

## ORIGINAL ARTICLE

**Prevalence of Shoulder Pain among Female Students Carrying Heavy Bag**AAMIR GUL MEMON<sup>1</sup>, MARINA KHAN SOOMRO<sup>2</sup>, MEHJABEEN FAROOQUI<sup>3</sup>, JAIMALA RATHI<sup>4</sup>, MUHAMMAD SANAULLAH<sup>5</sup>, SALEH SHAH<sup>6</sup>, MUHAMMAD IMRAN HUSSAIN<sup>7</sup>, MARYAM<sup>8</sup>, FATIMA CHAUDHARY<sup>9</sup><sup>1</sup>Assistant Professor, Physical Therapy Department, Riphah International University, Lahore, Pakistan<sup>2</sup>Lecturer, Physical Therapy Department, Suleman Roshan Medical College, Tando Adam<sup>3</sup>Lecturer, Physical Therapy Department, Prime Institute of Health Sciences, Islamabad<sup>4</sup>Clinical Physiotherapist, Mithi Private Hospital, Mithi<sup>5</sup>Senior lecturer, Physical Therapy Department, Riphah International University, Lahore, Pakistan<sup>6</sup>Assistant Professor, Superior University, Lahore<sup>7</sup>Assistant Professor, RCRAHS, Riphah International University, Lahore, Pakistan<sup>8,9</sup>MSPT (Peads) Student, Physical Therapy Department, Riphah International University, Lahore, PakistanCorrespondence to Dr Aamir Gul Memon, Email: [aamir\\_mmn642@yahoo.com](mailto:aamir_mmn642@yahoo.com), Contact no: +92-317-3766621**ABSTRACT****Aim:** To determine the prevalence of shoulder pain carrying heavy bags in female students**Methodology:** This was across-sectional study and data were collected through a convenient sampling technique. Data collected from the university female students of Sindh. A visual analog scale was used to assess the intensity of pain, and to assess the burden of shoulder pain, data were collected using a self-administered questionnaire. Data was analyzed through SPSS Version 22.**Results:** Results indicate that the mean age  $\pm$  SD of participants were  $22.8 \pm 1.99$ , mean height  $\pm$  SD were  $61.10 \pm 3.7$  in inches, mean weight  $\pm$  SD were  $54.9 \pm 3.4$  kg. The result of this study shows that majority of students are experiencing shoulder pain by carrying uncomfortable bags in routine life. About 38.3% of messenger bags are comfortable to carry. The majority (67.5%) of the students have shoulder pain during activity, 34.2% at its worst and minority of the students are suffering from sleep disturbance due to shoulder pain.

Practical implication: few studies have assessed the relationship between university students and heavy bags. Therefore, our hypothesis is that the use of overweight shoulder bags can influence the occurrence of shoulder pain. Thus, the present study aimed to determine the prevalence of shoulder pain carrying heavy bags in female students

**Conclusion:** It is concluded that there is high prevalence of shoulder pain due to the type of bags among university-going females. The shoulder bags cause moderate to severe shoulder pain and mostly dull aching and generalized type of pain caused by shoulder bags.**Keywords:** Females students, Heavy bags, Prevalence, Shoulder pain**INTRODUCTION**

The most frequent complaint in the general population that results in functional impairment is shoulder pain. Shoulder pain in women seems to be more common than in males internationally, which is highly linked with work tasks<sup>1</sup>. Injuries to the shoulder's anatomical structure include strain, swelling, fibrosis, hypovascularization, and articular deterioration. Overburden, work activity, psychosocial issues, stress, and an inadequate rest period are found to have an occurrence relation with the development of shoulder pain<sup>2</sup>.

Several conditions that cause pressure on the shoulder girdle, notably carrying substantial bags, may cause both functional and anatomical changes. Many studies have been carried out on the impacts of backpack wear, mainly in school-aged children. There are, unfortunately, limited investigations concerning the use of female shoulder bags and the maximum recommended volume to decrease the adverse and long-term impact upon these joints<sup>3</sup>. Women of all ages seem to be more likely to develop chronic pain in their shoulder and neck muscles as a consequence of long-term exposure to heavy bags in these regions<sup>4</sup>. Despite the intense pain, which has alarming symptoms, chronic pain does not. However, a prolonged symptom that remains even when the fundamental cause of the problem has been resolved can be distressing. Besides changing one's physical activity, sexual behavior, self-worth and relationships with someone's family, friends, and colleagues, it could also cause depression and negative thinking<sup>5</sup>. The evaluation of severe pain should be thorough because of its numerous etiology and include details on its occurrence frequency, intensity, and power, among other things<sup>5</sup>.

A significant factor associated with shoulder pain is the excessive strain exerted on the joints and muscles when some women carry burdens that are unsafe to their design, such as bags and backpacks<sup>6</sup>. Simple associations between accessories' weight,

size, shape, and duration and a woman's physical composition might result in more severe damage, such as changing body alignment, the center of gravity displacement, increased shoulder muscular activity, weakness, and discomfort<sup>7</sup>. School bags should never carry over 10% to 20% of the body weight, according to some investigations that looked at the weight of these accessories and engaged students. An expansion in these proportions may lead to issues of the spine's curve, poor posture habits, a pain-learning setting, and a decrease in life quality. Furthermore, this prolonged use of heavy backpacks has a combined effect that could lead to future chronic illnesses<sup>8</sup>. Women in today's society are often faced with a variety of design issues related to the type, volume, and shape of bags. In addition, women are particularly vulnerable to shoulder complex problems as a result of their tasks including work, study, family, social events, and others as well as the weight of their shoulder bags<sup>9</sup>. Despite what has been written above regarding the effects of different uses of female shoulder bags, very few examinations have gone as deeply as they possibly might into this category of female items. Therefore, we speculate that carrying heavy shoulder bags may have an impact on the prevalence of shoulder pain<sup>10</sup>.

Just a few studies have assessed the relationship between university students and heavy bags. Therefore, our hypothesis is that the use of overweight shoulder bags can influence the occurrence of shoulder pain.

Thus, the present study aimed to determine the prevalence of shoulder pain carrying heavy bags in female students.

**METHODOLOGY**

A cross-sectional study was conducted at Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro from July 2019 to Dec 2019. 120 Female students have participated in this research through the non-probability convenience sampling technique; the sample was calculated through Rao soft online tool. Female students age between 17-26 years and under-graduate students were comprised in this survey. Female students who experienced

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any handicap or body discrepancy were excluded from this study. Ethical approval was got from the institutional board (IRB) of Institute of Physiotherapy and Rehabilitation Sciences, LUMHS Jamshoro. A written and informed consent form was signed by all participants. Data was entered and analyzed through SPSS Version 22, and data is presented in the form of Mean±SD, frequencies and percentage.

**RESULTS**

Outcomes of our examination demonstrate Mean age and SD of 120 Under-graduation students were 22.57±1.99 in years, Mean height and SD were 61.120±3.66 in inches, and mean weight and SD were 54.28±3.41in Kg.

In table I type of bag carried by university students includes backpack (18.3%), messenger (35%) and tote (46.6%). Dull pain (36.36%) was high in backpack, generalized pain (80.95%) was high in messenger and dull pain (25%) also high in tote bag.

In table II Severe pain (50%) was more common in backpack users, moderate pain was more observed in messenger bag and severe pain also more common in tote bag users.

In table III Dull type (57.1%) was highest among mild category of pain with backpack users, burning type (60%) of pain was more common among severe category of pain with

messenger and Dull types (33.3%) of pain was more observed in moderate category of pain with tote bag users among university students.

Figure I: Shows prevalence of shoulder pain

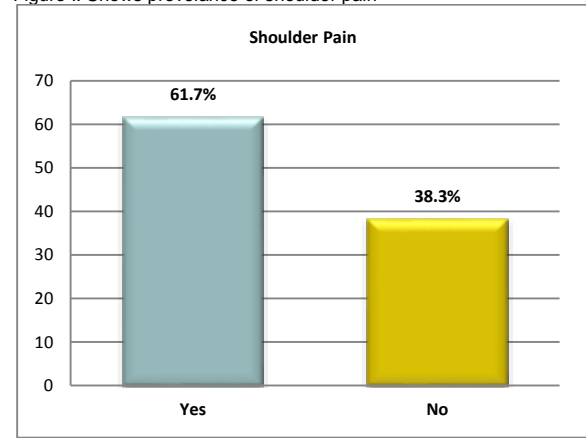


Table I: Shoulder pain according to types of bag

		Dull	Aching	Burning	Tingling	Pins	Diffused	Localised	Generalised
Backpack	22	8	5	1	3	1	1	1	2
	18.3	36.36%	22.73%	4.55%	13.64%	4.55%	4.55%	4.55%	9.09%
Messenger	42	1	0	3	0	1	2	1	34
	35.00	2.38%	0.0%	7.14%	0.0%	2.38%	4.76%	2.38%	80.95%
Tote	56	14	9	4	2	3	4	11	9
	46.6	25%	16.07%	7.14%	3.57%	5.36%	7.14%	19.64%	16.07%

Table II: On a scale of 1 to 10 circle how would rate your shoulder pain

Types of bag	N	Mild	Moderate	Severe
Backpack	22	7 31.81%	4 18.19%	11 50%
Messenger	42	3 7.14%	34 80.95%	5 11.90%
Total	56	18 32.14%	13 23.22%	25 44.64%

Table III: How would you describe your shoulder pain

Types of bag	n	Intensity of pain	Dull	aching	Burning	Tingling	pins	Diffused	localised	generalised
Backpack	22	Mild	4 57.1%	0 0.0%	1 14.3%	2 28.6%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
		Moderate	2 50.0%	1 25.0%	0 0	0 0	1 25.0%	0 0.0%	0 0.0%	0 0.0%
		Severe	2 18.2%	4 36.4%	0 0.0%	1 9.1%	0 0.0%	1 9.1%	1 9.1%	2 18.2%
Messenger	42	Mild	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 33.3%	1 33.3%	0 0.0%	1 33.3%
		Moderate	0 0.0%	0 0.0%	0 0	0 0	0 0.0%	1 2.9%	0 0.0%	33 97.1%
		Severe	1 20.0%	0 0.0%	3 60.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 20.0%
Tote	56	Mild	4 22.2%	3 16.7%	1 5.6%	1 5.6%	1 5.6%	2 11.1%	5 27.8%	1 5.6%
		Moderate	4 33.3%	3 25.0%	0 0	0 0	0 0.0%	0 0.0%	1 8.3%	4 33.3%
		Severe	6 24.0%	3 12.0%	3 12.0%	1 4.0%	2 8.0%	2 8.0%	5 20.0%	3 12.0%

**DISCUSSION**

There are three types of shoulder bags mostly used are backpacks, messenger, and tote. The most well-known schooling bag was backpack with two straps<sup>11,12</sup>. Current study showed that mostly used should bag was tote.the females with back pack had severe pain and dull in nature. The messenger bags carrying females had moderate pain with generalized nature and in females with tote bags had sever pain with dull nature.

A study results showed that most common type of bag was a backpack (89.3%). The remainder of students carried a variety of other bags including sports bags (7.9%) and cloth carry bags

(0.8%). The students with back pack had more shoulder painthan in other type of bags<sup>13</sup>. In current study, studnts carry different types of bag to the universities, in which 18.30% use backpacks, 35% students use messenger, and 46.60% use tote bag. The previous study was conducted on school going children and current study was conducted on university students.

A study conducted in the middle east with female teachers aged more than 20 years showed a high prevalence (60%) of shoulder pain and physical activity was associated with pain<sup>14</sup> On the other hand, a study conducted in European female with 20-55 years of age found a lower prevalence (25.50%) of shoulder pain<sup>2</sup>.The age of females in current study was 18-26 years and the

prevalence of shoulder pain was 61.7% which was higher than those previously reported in a previous study. In previous study the females were either office workers although those female also carrying office bags but female in current study were university going and they mostly carry university bags.

In other research, 50.2% of the women with bags feeling shoulder pain each day and 60.5% felt moderate shoulder pain<sup>10</sup>. Our study results showed that practically dull type (57.1%) was highest among mild category of pain with backpack users and dull types (33.3%) of pain was also more observed in moderate category of pain with tote bag users among university students.

Although the varying levels of intensity noted in the studies, shoulder discomfort in women is a serious worry because they are a group that is prepared to work and includes women of reproductive age; as a result, this type of pain may affect their day-to-day tasks<sup>15</sup>. These findings imply that carrying big bags continuously worsens symptomatology by increasing the adverse pressure put on the shoulder girdle.

## CONCLUSION

It is concluded that there is high prevalence of shoulder pain due to tote type of bags among university going females. The shoulder bags cause moderate to severe shoulder pain and mostly dull aching and generalized type of pain cause by shoulder bags.

**Conflict of interest:** Nil

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