

Sources of Anxiety among Female Physical Education Students Enrolled in the Gymnastics Course at Al al-Bayt University

¹D. Maysloon Kamil AL-shadiedh, ²D. Ayat Alshaer, ³Abdallah Salem Abed Khataybeh, ⁴Karam Khalaf Naser Abu A'aqoulah

¹Department of Physical Education, Faculty of Educational Sciences, Al al-Bayt University-Jordan, Email: maysloon2777@gmail.com

²Department of Physical Education, Faculty of Educational, Qatar University, Email: aalshaer@qu.edu.qa

³Department of Physical Education, Faculty of Educational Sciences, Al al-Bayt University- Jordan, Email: D.Khataybeh@aabu.edu.jo

⁴Department of Physical Education, Faculty of Educational Sciences, Al al-Bayt University-Jordan

Abstract

This study aims to identify the sources of anxiety facing female students on the gymnastics course in the Department of Physical Education at Al al-Bayt University. The study sample consists of 58 intentionally selected female students of gymnastics. The researcher takes a descriptive approach which suits the nature of the study and uses a questionnaire on the sources of anxiety as a tool for data collection.

Following statistical analysis, the study shows that the sources of anxiety facing the female students on the gymnastics course in the Department of Physical Education at Al al-Bayt University are medium, with the field of fear of failure ranked first, followed by the field of loss of control, and the field of fear of devices ranked last. The study also shows that female students residing in villages have higher differences than female students residing in the city with regards to psychological pressures and fear from devices. The study indicates that the sources of anxiety among the females reduces with increased years of study and there are no statistically significant differences ($\alpha \leq 0.05$) in the sources of anxiety according to the variable cumulative average (GPA).

Keywords: Anxiety, sources of anxiety, gymnastics course.

INTRODUCTION

Gymnastics is a sport characterized by difficult performance that can only be accomplished if a player gives their best effort. It requires a high level of motor skills, as well as a high level of self-control, as its skills depend on accuracy, fluidity and consistency in performance in every part of the movement. Gymnastics is a sport with a large technical component, since accurate guidance during training plays a key role in developing skill in performance (Abdul-Jabbar, 1994). Individual skills are influenced by the link between the mind and motor

performance, and require focus, visualization and coordination of motor skills in order to perceive the movement accurately (Balkeen, 1968).

Barhoum (1995) and Luca (1996) indicate that gymnastics is a technically difficult, aesthetically pleasing sport that requires the athlete to have high-level skills and make both mental and physical preparation. Gymnastics requires a lot of hard work, flexibility, consistency, courage and determination to master. In order for the players to reach a high level of skill and proficiency, it is the

responsibility of teachers and coaches to take into account their talents, make the preparations necessary for gymnastics, and focus on methods of learning motor skills.

As with other sports, the practitioners are affected by emotional pressure, whether external, as a result of other aspects of their lives, or internal, as a result of the practice of gymnastics. It is possibly one of the sports in which psychological pressure is greatest, due to the difficulty and accuracy required. Shehata (2012) stresses that gymnastics is distinguished from other sports by the diversity of the devices used, which require a high degree of focus and accuracy during performance, and have a high degree of difficulty.

Al-Dhamad (2003) indicates that sports psychology an important science which studies the psychological and personal aspects which affect the performance of students. She indicates that there are many psychological factors that affect, positively or negatively, the athlete, and among these factors, anxiety, a psychological phenomenon resulting from internal or external influences, can affect the individual during competition.

Anxiety is a strange and painful feeling or sensation resulting from poor adaptation and inconsistency. A high level of anxiety is an obstacle to every achievement or performance because it reduces the individual's ability to work and enjoy life. On the other hand, moderate anxiety can be an energizing and motivational, helping the individual to work and perform (Ali, 2004).

Ratib (2001) considers anxiety to be one of the most important emotions affecting the performance of athletes, and it can be either positively or negatively motivated, causing them to exert more effort. Anxiety occurs when athletes have negative expectations about the level of their performance, which shows in their inability to focus or pay attention. As a result of the large amount of pressure applied to students, their skill and cognitive performance can become clear, along with their psychological and behavioural reactions, both positive and negative, which can lead to

anxiety and other emotions related to skill and performance.

Importance of the study

This study is crucial for identifying the sources of anxiety that students at the Department of Physical Education at Al al-Bayt University face when taking gymnastics courses. The importance of the study appears in the following:

- The study highlights the role of sports anxiety and its impact on the performance of female students taking gymnastics courses.
- It encourages students to overcome their psychological crises and stay away from behaviours that lead to psychological pressure.
- It directs those in charge of teaching gymnastics to pay attention to the psychological aspects of their students, so as to reduce negative anxiety and raise skill levels.
- It builds a scale that measures the sources of anxiety among female students taking a gymnastics course.
- It highlights the role of sports anxiety in the performance of female gymnastics students.
- It is new research that has not previously been addressed to the female students of the Department of Physical Education at Al al-Bayt University, due to the novelty of the department.

Study problem

Due to the lack of gymnastic equipment in our schools and the obvious lack of female specialists in the sport, gymnastics does not receive enough attention at all school levels. Gymnastics is one of the compulsory courses at the Department of Physical Education at Al al-Bayt University, and the problem of the study stems from this fact. The teaching of gymnastics at the university aims to introduce students to gymnastic skills on various devices and how to practice them, which is associated with the difficulties faced by students on the gymnastics course. The researcher works at Al al-Bayt University as a

gymnastics course teacher, and observes the students' anxiety and fear of performing the required skills. As it is a course that requires high-level physical and motor skills, many students postpone registering for the course until their graduation semester. Therefore, the researcher has decided to conduct this study in an attempt to uncover the sources of anxiety experienced by students at the department and suggest mechanisms to reduce the phenomenon of anxiety and turn it into a positive aspect which raises students' performance.

Objectives of the study

The study aims to identify:

1. The sources of anxiety faced by female students at the Department of Physical Education at Al al-Bayt University.
2. The sources of anxiety faced by female gymnastic students at Al al-Bayt University due to the variables of the study (residence, cumulative average, academic year).

Study questions

The study aims to answer the following questions:

1. What are the sources of anxiety that face female students taking the gymnastics course at the Department of Physical Education at Al al-Bayt University?
2. Are there any statistically significant differences ($\alpha \leq 0.05$) in the sources of anxiety that face female students taking the gymnastics course in the Department of Physical Education at Al al-Bayt University, according to the variables of the study (residence, cumulative average, academic year)?

Terminology

Anxiety: an unpleasant emotional state that the player is aware of, either repressed, internal and not linked to external management, or external, reflected in her actions as a reaction to a specific situation she is facing, reflected either positively or negatively in her performance (Abu Samhadana and Bani Hani, 2016).

Source of anxiety: the cause of anxiety among the female gymnastics course students, studied by translating behaviours and finding the real source, which could be:

1. **Psychological stress:** emotional and mental disorders that lead to incompatibility between muscular and nervous factors, forming a link in the thoughts that enter the mind when a person performs her duties, which may lead to apathy and the possibility of incompleteness of the work assigned (Alawi, 1998).
2. **Fear of devices:** procedurally defined as an intense fear of sports equipment that the athlete feels as a result of the danger that threatens her, preventing her from responding in a rational manner. This danger is not justified with the presence of safety measures.
3. **Loss of control:** a psychological state in which the individual feels an increase in anxiety as a result of inability to focus and control performance, and as a result the control is external and not internal (Ratib, 2000).
4. **Fear of failure:** a condition wherein the individual suffers as a result of fear of failing to perform, which comes from a lack of security regarding her self-concept or self-esteem, being dominated by negative thoughts such as "how do I face society if I fail?" (Allawi, 2009).

Gymnastics course: a compulsory practical course offered to undergraduate students at the Department of Physical Education at Al al-Bayt University to learn gymnastics skills.

Limitations

The study is constrained to the following human, temporal and special parameters:

- **Human:** all female students at the Department of Physical Education at Al al-Bayt University registered on the gymnastics course in the first semester of the academic year 2019/2020.
- **Temporal:** the sample period 27/11/2019 to 28/12/2019.

- Spatial: the Department of Physical Education, Al al-Bayt University.

Previous studies

Abu Samhadana and Bani Hani (2016) identify the sources of anxiety among female students on the gymnastics course at the faculty of Sports Sciences at Mutah University, with a sample of 39 students representing the total community of the study. The researchers take the descriptive approach in survey form, using a questionnaire as a tool for data collection about the sources of anxiety. The sources of anxiety scale has 55 items distributed over 6 domains. Means, percentages, standard deviations, and an analysis of multiple variances are undertaken and the results show that the anxiety among the female students on the gymnastics course was of a medium degree, but with an absence of statistically significant differences due to the study variables (residence, cumulative average, academic level). In light of the results, the researchers recommend holding internal training courses for gymnastics skills for female students at the College of Sports Sciences at Mutah University.

Al-Dolat (2002) identifies the sources and levels of anxiety and psychological stress experienced by students on gymnastics courses at faculties of physical education in Jordanian universities. The sample consists of 350 male and female students. A questionnaire prepared by the researcher covers 53 items distributed over 5 domains. The results show that the sources of anxiety and psychological stress in the 5 domains among students were medium, while the sources and levels of anxiety among females were higher than among males.

Layeth et al. (2013) identify the relationship between psychological stress, self-confidence and the performance of basic skills in floor exercises in artistic gymnastics among women. The study population is its sample, consisting of 40 students in the second year at the College of Physical Education, University of Baghdad. The researchers conclude that psychological stress has an impact on the level of

performance and recommend paying attention to the psychological needs of female students and enhancing their self-confidence, due to its apparent importance in the level of performance of gymnastic skills.

Turki and Tahseen (2009) study the relationship between anxiety and the ability to achieve a flip on a vault table. The sample consists of 14 students in the third stage at the Department of Physical Education, and the researchers take a descriptive approach to the problem, using a scale translated and revised by Ibrahim (1984), along with the means, standard deviations, Pearson correlation coefficient, and multiple correlation. The results show a significant correlation between the general anxiety scale and achievement, and the existence of an effect of the general anxiety scale at the level of female students.

Al-Khasawneh (2007) identify the levels of anxiety of female students on gymnastics courses at the Faculty of Physical Education at Yarmouk University. The researcher takes a descriptive approach to the study problem, using the Spielberger scale to measure anxiety, and a self-esteem checklist to measure anxiety and trait states. The study sample consists of 40 female students, chosen intentionally, and measures their anxiety states before and after a final test, by applying the two tools. The results show statistically significant differences between the female students from the two research categories in their anxiety states before the exam, but no differences between the female students in the two research categories in trait anxiety before the exam.

Mukesh Mitra (2013) determines the relationship between state anxiety and performance in gymnastics. The sample consists of 30 gymnasts, selected randomly, and a questionnaire prepared by the researcher consisting of 27 items distributed over 3 domains (technique, cognitive anxiety, self-confidence). The results indicate a significant relationship between physical anxiety, cognitive anxiety, and self-confidence with performance among the gymnasts.

Kazem and Muhammad (2010) identify the multi-dimensional anxiety of female gymnastics students, and the relationship between multi-dimensional anxiety and the performance of an inner flip movement on the vault device. The study sample consists of 74 players, randomly selected from 7 clubs. The researchers take a descriptive approach to the problem, using a self-assessment questionnaire scale prepared by Muhammad Hassan Allawi. The researchers calculate the mean, standard deviation, simple correlation coefficient (Pearson) and significance of correlation. The results show the existence of a significant relationship between multidimensional anxiety and the accuracy of performance of the gymnastic skill.

Comment on previous studies

From the review of previous studies, the researcher notes that most agree with the subject of this study, in that they deal with the sources of anxiety facing students taking gymnastics courses. The researcher benefits from these studies in determining the method used, how to choose the sample and build the study tool. This study is distinguished from previous studies in that it aims to reveal the sources of anxiety and the extent of their impact on the performance of students taking the gymnastics course, so as to reduce them and positively affect their skills and performance.

Procedure

Study approach

The researcher takes a descriptive (survey) study approach, as it suits the nature of this study and can achieve the objectives.

Community

The study community consists of all female students registered on the gymnastics course in the first semester of 2019/20 (N=64).

Sample

The study sample consists of 58 female students enrolled on the gymnastics course in

the first semester of 2019/20, chosen intentionally from the study community.

Description of the study sample

The researcher distributed 64 questionnaires, of which 6 were chosen randomly to be excluded from the sample to form the exploratory (survey) study. Table 1 shows the distribution of the sample according to personal variables.

Table 1: *Distribution of the sample according to personal information*

Variable	Level	Frequency	Percentage
Place of residence	City	22	37.9
	Village	36	62.1
	Total	58	100.0
Academic level	1st year	3	5.2
	2nd year	2	3.4
	3rd year	19	32.8
	4th year	34	58.6
	Total	58	100.0
Cumulative average (GPA)	67.99 or less	7	12.1
	68-75.99	16	27.6
	76-84	26	44.8
	More than 84	9	15.5
	Total	58	100.0

Exploratory survey sample

The researcher used a random sampling method, by which 6 questionnaires were selected for an exploratory sample. These 6 students were excluded from the full study sample. The aim was to test the reliability of the tool (the questionnaire) and find any problems or errors by applying it to the exploratory sample. After verifying the validity and reliability of the tool, it was approved and used for the full data collection.

Tool

Following the review of the theoretical literature and previous research related to the subject of study, the researcher designed and built a questionnaire to identify the sources of anxiety among students on the gymnastics course.

The study tool included demographic information and the sources of anxiety scale. It initially consisted of 60 items covering 6 domains: psychological stress (12 items), fear of devices (9 items), psychological frustration (10 items), loss of control (8 items), fear of failure (9 items), and lack of readiness (10 items).

After presenting the tool to a group of arbitrators, specialists in the field of psychology and the subject of the study, the final form of the scale consists of 38 items distributed over 4 domains:

1. Psychological stress (paragraphs 1-12)
2. Dread of devices (paragraphs 13-21)
3. Loss of control (paragraphs 22-29)
4. Fear of failure (paragraphs 30-38).

The tool used a five-point Likert scale to score the sources of anxiety among female students taking the gymnastics course, as in the studies of Allyson (1993), Al-Dolatb (2002) and Abu Samhadana and Bani Hani (2016).

Scientific treatment of the test

Validity of the tool

The validity of the tool was verified by presenting it to a group of specialized arbitrators familiar with the subject of the study, members of the teaching staff in the faculties of physical education in Jordanian universities and other universities. Taking the opinions they expressed about the study tool, it was rebuilt in its final form, and amended again according to their notes. It was presented to them again after the amendment, and the arbitrators agreed on the validity of the content, and that it did indeed measure what it was

intended to. Appendix 2 lists the names of the arbitrators.

Reliability of the tool

To verify the reliability of the tool, the reliability coefficient (Cronbach's alpha) was calculated for all paragraphs in the study domains, and for the tool as a whole, as shown in Table 2.

Table 2: Cronbach's alpha for the domains for the exploratory sample

Domain	Reliability coefficient
Psychological stress	0.78
Dread of devices	0.76
Loss of control	0.75
Fear of failure	0.70
Tool as a whole	0.75

Table 2 shows that the reliability coefficients for the tool domains range from 0.70 to 0.78, all of which are highly acceptable values for the purposes of the current study.

Variables of the study

Independent variables

- 1 - Place of residence: two levels (city, village).
- 2 - Academic level: four levels (first, second, third and fourth).
- 3 - Cumulative average (GPA): four levels (67.99 and below, 68-75.99, 76-84, more than 84).

Dependent variable

- 1 - Source of anxiety: four areas (psychological stress, dread of devices, loss of control, fear of failure).

Statistical processors

The researcher used the Statistical Package for Educational and Social Sciences (SPSS) program for data processing, in which the means and standard deviations for the tool as a

whole, the one-way analysis of variance (ANOVA) test, Cronbach's alpha, and independent samples T-test (Scheffe test) were calculated.

Presentation and discussion of results

This section includes the presentation of the results of the study, which identify the sources of anxiety facing the students taking the gymnastics course in the Department of Physical Education at Al al-Bayt University,

measured by their responses to the questions of the study. Below is a presentation and discussion of these results.

Results related to the first question: What are the sources of anxiety that face students taking the gymnastics course at the Department of Physical Education at Al al-Bayt University?

To answer this question, the means and standard deviations of the answers by the sample members are calculated for the study domains and the tool as a whole, given in Table 3.

Table 3: Mean and standard deviation (descending order by mean)

Rank	No.	Domain	Mean	Standard deviation	Evaluation
1	1	Psychological stress	3.42	0.65	Medium
2	4	Fear of failure	3.37	0.85	Medium
3	3	Loss of control	3.25	0.92	Medium
4	2	Dread of devices	3.19	0.85	Medium
The tool as a whole			3.32	0.70	Medium

Table 3 shows that the averages of the responses of the sample for each domain of the tool range from 3.19 to 3.42, and the highest averages are for the domain psychological stress, followed by fear of failure, then loss of control, and lastly dread of devices.

To give a more detailed picture of the sources of anxiety among the students, the means and standard deviations of their responses are calculated for the paragraphs in each domain individually, as given in Tables 4-7.

Table 4: Mean and standard deviation of the responses to the paragraphs in the psychological stresses domain (in descending order)

Rank	Number	Paragraph	Mean	SD	Evaluation
1	5	Being immersed in thinking increases my doubts about my abilities when performing the skill	3.81	1.12	High
2	7	Repeated injuries when performing the skill increases my fears	3.79	1.17	High
3	3	I perform the skill hastily	3.74	1.07	High
4	1	Interfering with my personal affairs raises my fears	3.72	1.07	High
5	6	I struggle to focus on several skills at once	3.67	1.19	Medium
6	10	For fear of being reprimanded I deal with the instructor with caution during the exam	3.48	1.20	Medium
7	4	The lack of reconciling between the theoretical and practical study of the course bothers me	3.38	1.18	Medium
8	9	I sleep little the night before the exam	3.38	1.39	Medium
9	8	Teacher's authoritarian treatment causes me a lot of problems	3.29	1.51	Medium
10	11	I have thought of dropping or withdrawing the course for fear of it	3.16	1.45	Medium

11	2	My family's inability to provide for my needs worries me	3.03	1.17	Medium
12	12	Students feel ashamed to wear gymnastics clothes while learning gymnastics	2.55	1.33	Medium
The domain of psychological pressures			3.42	0.65	Medium

It appears from Table 4 that the means of the responses of the sample to the paragraphs of the psychological stress domain range from 2.55 to 3.81. Paragraph 5, "being immersed in thinking increases my doubts about my abilities when performing the skill" came first (M=3.81) with a high evaluation score. Meanwhile, paragraph 12, "students feel ashamed to wear gymnastics clothes while learning gymnastics" came last (M=2.55) with a medium evaluation score. The average for the psychological stresses (pressures) domain as a whole is 3.42, with a medium evaluation score. From the

researcher's point of view, this result shows that the nature of gymnastics is characterized by a high degree of danger, which requires the teacher to use specific teaching methods, such as command and control methods, in order to maintain the factors of security and safety while the students perform the required skills. However, this does not correspond with the nature of the female students, as they do not like this method, which leads to psychological pressure, causing anxiety and impeding the proper performance of the skills.

Table 5: Means and standard deviations of the responses to the paragraphs in the dread of devices domain (in descending order)

Rank	Number	Paragraph	Mean	SD	Evaluation
1	2	My fear decreases when my teammates perform well on the devices	4.00	0.92	High
2	9	I feel I can achieve better results if the performance on the devices is optional	3.72	1.29	High
3	1	I feel frightened when performing on the devices	3.60	1.18	Medium
4	3	I find it hard to feel safe while performing unassisted on the devices	3.28	1.35	Medium
5	5	I feel insecure about relying on myself for difficult tasks on the devices	3.19	1.41	Medium
6	6	Frequent failure to perform on the devices always frustrates me	3.05	1.38	Medium
7	8	I get bored when I perform the skill on the devices during the lecture	2.69	1.30	Medium
8	7	I think this course should be replaced with other courses	2.64	1.40	Medium
9	4	I have a desire not to attend lectures because I am afraid of new movements on devices	2.52	1.42	Medium
The dread of devices domain			3.19	0.85	Medium

Table 5 shows that the means of the responses to the paragraphs in the dread of devices domain range from 2.52 to 4.00. Paragraph 2, "my feeling of fear decreases when my teammates perform well on the devices" came first (M=4.00) with a high rating score, while paragraph 4, "I have a desire not to attend lectures because of my fear of new movements on the devices" came last (M=2.52), with a medium rating score. The mean for the whole domain is 3.19, with a medium rating score.

results if performance on the devices is optional, as well as the vague fear female students have of performing on gymnastics equipment which affects their levels of anxiety. The specificity of gymnastics performance, the multiplicity of its devices and the various skills require high levels of concentration and accuracy during performance. In addition to the difficulty and danger of performing, it requires great focus and attention, which reduces boredom during the lectures.

The researcher attributes this result to the possibility that female students achieve better

Table 6: Means and standard deviations of the responses to the paragraphs in the loss of control domain (in descending order)

Rank	Number	Paragraph	Mean	SD	Evaluation
1	2	I feel distressed about the events around me	3.69	1.20	Medium
2	6	I am convinced that the negative results of my performance make me lose control of my nerves	3.45	1.30	Medium
3	4	I can't control my thoughts while performing the skills	3.36	1.29	Medium
4	3	During the lecture I get the feeling that I can't control my performance	3.22	1.23	Medium
5	7	I doubt my ability to influence what happens around me during the lecture	3.21	1.25	Medium
6	8	I feel like every complex skill in the course is a direct threat to me	3.16	1.35	Medium
7	5	I get scared and threatened just thinking about the exam	3.10	1.25	Medium
8	1	I guess my concern for myself does not leave me a chance to think of anything else	2.79	1.33	Medium
The loss of control domain as a whole			3.25	0.92	Medium

Table 6 shows that the means of the responses to the paragraphs in the loss of control domain range from 2.79 to 3.69. Paragraph 2, "I feel distressed about the events around me" has the highest mean and came first ($M=3.69$) with a high rating score, while paragraph 1, "I guess my concern for myself does not leave me a chance to think of anything else" has the lowest mean and came in last place ($M=2.79$, $SD=1.33$) with a medium evaluation score. The mean for the loss of control domain as a whole is 3.25, with a medium evaluation score.

The researcher attributes this result to the students' feelings of fear and threat from just

thinking about the test, and also to the situation they suffer as a result of an inability to focus and control the performance. The control is external rather than internal, and the students' interest in themselves does not hinder them from thinking about other things. However, most of their attention is focused on the skills presented during the lecture, and directed away from personal matters, which hinders their ability to focus, but makes them able to control their thinking and find appropriate solutions to overcome the obstacles they face. This may make them frustrated, as the skills require a high degree of focus on the details and technical steps.

Table 7: Means and standard deviations of the responses to the paragraphs in the fear of failure domain (in descending order)

Rank	Number	Paragraph	Mean	SD	Evaluation
1	4	Strange thoughts give me the incentive to face failure to perform	3.64	1.05	Medium
2	9	Sometimes the fear of failure helps me do better	3.59	1.21	Medium
3	6	Lack of optimism means my performance is threatened with failure at every moment	3.48	1.20	Medium
4	7	My constant wandering mind makes me tired	3.48	1.08	Medium
5	3	I find it difficult to control my behaviour while performing	3.36	1.27	Medium
6	1	I get negative thoughts when performing	3.33	1.38	Medium
7	8	I expect failure before I start	3.24	1.38	Medium
8	2	I feel I can't tell anyone how much fear I feel when performing	3.22	1.35	Medium
9	5	I am afraid to confront the teacher and I do not know how to deal with him	2.98	1.34	Medium
The fear of failure domain as a whole			3.37	0.85	Medium

Table 7 shows that the means of the responses to the paragraphs in the fear of failure domain

range from 2.98 to 3.64, with a medium evaluation for the domain. Paragraph 4,

“strange thoughts give me the incentive to face failure to perform” came in first with an average score 3.64, while paragraph 5, “I am afraid to confront the teacher and I do not know how to deal with him” came last, with an average of 2.98. The arithmetic mean for the fear of failure domain as a whole is 3.37, with a medium evaluation degree.

The researcher attributes this result to the fact that the continuous wandering of minds of the students makes them tired, due to the states that affect them as a result of fear of failure to perform well. They have negative thoughts that they will fail to perform, and find it difficult to control their behaviour during performance due to their feelings of a lack of security regarding their self-concept.

Results related to the second question: Are there statistically significant differences (at the

Table 8: *Independent samples T-test according to place of residence*

Variable	City		Village		T	Sig.
	Mean	SD	Mean	SD		
Psychological stress	3.18	0.67	3.56	0.60	2.28	0.03*
Dread of devices	2.88	0.79	3.37	0.84	2.20	0.03*
Loss of control	2.97	0.86	3.42	0.93	1.85	0.07
Fear of failure	3.14	0.84	3.51	0.84	1.62	0.11
Tool as a whole	3.06	0.66	3.48	0.68	2.30	0.02*

* Statistically significant at the level of significance $\alpha \leq 0.05$.

Table 8 shows that there are statistically significant differences at the significance level $\alpha \leq 0.05$ for the domains psychological stress, dread of devices and the tool as a whole, as the T values are significant (0.03, 0.03 and 0.02, respectively). Reviewing the means of the domains, shows differences in favour of the village as place of residence, as the mean score for village is higher than for city. The results indicate no statistically significant differences at the significance level $\alpha \leq 0.05$ for the domains loss of control or fear of failure, as the

significance level $\alpha \leq 0.05$) in the sources of anxiety that face gymnastics students in the Department of Physical Education at Al al-Bayt University, according to the study variables (place of residence, cumulative average, academic year)?

To answer this question, means and standard deviations of the responses of the sample members to all domains and the study tool as a whole are calculated according to the study variables (place of residence, cumulative average, academic level). One-way analysis of variance (ANOVA) is applied to all domains and the study tool as a whole according to the study variables (cumulative average, academic level). The independent samples T-test is applied to the domains and the tool as a whole according to the variable place of residence. The following is a presentation of the results.

T values are not statistically significant (0.07 and 0.11, respectively). However, this indicates that the female students in the village are more exposed to sources of anxiety. The researcher attributes this result to the fact that female students in the city have greater opportunities to deal with sports equipment through the possibility of participating in training courses at fitness centres, which makes them more able to overcome the sources of anxiety they face.

Table 9: ANOVA test according to academic year

Domain	Academic level	Mean	SD	Source	Sum of squares	D F	Average of squares	F	Sig.
Psychological stress	1st year	4.25	0.72	Between groups	3.56	3	1.19	3.13	0.03*
	2nd year	3.04	0.88	Within groups	20.51	54	0.38		
	3rd year	3.19	0.65	Total	24.08	57			
	4th year	3.50	0.58						
Dread of devices	1st year	4.22	0.29	Between groups	3.47	3	1.16	1.66	0.19
	2nd year	3.33	1.41	Within groups	37.76	54	0.70		
	3rd year	3.11	0.88	Total	41.24	57			
	4th year	3.13	0.81						
Loss of control	1st year	4.25	0.50	Between groups	10.29	3	3.43	4.83	0.00*
	2nd year	1.75	0.53	Within groups	38.38	54	0.71		
	3rd year	2.94	0.96	Total	48.67	57			
	4th year	3.42	0.80						
Fear of failure	1st year	4.59	0.17	Between groups	7.65	3	2.55	4.07	0.01*
	2nd year	2.56	0.31	Within groups	33.84	54	0.63		
	3rd year	3.09	0.90	Total	41.49	57			
	4th year	3.47	0.76						
Tool as a whole	1st year	4.32	0.28	Between groups	4.86	3	1.62	3.79	0.02*
	2nd year	2.72	0.80	Within groups	23.07	54	0.43		
	3rd year	3.09	0.75	Total	27.92	57			
	4th year	3.39	0.61						

* Statistically significant at the level of significance $\alpha \leq 0.05$

It appears from Table 9 that there are no statistically significant differences at the significance level $\alpha \leq 0.05$ in the responses of the sample to the domain dread of devices according to the variable academic level, as the F values are not statistically significant (0.19). On the other hand, there are statistically significant differences at the significance level

$\alpha \leq 0.05$ in the responses to the domains psychological stress, loss of control, fear of failure and the tool as a whole, according to the variable academic level, as the F values are a statistically significant (0.03, 0.00, 0.01 and 0.02, respectively). To identify the sources of these differences, the Scheffe method is applied for spatial comparison, as shown in Table 10.

Table 10: Scheffe method for spatial comparison according to academic level.

Domain	Academic level	Mean	1st year	2nd year	3rd year	4th year
Psychological stress	1st year	4.25		0.75*	1.06*	1.21*
	2nd year	3.50			0.31*	0.46*
	3rd year	3.19				*0.15
	4th year	3.04				
Loss of control	1st year	4.25		0.83*	1.31*	2.5*
	2nd year	3.42			0.48*	1.67*
	3rd year	2.94				*1.19
	4th year	1.75				
Fear of failure	1st year	4.59		1.12*	*1.50	2.03*
	2nd year	3.47			0.38*	0.91*

	3rd year	3.09				*0.53
	4th year	2.56				
Tool as a whole	1st year	4.32		0.93*	1.23*	*1.60
	2nd year	3.39			*0.30	0.67*
	3rd year	3.09				*0.37
	4th year	2.72				

* Statistically significant at the level of significance $\alpha \leq 0.05$.

The results shown in Table 10 indicate that the sources of difference are between the first year of the academic level and each other year (second, third and fourth) in favour of the first year, which shows that anxiety among female

students decreases with their increasing academic level. The researcher attributes this to the fact that students become accustomed to the devices and become more confident in their abilities to use them.

Table 11: ANOVA test according to cumulative average (GPA)

Domain	Average	Mean	SD	Source	Sum of squares	D F	Average of squares	F	Sig.
Psychological stress	67.99 or less	3.52	0.56	Between groups	0.53	3	0.18	0.41	0.75
	68-75.99	3.39	0.58	Within groups	23.54	54	0.44		
	76-83.99	3.48	0.77	Total	24.08	57			
	84 or more	3.22	0.49						
Dread of devices	67.99 or less	3.33	0.89	Between groups	3.79	3	1.26	1.82	0.15
	68-75.99	2.93	0.76	Within groups	37.45	54	0.69		
	76-83.99	3.43	0.96	Total	41.24	57			
	84 or more	2.84	0.39						
Loss of control	67.99 or less	3.27	0.91	Between groups	0.49	3	0.16	0.18	0.91
	68-75.99	3.10	0.96	Within groups	48.18	54	0.89		
	76-83.99	3.30	1.06	Total	48.67	57			
	84 or more	3.33	0.42						
Fear of failure	67.99 or less	3.51	0.88	Between groups	0.40	3	0.13	0.17	0.91
	68-75.99	3.25	0.88	Within groups	41.10	54	0.76		
	76-83.99	3.39	0.89	Total	41.49	57			
	84 or more	3.42	0.80						
Tool as a whole	67.99 or less	3.42	0.72	Between groups	0.69	3	0.23	0.45	0.72
	68-75.99	3.19	0.71	Within groups	27.24	54	0.50		
	76-83.99	3.41	0.77	Total	27.92	57			
	84 or more	3.20	0.48						

Table 11 indicates no statistically significant differences at the significance level $\alpha \leq 0.05$ in the opinions of the sample about the domains of the tool or the tool as a whole according to the variable cumulative average (GPA), as the F values are not statistically significant. This result can be attributed to the fact that the students, whatever their cumulative average, have the same sources of stress and anxiety.

Recommendations

The researcher recommends the following based on the findings:

- The Department of Physical Education at Al al-Bayt University should hold workshops aimed at reducing students' psychological stress which affects their achievement in gymnastics and other games.
- First-year students should not enter the Physical Education specialization without taking an introductory educational course about university life, the specialization and its requirements.
- Attention should be paid to the senior students enrolled in the Department of Physical Education making their own assessment of gymnastics skills and other practical courses, not comparing them to junior students.
- Al al-Bayt University needs to have a psychologist and a counsellor in their Department of Physical Education.