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One-Shoulder Bag Carrying and Some Shoulder Injuries for Middle-Stage Students

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Abstract

The aim of the research was to build a scale of shoulder injuries in middle school students. Identify the degree of shoulder injuries in middle school students who carry the bag on one shoulder. The researchers used the descriptive approach for its relevance and the nature of the research problem. The research community consists of (375) preparatory students who were randomly selected, where the construction sample consisted of (200) students, and the stability sample of (30) after (45) were excluded from the research sample, (15) because they were used as a sample to conduct the exploratory experiment, And (13) of those who did not complete the answer to the paragraphs of the scale and those whose answers did not arrive, and the number of the sample to which the open questionnaire was distributed was (17), and the sample of the application consisted of (100) students selected by random method. In order to obtain data related to the research objectives, the researcher had to perform scientific specifications of honesty, consistency and objectivity of the current research tool (shoulder injury scale), After that, a scale consisting of (24) paragraphs and distributed over four dimensions (muscular, cutaneous, nervous and vascular, structural dimension, functional dimension) was reached, with a hypothetical average (72), and the researcher used the statistical means measured in the SPSS system to obtain research data, The researchers concluded the effectiveness of the shoulder injury scale, which the researchers built on middle school students . Carrying a bag on one shoulder leads to some shoulder injuries in middle school students. The researchers recommend adopting the shoulder injury scale that the researchers built on middle school students and trying to apply it to other age groups. The emphasis is on students using a bag with two belts and carrying it on both shoulders instead of carrying it continuously on one shoulder. Educating students in the preparatory stage about the potential risks associated with the asymmetric carrying of the bag, and the importance of maintaining the correct posture while carrying it.

Keywords

School Bag,
Shoulder Injuries,
Middle School Students.



1. Definition of research

1.1 Introduction and importance of research

The school bag is one of the basic daily necessities for school students, as the student uses it constantly to transport books and study tools from home to school and vice versa. The way to carry the bag and its weight has received the attention of researchers because some incorrect methods of carrying may cause changes in body posture and the appearance of some musculoskeletal symptoms, especially in adolescence, which is characterized by continuous physical growth and development.

It should be noted that the method of carrying the bag can affect the posture of the shoulders and torso of students, and the importance of studying carrying the bag on one shoulder is increasing due to the nature of this asymmetrical method, as it leads to uneven load distribution between the sides of the body, leading to shoulder injuries. (Ding & et al.,2026) (Drzal-Grabiec & et al.,2015)

Despite this, scientific evidence does not indicate that the school bag alone is the direct cause of all musculoskeletal pain, as multiple factors overlap, including the way the bag is carried, the duration of pregnancy, and the weight of the bag.

The importance of the research is highlighted in clarifying the relationship between carrying a bag on one shoulder and some shoulder injuries among middle school students, as well as spreading awareness of the correct way to carry a bag, reducing shoulder injuries and pain, and providing recommendations that can benefit students, parents and schools.

1.2 The problem of research

Undoubtedly, the method of carrying a school bag is one of the factors that may affect the health of the musculoskeletal system among middle school students, and the fact that the two researchers observed teaching most students carry the bag on one shoulder while coming and leaving school, which may lead to increased pressure and stress on the shoulder area, and continuing this habit may be associated with the appearance of some pain or injuries in the shoulder, hence the problem of

research is to identify the relationship between carrying a bag on one shoulder and some shoulder injuries in middle school students .

1.3 Research objectives

1.3.1 construction of the scale of shoulder injuries in middle school students.

1.3.2 identify the degree of shoulder injuries among middle school students who carry a bag on one shoulder.

1.4 Research hypothesis

1.4.1 there are shoulder injuries in middle school students who carry a bag on one shoulder.

1.5 Research areas

1.5.1 human Field: students of the preparatory stage.

1.5.2-time domain: (1/9/2026) and to the end (1/10/2026).

1.5.3 spatial domain: via cyberspace.

1.6 Definition of terms

1.6.1 Shoulder injuries (Shoulder injuries)

- ❖ The two researchers define shoulder injuries: it is a group of damages that affect the shoulder joint, muscles, tendons or ligaments surrounding it, which lead to pain and reduce the range of motion of the joint, and occurs by carrying heavy weights or performing wrong movements.

2.1 Research Methodology

The two researchers used the descriptive approach for its relevance and the nature of the research problem.

2.2 The research community and its samples

The research community consists of (375) preparatory students selected randomly, where the construction sample consisted of (200) students,

and the stability sample of (30) after (45) were excluded from the research sample, (15) because they were used as a sample to conduct the survey experiment, and (13) who did not complete the answer to the paragraphs of the scale and those whose answers did not arrive, the number of the sample to which the open questionnaire was distributed reached (17), and the application sample consisted of (100) students selected by random method.

2. 3 Data collection tools

In order to obtain data related to the research objectives, the researchers had to do the following:

- Building a scale of shoulder injuries in middle school students.
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2.3.1 Construction of the shoulder injury scale

The researchers followed the following steps in constructing the scale.

- Determine the goal of the scale.
- Determine the sub-axes of the scale.
- Formulate paragraphs for each axis.
- Show the scale to the experts.
- Conducting a survey experiment of the scale with a date (10 / 9 / 2026).
- Distribution of the scale on the construction sample by date (15 / 9 / 2026).
- Conducting scientific transactions of the scale (discrimination, truthfulness, constancy, objectivity).

- Distribution of the scale on the sample (pre-dated Test) (16 / 9 / 2026) on (5) athletes.
- Unpacking the scale and finding out the results using statistical means bag (SPSS).

2.4 Statistical methods

In order to verify the research objectives, the researchers used the following statistical methods, which were calculated using the statistical program (spss), namely: (percentage, arithmetic mean, standard deviation, t-test, Alpha cronbach equation, Pearson correlation coefficient, sieberman-Brown equation for correction, hypothetical mean, standard error of the scale).

3. Presentation and discussion of the results

3.1 The first goal: to build a measure of shoulder injuries among students of the preparatory stage.

The first goal was achieved as a procedural goal through the steps described in part three on scientific grounds.

3.2 The second objective: to identify the degree of shoulder injuries among middle school students who carry the bag on one shoulder.

In order to achieve the second goal, shoulder injuries were measured among students of the preparatory stage by applying the shoulder injury scale to the members of the research sample, and the total score of the scale was adopted mainly in identifying the degree of shoulder injuries among the members of the research sample and Table (1) shows the details of this.

Table (1)

Shows the arithmetic mean, standard deviation, hypothesis mean and test Value (t) of the research sample in the shoulder injury scale

I indicators	Statistical						
	The sample	Arithmetic mean	Standard deviation	Hypothetical average	Calculated value (t)	sig	Semantics
The scale							
Shoulder injuries	100	91061	1704.	48	33.351	0.000	Moral

Moral at the level of its significance $\leq (0.05)$

It can be seen from Table (1) that the value of the arithmetic mean of the answers of the research sample on the paragraphs of the shoulder injury scale has reached (61.910) degrees, and with a standard deviation of (4.170) and the hypothetical average of the scale of (48) degrees, and using the (t) test for one sample, the calculated (t) value reached (33.351) at a significant level (0.000), which is smaller than the approved indication level (0.05), this indicates the presence of shoulder injuries the members of the research sample.

The researchers attribute the current result to the fact that carrying a bag on one shoulder leads to shoulder injuries, and this was confirmed by a study. (Mongkonkansai & et al., 2026) "The results showed that the way of carrying the bag affected some physiological and postural variables. Carrying the bag on one shoulder increased the heart rate compared to the load on the shoulders, and the mono-load led to an increase in the inclination of the head compared to the bilateral load, and the researchers concluded that the load using two shoulder belts provides a more uniform distribution of the load and limits postural deviations compared to using one shoulder belt".

4. Conclusions and recommendations

4.1 Conclusions

4.1.1 the effectiveness of the shoulder injury scale, which the researchers built on middle school students.

4.1.2 carrying a bag on one shoulder leads to some shoulder injuries among middle school students.

4.2 Recommendations

4.2.1 adopting the shoulder injury scale that the researchers built on the students of the preparatory stage and trying to apply it to other age groups.

4.2.2 emphasis on students using a bag with two belts and carrying it on both shoulders instead of carrying it continuously on one shoulder.

4.2.3 raising the awareness of students in the preparatory stage of the potential risks associated with the asymmetric carrying of the bag, and the importance of maintaining the correct posture while carrying it.

4.2.4 educate parents on the need to monitor the weight of the bag and its contents and reduce the carrying of unnecessary books and tools.

4.2.5 encourage schools to implement short educational programs on the correct posture of the body and the way to carry the school bag as part of health or sports activities.

4.2.6 the need for school administrations and teachers to adhere to the daily academic schedule, and not to require students to bring more than one book or additional study supplies that are not required by the scheduled classes, in order to reduce the excess weight of the bag and reduce the stress on the shoulders and torso of preparatory students.

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