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Fitting problems in school uniforms of 8-9 years boys and girls: An exploratory study

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Abstract
School uniforms are one of the most integral parts of a student's life. Every school has its uniform that differentiates students of one school from the other. School uniforms hold great importance and various studies speak volumes about their utility and importance in various manners. The present study titled "Fitting problems in school uniforms of 8-9 years boys and girls: An exploratory study", was undertaken to obtain the experiences of mothers of 8-9 years old boys and girls regarding the fitting of school uniforms, compare school uniforms of the same size labels sold by different retailers and find the variations in measurements, if any, and recommend the possible ways to resolve the fitting problems in school uniforms.

The school uniforms have been measured and feedback from the mothers was analyzed and it can be observed that there is no standardization in the sizes. A particular size varies from retailer to retailer and these variations lead to fitting problems that are faced by the students. Various recommendations have been suggested to the retailers to solve these issues without getting the size changed of the school uniforms as it is not affordable for many people to buy school uniforms frequently because of their high cost.

Keywords: Fitting, school uniforms, garment dimension, fabric, size, textiles, lady Irwin college

Introduction

School uniforms are one of the most integral parts of a student's life. Every school has its uniform that differentiates students of one school from the other. School uniforms hold great importance and various studies speak volumes about their utility and importance in various manners. It can induce learning by reducing distraction, shifting the focus on academics making the classroom more serious allowing students to perform better academically, and eliminating discrimination based on socio-economic status (Joseph and Nathan, 1986) [7].

According to a study "Dressed for Success? The Effect of School Uniforms on Student Achievement and Behaviour", school uniforms promote students' loyalty and reduce their tendency to be violent (Gentile, 2012) [11]. Without school uniforms, students may form gangs and identify their group with the same colour clothes. Wearing of school uniform is important as it gives the feeling that they belong to one community. It meant to bring equality to the students regardless of their parents' wealth.

Typical school hours include various indoor as well as outdoor activities such as writing, reading, drawing/painting, jumping, running and involvement in various sports. Activities undertaken during these important play breaks are discretionary and children best accumulate activity when they can interact with peers in an outdoor setting. Most of the day hours are spent in school by the student. So, the school uniform should be comfortable and should allow free body movement. There should be fewer restrictions on body movement as students are highly involved in physical activities (Bansal, 2018) [1]. School uniforms are generally sold in the market according to certain sizes for different age groups by retailers who either have their construction unit or get it stitched on order. Fitting is the main aspect that is kept in mind by the customers (parents) while purchasing school uniforms. However, there is no standard size chart followed by the manufacturers. These manufacturers have their own size chart.

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Size refers to the label sizes used for garments sold off-the-shelf. There are a large number of standard sizing systems around the world for various garments, such as dresses, tops, skirts, and trousers. India do not have their size chart so it depend on manufacturer to follow their own measurements for specific sizes that vary from one manufacturer to another as it can be concluded from the present study

The advantage of sizing is only intended as a fitting guide and not as an indicator of ideal proportions. When sewing, it is common for people to straddle two or even three different dress sizes. Various fitting problems hinder the body movements of the wearer like creases around the shoulders, the opening of the button in front, the length of the sleeve, etc.

Methodology
The present study was conducted in three phases. The locale of the study was Delhi-NCR.

Phase A- Feedback from mothers regarding fit issues: In this phase, a sample of 50 mothers of selected age group children (8-9 years) were taken through convenient sampling and interviewed regarding the fitting and other problems they faced in their children's school uniforms. Permission was taken to interview mothers during the parent-teacher meeting. The tools used for data collection were interviews and questionnaires.

The locale of the study selected was in Delhi NCR. The consent form was duly signed by the respondents as well as the school authority for conducting the study on their premises.

Measurements of students were taken at their respective houses for comparison with the sizes of uniforms sold by different retailers.

Phase B- Comparison of sizes of School uniforms sold by different retailers: School uniforms of the size that are mainly worn by 8-9 age groups were selected. The sizes selected were 28, 30, and 32 as these were found to be bought for children of age 8-9 years. So anthropometric measurements including height and weights were taken of the student in order to standardize the size used for selected age group. Size 28 was the most bought size for this age group.

Ten retailers of school uniforms were selected from different zones of Delhi-NCR. The uniforms selected were shirt, skirt and trousers. Components of school uniforms that were studied for their measurements were:
1. Full sleeves shirt with collar
2. Trousers
3. Skirt

Following measurements of all the uniforms of different sizes (28, 30, 32) and from different retailers were taken:
- **Full sleeves shirt:** Across Shoulder, Across Chest, Round Chest, Armhole, Sleeve Length, Sleeve Width, Shirt's Length, Cuff Circumference, Hem Circumference.

- **Trousers:** Length (waist to hem), Waist, Crotch, Knee Circumference, Hem Circumference.
- **Skirt:** Waist, Skirt's length.

Phase C- Recommendations regarding fit and other issues in school uniforms: Based on the findings, various recommendations were suggested for better customer satisfaction concerning school uniforms. The changes were suggested that should be incorporated into the existing school uniforms.

Results and discussion
The present study titled "Fitting problems in school uniforms of girls and boys (8-9 years): An exploratory study" was an attempt to understand the issues related to fitting, sizing, fabric, and workmanship in school uniforms for boys and girls of 8-9 years. Feedback from mothers regarding the fitting, fabric colour, and workmanship of school uniforms was obtained. In addition to this, the school uniforms of the same size labels sold by different retailers were compared to find the variations in measurements, if any. Finally, changes desired in the school uniforms and the recommendation regarding the possible ways to resolve the fitting problems were suggested. The study was conducted on the children of class III and the parents of these children from Delhi NCR. A separate questionnaire was prepared for collecting data regarding school uniforms and their fit problems from the retailers. The results of the study are discussed below:

A1. Feedback from mothers regarding the school uniforms is summarized as follows
When mothers were asked about the factors considered by them while purchasing school uniforms the following factors were listed by them. The highest preferred factor was given the highest score, If any mother prefers cost over all other three factors then the scoring of cost is 4.

50 mothers preferred cost as the most influencing factor so cost was given the highest score of 4. Therefore, Cost=4* 50= 200. As it can be concluded that cost was the factor that was considered most while purchasing school uniforms.

37 mothers preferred fitting as the second most influencing factor so fitting was given the second highest score of 3 and the rest 13 mothers who preferred fitting as the third highest factor were given a score of 2. Therefore, Fitting= 3*37+2*13=137.

11 mothers preferred fabric as the second most influential factor two mothers preferred it as least influential and the rest 37 preferred it as the third most influential factor. Therefore, Fabric=11*3+2*1+37*2=109.

48 mothers considered comfort as the least influential factor and two mothers considered it as the second influencing factor. Therefore, Comfort=48*1+2*3=54.

It can be concluded that the cost was one of the common factors that were considered by all the fifty respondents as the cost-effectiveness of school uniforms is very important for the mothers.
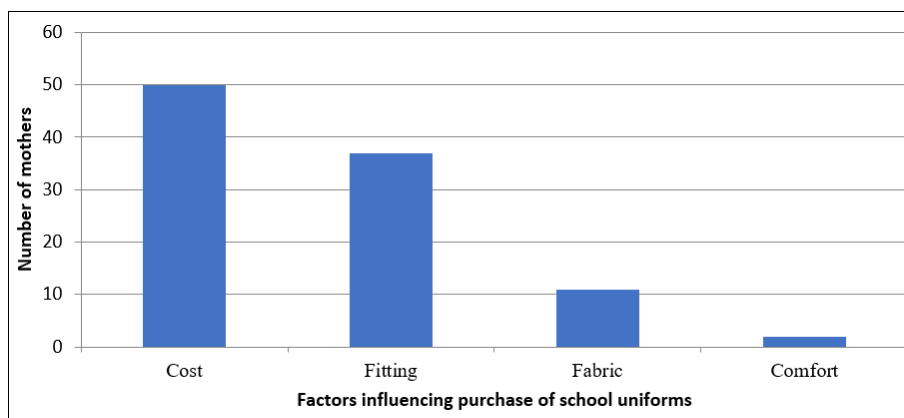
Fig 1: Factors influencing the purchase of school uniforms by mothers

A.2 Size of uniform purchased by mothers
Mothers were asked regarding the size that they purchased for their 8-9-years old son or daughter. Thirty-four respondents out of fifty purchased one size bigger school uniforms. According to mothers, as 8-9-year-old children are in the growing stage, hence their size requirement of the school uniforms changes very fast. That is why most of the mothers preferred to buy one size bigger of the school uniforms.

A.3 Place of purchase
School uniforms were mainly purchased from shops that are not recommended by the school as prices are comparatively low compared to the shops recommended by the schools.

A.4 Workmanship of school uniforms
Mothers' responses regarding issues related to fitting and workmanship of school uniforms, if any, have been discussed below:

Shirt and trousers
- Stitching of the school uniforms: Forty respondents were satisfied with the stitching of the school uniforms while ten were not. According to them, the stitch would get ripped at various places after a few washes.
- Buttons and zippers used: Thirty-three respondents were satisfied while the other seventeen complained about breaking off of the buttons after washing the school uniforms only after 2-3 washes.
- Thirty-three mothers were satisfied with the quality of zippers used whereas, seventeen were not happy. The zippers would not work smoothly or the lock would come out after a few uses. Thirty-eight were satisfied while twelve were complaining about ripping off of the pocket easily.

Skirts
In skirt mostly waist and its length has most of the fitting problems.
- **Waist:** Twenty one out of fifty respondents complained about looseness of the skirt's waist and five complained about tightness of the waist
- **Length:** Too long skirt creates problems while sitting as it get stuck near knees (ten out of fifty complained about skirt to be too long) and too short length leads to wardrobe malfunction (five complained about the skirt too short)

Blazer's
- **Fabric:** Forty-two respondents were satisfied with the

fabric used for the blazer while eight were not satisfied because they felt that the fabric used for the blazer was not warm enough to keep their children warm in winter.
- **Lining:** Forty-two respondents were satisfied with the lining used for the blazer while eight were not. They felt that the lining fabric should be warm enough to avoid the layering of the clothes in winter as it restricts the body movement of children.
- **Stitching:** Forty-five respondents were satisfied while five were not satisfied with the stitching as it easily gets ravelled especially that of the lining.
- **Creases and folds:** Forty-five respondents were not complaining while the other five were complaining about the folds.

A.5 Fitting issues in school uniforms
Fitting is an important factor affecting the satisfactory experience of a garment including the school uniforms. The fitting issues encountered in different components of school uniforms are as follows:

A.5.1 Trousers
- **Waist:** The waist of the trousers was found to be either loose or tight. Eleven out of fifty mothers complained about the waist being loose while eight out of fifty mothers found the waist to be tight.
- **Crotch:** Creases could be seen on areas near the crotch due to tightness or looseness of the crotch. This caused difficulty in sitting seven mothers complained about the loose crotch.
- **Thigh and knee girth:** Four out of fifty respondents complained about the looseness of the width of the trouser near the thigh and knee.

A.5.2 Shirts
- **Sleeve length:** Twenty-one out of fifty respondents faced the problem of sleeve length being too long while other components of the shirts fit well. Only one respondent complained about the short length of the sleeve.
- **Length of the shirt:** Fifteen out of fifty mothers complained about the length of the shirt being too long and one complained about the short length.
- **Chest:** It can be observed that ten out of fifty respondents complained about the looseness of the chest. A loose chest leads to bulkiness at the waist as more fabric needs to be tucked in the trousers which causes difficulty while doing work and tightness suffocates the wearer.
- **Shoulder:** Ten out of fifty respondents complained about the droopiness of the shoulder because of looseness and

two complained about the lines formed from shoulders towards armpits that may lead to torn armholes.

- **Armhole:** Five mothers reported the armholes to be too loose. Looseness of armholes sometimes becomes embarrassing for children as in half-sleeved shirts, the undergarment (vest) is easily visible through the loose armhole.
- **Sleeve width:** Five out of fifty respondents complained about the width of the sleeve to wide.

B. Comparing sizes of school uniforms of different retailers

In this part of the study, shirts, and trousers of sizes 28, 30, and 32 manufactured and sold by ten different retailers were compared. Anthropometric measurements including height and weight were taken of the student to standardize the size used for the selected age group (refer figure 1.2). The measurements of shirts and trousers of each size from ten retailers were taken and the variations in the measurements of the same size shirt were analyzed (refer figure 1.2). It was found that there is no standardization of sizes and measurements.

It was found that there are considerable variations in measurements of same-size uniforms from different vendors. There is no standardization of sizes and measurements.

Fig 2: Anthropometric measurements and comparing measurements of same size school uniforms of different retailers.

Shirt
Round chest
- **Size 28:** The shirt size is given by the measurement of a round chest. This means a shirt of size 28 should have a round chest measurement of 28 inches. When the round chest of ten different shirts was measured, variations were found. The round chest size varied from 26 inches to 30 inches. Out of 10 one shirt had a 26" round chest, and four had a 30" round chest. Only five shirts had 28" round chests.
- **Size 30:** The size 30 shirt had variations in many components a shirt of size 30 should have a round chest measurement of 30 inches. When the round chest of ten different shirts was measured, variations were found. The differences in the round chest i.e. 2" or 4" varied from retailer to retailer. Out of 10 retailers, one shirt had a 28" chest, four had a 32" round chest. Only five shirts had a 30" round chest.
- **Size 32:** The round chest size varied from 30 inches to 34 inches. Out of 10 one shirt had 30" of the chest, and four had a 34" round chest. Only five shirts had 32" round chests.

Across shoulders
- **Size 28:** Measurements of across shoulders' also varied from 12" to 13.5". Four shirts out of 10 had 13" across the shoulder while three others had 12", and two shirts had 13.5" across the shoulder. These variations in measurements lead to fitting problems faced by the students like drooping shoulders or lines forming from shoulders to armhole.
- **Size 30:** Measurements across the shoulder also varied from 12.5" to 14". Four shirts out of 10 had 13.5" across the shoulder while three others had 13", two shirts had 14" across the shoulder and one had 12.5". Across the shoulder should have proper fit as variations in measurements may lead to fitting problems faced by the students like drooping shoulders or lines forming from shoulder to armhole.
- **Size 32:** Across the shoulder measurements also varied from 13" to 14.5". Five shirts out of 10 had 14" across the shoulder while three others had 14.5", one shirt had 13" and one shirt had 13.5" across the shoulder.

Sleeve length and Sleeve width
- **Size 28:** As per the feedback of mothers, the maximum fitting problem faced by the children was the sleeve length being too long. The variations in the measurements of sleeve length were as follows: five shirts had 17", 3 shirts had 17.5", and two had 18" length. The sleeve width also varied with two shirts having 13.5", two having 13" and six shirts having 14" round sleeve measurement.
- **Size 30:** As per the feedback received from mothers, the maximum fitting problems faced by the children were the sleeve length being too long and it creates problems while writing or doing stuff because of its length it gets stuck. The variations in the measurements of sleeve length were as follows:
  Six shirts had 18" sleeve length, two shirts had 17.5", one shirt had 19" and one shirt had 18.5" length. The sleeve width also varied with three shirts with 15", 3 had 14.5" and four shirts having 14" round sleeve measurements.
- **Size 32:** As per the feedback of mothers, the maximum fitting problem faced by the children was the sleeve

length being too long. The variations in the measurements of sleeve length were as follows: five shirts had 19" sleeve length, four shirts had 18" and one shirt had 18.5" length. The sleeve width also varied with three shirts with 14.5", three had 15" and four shirts having14" round sleeve measurement.

Armhole depth
- **Size 28:** The armhole depth of the shirt also had variations of 0.5" and 1". Two shirts had a 6.5" armhole depth, three had 7", and five had a 6" armhole depth. The cuffs of the sleeve had a variation of 0.5", three shirts had 7" and seven shirts had 7.5". The cuff should fit comfortably around your wrist.
- **Size 30:** It was clearly observable that the armhole depth of the shirt and cuff of the sleeve had no variations. All the shirts had an armhole depth of 7" and all ten shirts had 8" cuff. The cuff should fit comfortably around your wrist.
- **Size 32:** The armhole depth of the shirt also had variations of 0.5". One shirt had a 7.5" armhole depth; nine had an 8" armhole depth.
  Cuffs of the sleeve The cuffs of the sleeve had a variation of 0.5", five shirts had 8.5" and five shirts had 9". The cuff should fit comfortably around your wrist.

Length of the shirt
- **Size 28:** The maximum variation can be seen in the length of the shirt. It varied from 19" to 21" with variations amongst different shirts.
- **Size 30:** The length of the shirt had maximum variation. It varied from 19.5" "to 21.5" with variations like two shirts had 21.5", four shirts had 20", three shirts had 21" and one shirt had 19.5" of shirts' length.
- **Size 32:** The maximum variation can be seen in the length of the shirt. It varied from 20.5" to 22" with variations amongst different shirts.

Hem Circumference
- **Size 28:** The hem circumference of the shirt varies from retailer to retailer; some share the same measurements while others share different ones. The difference in the hem circumference of the shirt mainly was 2". In most of the cases round hem was 2" bigger than the round chest. This means, that if the round chest was 28", the round hem was 30". However, in two shirts, the round hem measured the same as the round chest and in one shirt, the round hem was 2 inches smaller than the round chest.
- **Size 30:** The hem circumference of the shirt varies from retailer to retailer some share the same measurements while others share different measurements. The difference in the hem circumference of the shirt mainly was 2" and 4". In most of the cases round hem was 2" or 1" bigger than the round chest. This means, if the round chest was 28, the round hem was 30 or if the chest was 30 then the hem was 31. In five shirts hem was 2" bigger than the round chest, two shirts had 1" bigger hem than the round chest and three shirts same hem as the chest
- **Size 32:** The hem circumference of the shirt varies from retailer to retailer some share the same measurements while others share different ones. The difference in the hem circumference of the shirt mainly was 2" or 4". In most of the cases round hem was 2" bigger than the round chest. However, in seven shirts, the round hem measured the same as the round chest, and in 3 shirts, the round hem was 2 inches bigger than the round chest.

Trouser
Length of the trouser
- **Size 28:** No variation can be seen in the length of the trousers.
- **Size 30:** The length of the trousers had no variations. All the trousers had the length of 30"
- **Size 32:** No variation can be seen in the length of the trousers.

Waist
- **Size 28:** It can be observed that the Waist of the trousers had variations of 2". Out of 10 retailers two had 22" and eight retailers had 20" waist and elastic was not used in the waist of the trouser.
- **Size 30:** It can be observed that the Waist of the trousers had variations of 2". Out of 10 trousers two had 24" and eight retailers had 22" waist
- **Size 32:** It can be observed that the Waist of the trousers had variations of 2". Out of 10 trousers two had 26" and eight retailers had 24" waist and no elasticised waist.

Crotch
- **Size 28:** The crotch of the trousers also had variations. Nine pairs of trousers had 9" and one pair had 10". Variation in the crotch may lead to tightness that may add stress to the crotch and can cause damage to the fabric very quickly. If it is too short, the trousers will ride up to your bottom.
- **Size 30:** The crotch of the trouser had variation of 0.5". Four trousers had 9.5" and six trousers had 10". Due to variation in the crotch because of tightness trouser may up into your bottom.
- **Size 32:** The crotch of the trouser had variation of 1". Five trousers had 10" and five trousers had 11". Due to variation in the crotch, it may lead to tightness or looseness on nearby areas of crotch that may cause fitting issues.

Hem Circumference
- **Size 28:** The hem circumference of the trousers had slight variations; six trousers had 12" and four trousers had 12.5". The knee circumference was 15" in seven trousers and three trousers had 15.5".
- **Size 30:** The hem circumference and knee circumference of the trouser had no variations. All the trousers had 13" as hem circumference and 16" for knee circumference.
- **Size 32:** The hem circumference of the trouser had variations of .5" like six trousers had 14" and four trousers had 13.5". The knee circumference had .5" variations. Seven trousers had 17" hem and three trousers had 16.5".

Variations in School Uniforms of the Same Size from Different Vendors:
- Variations were found in all the measurements. Maximum variations of 3-4 inches were in round chest, round hem, and shirt length. Variation of up to one inch was found in the cross shoulder, sleeve length, sleeve width, and armhole.
- In the case of trousers, the length was the same for all same-sized trousers. The variation was in the waist of up to 2 inches and the crotch of up to 1 inch. Maximum

variation in knee and hem circumference was ½ inch.

Skirt

Skirts were sold according to the age group of the children. Particular age group used skirt of specific height (mostly 18"). The length of skirt had variations of 18" to 20". Few people find 18" length of skirt appropriate while others do not find it suitable.

Maximum variations in the waist of the skirt can be seen of 28" to 31". Three skirts had 28" waist, one skirt had 29", five had 30" and one had 31".

C. Recommendations for Improved Consumer Satisfaction

- The use of detachable collars or cuffs can be considered.
- For tightness of the armhole and crotch a triangular piece of fabric (godet) should be used in these areas for easy body movements.
- An elasticized waist should be incorporated in the trousers as many face problems of looseness and tightness of the waist.
- The fabric of the Jackets should be warm enough so that layering can be avoided.
- Dark colours should be used for school uniforms instead of light colours.

Conclusion

- All the components fit well on the shirt except the sleeve (too long). Across shoulder droop at the shoulder and lines formed from shoulder to armhole. A loose chest leads to bulkiness at the waist as more fabric needs to be tucked in the trousers which causes difficulty while doing work and tightness suffocates the wearer. The armhole doesn't provide enough space for freely movement of the hand because of tightness.
- Creases can be seen on areas near the crotch due to tightness or looseness of the crotch. This caused difficulty in sitting. For some student's waist of the trousers is tightened and for some don't fit at the waist (loose waist of the trousers).
- It was observed that mostly the problems faced by the respondents in the school uniforms were that buttons easily came out of the uniforms after a few washes, stitching of pockets raveled as the threads used were not of good quality. The fabric and lining of the blazers and jackets used were not satisfactory according to respondents. Fading of the trousers (grey) was also observed. Children don't prefer to wear innerwear in winter because it restricts their movements so they feel that the lining fabric used should be warm enough to protect them in winter.

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