare professionals, and researchers to help provide better solutions and support the well-being of students who are the

III. RESEARCH GAP

Despite there being a lot of attention to the issue of the problems caused by the regular use of heavy school bags and the government's efforts to address this problem. Most of the papers focus on the physical or psychological impacts due to heavy bags. There still remain a few areas which need further research.

1. Firstly understanding the level of implementation and effectiveness of these guidelines. Limited research has gone into finding whether these government guidelines are being followed in Delhi/NCR schools or not.
2. Understanding factors such as infrastructural constraints, and institutional resistance, such as storage facilities for students like lockers, desks etc that are crucial for the implementation process.
3. There has also not been enough research done to understand the level of awareness of students regarding various risks due to heavy school bags and the awareness regarding existence of guidelines.

Minimal research has been done on the challenges, infrastructural limitations, technological solutions to reduce bag weights, parents and teachers perspectives on this which can provide valuable insights into the issue. Addressing these gaps in the future can prove to be extremely helpful for promoting students' well-being and academic success.

IV. RESEARCH QUESTIONS

1. What are the current bag usage habits and how have they changed?
2. What are the already existing guidelines in Indian Schools by the Government?
3. How do these benefit students and are they useful or just another document?
4. What is the level of awareness among students regarding these guidelines?

V. RESEARCH HYPOTHESIS

1. The implementation of government guidelines aimed at reducing bag weight will lead to a significant decrease in the bag weight carried by students in Delhi/NCR schools
2. Educational interventions focused on the health risks of heavy school bags will significantly increase awareness among students, leading to lighter school bags
3. Despite the presence of policies aimed at reducing the weight of school bags, a gap between policy formulation and effective enforcement exists

VI. RESEARCH METHODOLOGY

The study was conducted among Delhi/NCR school students between the ages of 7 to 18 years. Quantitative and Qualitative methods were used to understand the problem of heavy bags and the Effectiveness of government guidelines in reducing bag weight in Delhi/NCR schools. A survey questionnaire was used to collect the data of 57 school students and this data was further used in the research. Both Quantitative and Qualitative methods were used to get a deep understanding of the level of awareness and the effectiveness of the government guidelines in reducing bag weights.

VII. DATA ANALYSIS

1. Frequency of Carrying Backpacks to School:

All of the 57 respondents carry backpacks daily to school. This indicates that there are 100% of students are carrying backpacks to school. This suggests a common habit among students to use backpacks for taking their belongings to school daily.

Class	Heavy	Some what	Very	No	Grand Total
3 to 5	5%	2%	5%	0%	12%
6 to 8	9%	4%	2%	0%	14%
9 to 12	28%	25%	19%	2%	74%
Grand Total	42%	30%	26%	2%	100%

2. Does your bag pack create more weight on your shoulders?

Class	1	2	3	4	5	Grand Total
3 to 5	0%	0%	4%	5%	4%	12%
6 to 8	0%	2%	4%	7%	2%	14%
9 to 12	4%	12%	23%	25%	11%	74%
Grand Total	4%	14%	30%	37%	16%	100%

Based on this table:

The majority of students perceive their backpacks as HEAVY. 30% students also consider their backpacks to be SOMEWHAT HEAVY. Only a small fraction of students, approximately 2%, said their backpacks were not heavy.

This provides insights into how students perceive the weight of their backpacks, highlighting the prevalence of heavy and somewhat heavy bags, which may have implications for their physical well-being.

3. How many books do you carry to school every day? It is seen that a majority of students carrying more than 5 books to school daily. The number is especially large in the class 9-12 division (33%). Which could contribute to physical strain and fatigue. Schools should consider strategies to reduce this burden, such as providing digital resources or implementing storage facilities.

Class	Never	Rarely	Regularly	Sometimes	Grand Total
3 to 5	9%	0%	0%	4%	12%
6 to 8	4%	5%	2%	4%	14%
9 to 12	65%	5%	0%	4%	74%
Grand Total	77%	11%	2%	11%	100%

4. Are you aware of the various problems that can occur due to regular usage of heavy bags? This analysis shows students' awareness level regarding the possible issues associated with carrying heavy bags regularly. It suggests that a significant portion of students (67%) are aware of these problems, whereas the others who are still not aware may benefit from being educated about this topic for their well-being.

Class	Yes	No	Grand Total
3 to 5	7%	5%	12%
6 to 8	9%	5%	14%
9 to 12	51%	23%	74%
Grand Total	67%	33%	100%

5. Do you feel any physical pain or stress due to this? On a scale of 1-5 how would you rate this pain (1 being lowest and 5 highest)

Class	Yes	No	Grand Total
3 to 5	12%	0%	12%
6 to 8	14%	0%	14%
9 to 12	53%	21%	74%
Grand Total	79%	21%	100%

Do you feel any physical pain or stress due to this?

79% of students reported feeling physical pain or stress due to heavy bags. The students have mostly rated their fatigue/stress level at level 4 on a scale of 1-5 which tells us that a significant number of students experience physical discomfort or stress due to heavy bags, it is of great concern as it leads to various physical problems such as muscle pains, injuries, and even posture problems if not corrected at the right time.

On a scale of 1-5 how would you rate this pain

Class	1	2	3	4	5	More than 5	Grand Total
3 to 5	0%	0%	0%	0%	5%	7%	12%
6 to 8	0%	0%	2%	4%	5%	4%	14%
9 to 12	2%	5%	9%	16%	9%	33%	74%
Grand Total	2%	5%	11%	19%	19%	44%	100%

6. Does your school provide you with locker systems or storage areas in the premises? Most respondents say that their school does not offer locker systems or storage areas. It tells us that schools rarely provide access to locker systems/storage areas on the premises, which leads to the of carrying heavy bags regularly since they have no option but to carry

Class	Yes	No	Grand Total
3 to 5	5%	7%	12%
6 to 8	0%	14%	14%
9 to 12	12%	61%	74%
Grand Total	18%	82%	100%

all books daily.

7. Does your school carry regular bag weight checks? From this data, it can be seen that the majority of students (77%) indicated that their school either never or rarely carry out regular bag weight checks. Therefore, it appears that bag weight checks are not a common practice in schools which should not be the case if to solve this problem.

Class	Yes	No	Grand Total
3 to 5	2%	11%	12%
6 to 8	2%	12%	14%
9 to 12	12%	61%	74%
Grand Total	16%	84%	100%

Are you aware that The Ministry of Education has issued guidelines regarding heavy bags?

8. Are you aware that The Ministry of Education in accordance to the new National Education Policy (NEP) have issued guidelines regarding heavy bags? Are these guidelines being followed in your school?

Class	Yes	No	Grand Total
3 to 5	2%	11%	12%
6 to 8	2%	12%	14%
9 to 12	4%	70%	74%
Grand Total	7%	93%	100%

Are these guidelines being followed in your school?

The data collected suggests that there is a lack of awareness among students regarding the guidelines on heavy bags. The lack of awareness also leads to challenges during implementation since students do not know the benefits. Additionally, there appears to be limited implementation of these guidelines in schools. This highlights a huge gap between policy existence and enforcement.

Class	Yes	No	Grand Total
3 to 5	0%	12%	12%
6 to 8	2%	12%	14%
9 to 12	4%	70%	74%
Grand Total	5%	95%	100%

Are you aware of the correct bag lifting and carrying

9. Are you aware of the correct bag lifting and carrying techniques. Has your school included correct lifting and carrying techniques as part of their health education programs?

Has your school included correct lifting and carrying techniques as part of their health education

This shows firstly there is a lack of awareness among students regarding correct bag lifting and carrying techniques. Additionally, only limited schools teach the correct methods of carrying bags in the health education plans. Lack of such knowledge can aggravate injuries, pains and even hinder physical development in students.

10. Do you feel your school has taken any steps to help reduce heavy bags?

Class	Yes	No	Grand Total
3 to 5	0%	12%	12%
6 to 8	4%	11%	14%

Class	Yes	No	Grand Total
9 to 12	14%	60%	74%
Grand Total	18%	82%	100%

A very low number of students feel their school has taken some steps to help reduce heavy bags. This tells us that although their school has taken steps to reduce heavy bags, there is still room for improvement.

11. Does your school timetable include a good curricular and co-curricular activity periods distribution?

Class	Yes	No	Grand Total
3 to 5	0%	12%	12%
6 to 8	11%	4%	14%
9 to 12	42%	32%	74%
Grand Total	53%	47%	100%

Approximately 53% of respondents feel that their school has a good distribution, while around 47% do not feel the same. These numbers suggest differences in opinions among the students regarding the effectiveness of the current scheduling of classes. Gathering feedback from students can provide a good method of enhancing and changing the scheduling structure.

Class	Yes	No	Grand Total
3 to 5	0%	12%	12%
6 to 8	4%	11%	14%
9 to 12	0%	74%	74%
Grand Total	4%	96%	100%

12. Do you feel any changes can be made in the curriculum to reduce heavy bag weights and what all can be done?

- The students suggest several potential changes to the curriculum that could help reduce heavy bag weights:
- Minimize the use of heavy books on a daily basis.
- Implement locker systems or desks with storage space.
- Space out timetables
- Coordinate homework assignments among teachers to balance the number of books carried by students.
- Reduce the number of books required.
- Introduce digital learning materials and classes to reduce reliance on physical books.
- Adjust timetables to have subjects on alternate days to reduce the number of books carried daily.
- Conduct regular checks for bag weights to ensure they are not excessively heavy.
- Notify students about which books to carry.

11. Implement a system where books are deposited at school and given to students on weekends for revision.

These suggestions focus on using technology, adjusting timetables, and providing adequate storage solutions to alleviate the burden of heavy bags on students.

VIII.CONCLUSION

By reflecting on the findings of this research, this paper directs our attention firstly on the lack of awareness of students towards the various guidelines that have been issued for their benefit and secondly on the inadequate implementation of government regulations by schools concerning the issue of heavy school bags. The study finds that even with the existence of these guidelines there is a huge gap between guideline existence and guideline implementation. There is a need for regular checks to keep the implementation of the guidelines in schools on track. The study also found that students across various age groups experience physical pain, stress, and fatigue due to the weight of their bags. Some solutions provided by the respondents, such as locker systems, digitization, spacing out timetables etc, tell us that there is a need to bring about a change and that it is time to take an extra step for the physical and mental well-being of students.

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X.APPENDIX – 1

Survey on "Effectiveness of government guidelines on reducing bag weight in Delhi/NCR schools"

B I U ↺ ↻

Hello! I am Shravya Verma, a first year postgraduate student at Pearl Academy, Delhi, studying Interaction Design (Ui/Ux). I'm conducting a research survey on the "Effectiveness of government guidelines on reducing bag weight in Delhi/NCR schools". I'd greatly appreciate your participation in this survey. I assure you the responses will remain anonymous and are for academic purposes only. Thankyou for your time!

Age *

Short-answer text

Class *

Short-answer text

Do you carry backpacks to school on daily basis? *

yes

no

Does your bag pack create more weight on your shoulders? *

Very heavy

Heavy

Somewhat heavy

Not at all heavy

What all material do you carry in your bag pack? *

Books

Notebooks

Art Supplies

Reference Books

Water Bottle

Tiffin

Stationery items

How many books do you carry to school everyday? *

1. 1
2. 2
3. 3
4. 4
5. 5
6. more than 5

Are you aware of the various problems that can occur due to regular usage of heavy bags? *

Yes

No

Do you feel any physical pain or stress due to heavy bags? *

yes

No

On a scale of 1-5 how would you rate your fatigue/ stress? *

low 1 2 3 4 5 high

Does your school provide you with locker systems, or storage areas in the premises? *

Yes

No

What storage facility is available in your school? *

Lockers

Desks with storage

Cupboards

Shelves

None

Does your school carry out regular bag weight checks? *

Regularly

Sometimes

Rarely

Never

Are you aware that The Ministry of Education in accordance to the [new National Education Policy](#) (NEP) have issued guidelines regarding heavy bags? *

yes

no

If yes, what do you know about it?

Long-answer text

Are any of these guidelines being followed in your school? *

Yes

No

Are you aware of correct bag lifting and carrying techniques? *

Yes

No

Has your school included correct backpack lifting and carrying techniques as part of their health education programmes? *

Yes

No

Do you feel your school has taken any steps in helping reduce heavy bags? *

Yes

No

Does your school timetable include a good curricular and co-curricular activity periods distribution? *

Yes

No

Do you feel any changes can be made in the curriculum to reduce heavy bag weights and what all can be done? *

Short-answer text