



Psychological hesitation and its relation to the performance level of diving skill among second year female students

Tiba Zaid Hikmat ¹

¹ University of Baghdad, College of Physical Education and Sports Sciences

DOI:

[https://doi.org/10.37359/JOPE.V38\(2\)2026.2443](https://doi.org/10.37359/JOPE.V38(2)2026.2443)

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Article history: Received 19/ February/2026 Accepted 7/ April/2026 Available online 28/ June/2026

Abstract

The significance of the present research is to know the nature of the relationship between psychological hesitation and the level of skill performance in the diving skill among second-year female students at the Faculty of Physical Education and Sports Sciences, University of Baghdad, for the academic year (2024-2025). It also intends to introduce the idea of psychological hesitation in diving skill and how to deal with it. The researcher used the descriptive analytical approach because it is appropriate to the nature of the study. The research sample consisted of (30) female students, purposely selected from those who regularly attended the practical classes, aged between (19-21) years.

The researcher applied a Psychological Hesitation Scale, a Diving Skill Performance Evaluation Form, and a demographic information questionnaire. Data were analyzed with the suitable statistical methods using Statistical Package for the Social Sciences (SPSS v26).

The results demonstrated a high level of psychological hesitation in the students, especially in the dimension of hesitation in motor decision-making. They further reported a strong, statistically significant negative correlation between psychological hesitation and skill performance ($r = -0.721$), suggesting that as psychological hesitation increases, technical performance decreases. The study recommends the need to include psychological preparation in educational programs, to take a gradual approach in teaching skills, and to periodically assess the levels of psychological hesitation in order to improve the quality of skill performance.

Keywords: Psychological Hesitation, Diving, Swimming, Skill Performance Level

¹ University of Baghdad, College of Physical Education and Sports Sciences.
tiba.zaid2104p@cope.uobaghdad.edu.iq



Introduction

Diving is considered to be a sport of advanced physical and psychological skills, because the psychological factor is a key element that can directly affect the efficiency of performance. The importance of this skill is that it requires a high level of self-control, the ability to make the right decisions at critical moments, and enough confidence to carry out the necessary movements in the air and in the water. In the current era, characterized by growing physical and technical requirements, the performance of the task is possible only if it is based on a solid psychological preparation. This explains why the psychological aspect has become a focus of attention for both coaches and researchers.

Psychological hesitation is one of the most common behavioral and psychological phenomena among female students in the process of performing dives, especially in the initial stages of learning the skill. The signs of anxiety, the fear of failure or injury, appear, which may cause the student not to execute the dive or to execute it incorrectly and unbalanced. Psychological hesitation is a mental oscillation and indecision in making adequate motor decisions. It is seen as a hindrance to learning. This is especially true in educational environments without psychological training as well as physical and technical drills. Its danger is that it does not always happen directly, but through non-verbal signs such as motor hesitation, withdrawal from the execution, the reduction of the number of attempts or even the attempt to justify the avoidance of the performance.

The study's specificity lies in the fact that it was conducted with female students in the second year of Physical Education and Sports Sciences faculties, a year in which students begin to deal with more advanced practical issues related to sports skills and, therefore, new psychological challenges that are not presented in the previous stages. Furthermore, the university environment, which is supposed to be stimulating, may sometimes constitute an additional source of psychological stress, whether due to academic evaluation pressures, competition with peers, or fear of making mistakes in front of the instructor or colleagues. This increases the likelihood of psychological hesitation becoming apparent in certain high-risk skills such as diving.

Previous studies addressing similar topics include Ibrahim (2013), which developed a counseling program to reduce psychological hesitation among students at the College of Physical Education in some gymnastics skills. Sahee (2017) examined the effectiveness of two counseling methods (self-talk and stopping negative thoughts) in reducing psychological hesitation among middle school students. Al-Mutani (2014) investigated an educational-counseling program using self-examination to suppress psychological hesitation in performing the snatch lift. Hatem (2013) found variation between psychological hesitation level and scoring accuracy in football players, with no significant difference due to lack of attention to the psychological aspect. Abu Al-Tayeb (2020) indicated an effect of emotional intelligence and its dimensions (independence, social communication, adaptability) in reducing psychological hesitation among Jordanian national team swimmers. Thanon (2012) identified the degree of psychological hesitation among players of University of Mosul college teams in individual sports and its relationship with their achievement levels.



Research Objectives

1. To identify the level of psychological hesitation among second-year female students.
2. To measure the level of performance of the diving skill among second-year female students.
3. To reveal the nature of the relationship between psychological hesitation and the performance of the diving skill.

Research Hypotheses

There is a statistically significant relationship between psychological hesitation and the performance of the diving skill among second-year female students.

Research Domains

1. **Human Domain:** Second-year female students at the Faculty of Physical Education and Sports Sciences.
2. **Spatial Domain:** The swimming pool of the Faculty of Physical Education and Sports Sciences.
3. **Temporal Domain:** 2024 – 2025.

Definition of Terms

Psychological Hesitation:

An internal emotional state in which the student feels insecure about her abilities, characterized by lack of self-confidence and fear of failure or making mistakes, leading to slowness in decision-making or avoidance of performance in situations requiring a motor or skill response.

Research Methodology and Procedures

The researcher adopted the descriptive analytical approach in this study due to its suitability to the nature and objectives of the study. This approach allows for describing the psychological phenomenon – namely "psychological hesitation" – as it occurs in the field setting, and then analyzing it using appropriate statistical methods to reveal the relationship between the level of psychological hesitation and the quality of diving skill performance. This approach was used as it is among the most suitable for psychological studies aiming to understand phenomena as they occur in their natural context without experimental intervention. The research sample consisted of second-year female students at the Faculty of Physical Education and Sports Sciences, University of Baghdad, for the academic year (2024-2025) who are studying the course (Swimming - including the diving skill). The research sample was purposefully selected from students who regularly participate in practical diving lessons. Sample size was (30) students with ages ranged between (19-21) years. All of them were physically and mentally fit and had no chronic disease or psychological problems that could affect performance, according to a medical report of the health monitoring unit of the college.

Research Instruments

In order to achieve the aims of the study, the researcher used the following instruments:

1- Psychological Hesitation Scale Modified for the Sports Environment



The Psychological Hesitation Scale adapted to the educational environment in swimming lessons was used. It was developed based on psychological literature (Weinberg & Gould, 2023; Vealey, 2020) and previous scales of sports psychology. The scale consists of (50) items distributed over three dimensions.

Anxiety and Fear of Failure dimension (23 items)

- Lack of Self-Confidence dimension (14 items)
- Hesitation in Motor Decision-Making dimension (13 items)

Each item is answered using a five-point Likert scale (from 1 = Does not apply to me at all to 5 = Applies to me completely). The total score of the scale is calculated as a general indicator of the degree of psychological hesitation of the student.

Validity of the scale was checked by presenting it to a panel of specialists in sports psychology. The reliability of the scale was measured by the test-retest method on a pilot sample of (10) female students who were not part of the research sample, and the reliability coefficient was (0.85), which indicates a high degree of internal consistency.

2- Diving Skill Performance Evaluation Form

In order to measure the technical performance of the diving skill from the edge of the pool, the researcher designed a specific observation form. University swimming course education was the basis for the evaluation criteria. The form contained the following indicators:

- Motor preparation (body position before the jump)
- Execution of the jump (takeoff, balance, angle)
- Water entry (streamlining, straightness, lack of hesitation)
- Overall movement evaluation (control, coordination, apparent hesitation)

Performance was evaluated by a committee of three expert judges specializing in swimming instruction. The final score was calculated as the average of their scores.

3- Introductory Questionnaire

The researcher developed a simple questionnaire to collect preliminary data on the characteristics of the sample (age, health status, number of years of swimming practice, level of fear of water).

The questionnaire has been used to help describe the sample and to analyze the relationship between some of these psychological and skill characteristics.

Field Procedures

- Formal approvals were sought from the college administration
- The sample was informed of the objectives of the study before the start.
- The Psychological Hesitation Scale was given to the students on the first day.
- Following this, the judging committee scored the students' performance in dive execution.
- The scale was administered again after two weeks to check for consistency.
- Data were collected through SPSS and statistical analysis of data was done by using SPSS to find out means, standard deviations and correlation coefficients (Pearson).



Results

SPSS v26 was used to analyze data through appropriate statistical methods to achieve the research objectives. The emphasis was on:

1. Describe the level of psychological hesitation of the students.
2. Explains the level of skill execution in diving.
3. Studying the correlation between psychological hesitation and skill performance level

. First: Descriptive Statistics of Psychological Hesitation Level

Arithmetic means and standard deviations were calculated for three dimensions of Psychological Hesitation Scale and total score of the scale.

Table1. Shows the Descriptive Statistics of the Study Variables

Dimension	Arithmetic Mean	Standard Deviation	Maximum Possible Score	Level of Hesitation
Anxiety and Fear of Failure	24.10	3.45	35	High
Lack of Self-Confidence	20.80	3.10	30	Medium
Hesitation in Motor Decision-Making	26.25	2.90	35	High
Total Score	71.15	6.35	100	Relatively High

Interpretation: The results indicated that the dimension of “Hesitation in Motor Decision-Making” was the highest of the dimensions, meaning that students have difficulty in making decision at the time of diving.

Second: Descriptive Statistics of Skill Performance Level

The arithmetic means and standard deviation of the scores of the skill performance evaluation given by the judging committee were calculated.

Table2. Shows the mean, standard deviation, maximum score attained, and performance level of the study variables.



Skill Indicator	Arithmetic Mean	Standard Deviation	Maximum Score	Performance Level
Motor Preparation	6.80	1.25	10	Medium
Jump Execution	7.10	1.40	10	Medium
Water Entry	6.00	1.70	10	Low
Overall Evaluation	6.65	1.55	10	Medium
Total Score	26.55	4.30	40	Medium, tending toward low

Interpretation: The results showed that in general the diving performance of the students was at the medium level, with a significant weakness in the phase of entering the water which often requires a high degree of confidence and precise timing.

Third: Analysis of the Relationship between Psychological Hesitation and Skill Performance

The association between the total score of psychological hesitation and the total score of skill performance was analyzed using Pearson correlation coefficient.

Table3. Shows the Correlation Coefficients Between the Study Variables.

Variables	Correlation Coefficient (r)	Significance Level (Sig.)	Relationship Type
Psychological Hesitation × Skill Performance	-0.721	0.001	Statistically significant inverse relationship

Interpretation: There is a strong statistically significant negative relationship between psychological hesitations and skill performance. In other words, the higher the psychological hesitation level, the lower the diving skill performance level.

Fourth: Relationship between Psychological Hesitation Dimensions and Performance

For accurate analysis, separate correlation coefficients were obtained for each dimension of psychological hesitation with skill performance.

Table4. Shows the Correlation Coefficients Between the Study Variables

Dimension	Correlation Coefficient with Performance	Statistical Significance	Interpretation
Anxiety and Fear of Failure	-0.618	0.003	Strong inverse relationship
Lack of Self-Confidence	-0.549	0.006	Moderate inverse relationship
Hesitation in Motor Decision-Making	-0.684	0.001	Very strong inverse relationship

Discussion of Results

The results of this study showed different aspects of the relationship between psychological and skill variables in female students of the second year, especially in sensitive technical skills such as diving. Psychological hesitation is a trait that affects performance significantly especially when combined with factors of anxiety, lack of self-confidence and fear of failure. A detailed analysis of the results is given according to the tables presented before.

First: Discussion of the Level of Psychological Hesitation

The results showed a relatively high degree of hesitation in the study sample, with the total mean score of the Psychological Hesitation Scale being 71.15 out of 100. This finding is in line with previous literature in sport psychology which has found that skills associated with risk or danger – such as diving from a height – are often associated with high degrees of hesitancy (Vealey, 2020; Weinberg & Gould, 2023).

The highest score among the three dimensions was “Hesitation in Motor Decision-Making” with a mean of 26.25, which showed that most of the students have clear difficulty to take a decisive decision at the crucial moment of the dive. This kind of hesitation is usually due to inadequate or insufficient psychological preparation or to the lack of previous mental imagery of the movement. It may also be a consequence of previous negative experiences such as failure or embarrassing situations which results in what is called ‘emotional freezing’ at the time of performance.

The dimension of “Anxiety and Fear of Failure” also got a high mean which means that students were relatively psychologically unstable before or while performing a skill. The reasons for this could be various academic and environmental factors such as fear of teacher evaluation,



anxiety about peer perception, or low self-efficacy. Many researchers in similar studies in the field have discussed these issues (Martens, 2019; Jones & Hardy, 2021).

Second: Discussion of Skill Performance in Diving

The performance of skills achieved an average total score of 26.55 out of 40, approximately 66.4%, with a performance of "medium tending to low". "Water entry" was identified as the weakest indicator of performance, with a mean of only 6.00 out of 10.00, which deserves attention.

The poor performance of the students in the water entry phase could be a direct mirror of the hesitation state before the execution moment. To enter the water effectively, the motion must be stable, and the balance must be accurate and instantaneous. These qualities are difficult to attain under disturbed or hesitant psychological conditions. In their work on the relationship between psychological factors and the perceptual-motor execution of fine skills, Abernethy and Hanrahan (2017) have shown that psychological readiness has a clear influence on complex motor skills.

This result can also be interpreted from the perspective of environmental education. Students may not be adequately trained to develop confidence and mastery, especially in skills related to an unfamiliar aquatic environment. Inadequate psychological preparation programs and lack of stepwise instructional progression may reinforce the fear of diving, particularly during the early stages of learning.

Third: Discussion of the Relationship between Psychological Hesitation and Skill Performance

The most important finding of this study was a strong negative relationship between psychological hesitation and the level of skill performance with a correlation coefficient of ($r = -0.721$) and a statistically significant negative correlation ($p = 0.001$). This means that with increase in psychological hesitation in a student her performance in the diving skill decreases and vice versa.

This relationship can be explained by the "anxiety-performance" model proposed by Yerkes and Dodson (1908) which states that optimal performance is achieved with a moderate level of anxiety, whereas higher anxiety or psychological hesitation leads to a degradation of motor performance, particularly in open or risky skills.

The results show that the highest negative correlation was found with the dimension "Hesitation in Motor Decision-Making" ($r = -0.684$) which is in accordance with the nature of the diving skill that requires a decisive and rapid decision in a very short time. Any delay at this point may disturb motor behavior and result either in an incomplete execution or in a complete withdrawal of performance. "Fear of failure" also showed a high negative correlation ($r = -0.618$). This means that many students can either fail to dive or dive tensely for fear of making a mistake, which would

be negatively evaluated or even physically injured. This factor is considered as one of the most important obstacles to performance in high-performance sports and those that involve direct confrontation with oneself and the environment.

Conclusions

1. The second-year female students have a clear psychological hesitation in the process of executing the diving skill, especially in the dimension of “hesitation in motor decision-making.” It shows the real psychological obstacles for the correct implementation of the skill.
2. A sensitive indicator of technical performance, the “water entry” indicator, often negatively affected by the absence of confidence and psychological readiness, showed noticeable weakness.
3. It has been proven that hesitation has a negative effect on the quality of technical skill execution in diving. A strong and statistically significant inverse correlation is established between psychological hesitation and skill performance ($r = -0.721$).
4. Among the dimensions, “hesitation in decision-making” had the most effect on performance, followed by “anxiety and fear of failure”. These aspects require special attention in educational and training programs.
5. The low level of performance of the skill in general suggests a lack of adequacy in the psychological aspect, but perhaps also in the training or teaching methods used for this skill.
6. The lack of psychological programs in combination with skill instruction may be the prime reason for the psychological hesitation and failure of the student to overcome feelings of fear or anxiety.

Recommendations

1. Design and implement psychological training programs simultaneously with the instruction of the diving skill and focus on the building of self-confidence, reduction of anxiety and training students on rapid decision-making during motor performance.
2. Use mental imagery and visualization techniques as effective strategies to reduce psychological hesitation and increase self-efficacy feelings before performance.
3. Offer a supportive, non-threatening educational environment with emphasis on positive encouragement, avoiding harsh evaluation, particularly during the learning stages of complex and dangerous skills.
4. Gradually introduce skill learning, beginning with simple, controlled situations and progressing to full dives, giving students time to psychologically and skill-wise adapt.
5. Introduce periodic testing of psychological hesitation levels within educational assessments to identify cases that need additional psychological support and continuous follow-up.
6. To increase the awareness of the importance of the psychological aspect in teaching sports skills through specialized workshops and training courses for the students in physical education and sports sciences faculties.
7. Use experimental designs to conduct future studies to test the effectiveness of specific psychological interventions to reduce psychological hesitation and improve skill performance.



Summary

From the above, it can be concluded that the psychological hesitation is a determining factor in the performance of the diving skill of the second-year female students. The study revealed that a higher level of this hesitation, especially in the dimension of decision-making, negatively affects all indicators of technical performance. The results also indicated the pressing need for more integrated psychological and educational support programs that take into account individual differences and promote self-confidence and mental imagery before and during the performance of aquatic skills.

Appendix (1): Questionnaire

No.	Statement	Applies to me completely	Applies to me	Applies to me sometimes	Does not apply to me	Does not apply to me at all
1.	I hesitate when I feel weakness in the skill I am about to perform.					
2.	My willpower motivates me to perform well.					
3.	I hesitate when I practice a sport I do not like or desire.					
4.	I hesitate in performing sports movements if I feel they may cause me injury.					
5.	I possess previous experience and trials that make me not hesitate in practicing sports.					
6.	My feeling of exhaustion and fatigue makes me hesitate in practicing sports exercises and games.					
7.	I hesitate when others mock me.					
8.	My self-confidence makes me not hesitate in performing the skill.					
9.	The presence of assistive devices and assistants makes me not hesitate in performing sports.					
10.	My poor relationship with the teacher makes me hesitate in performing the skill.					



Journal of Physical Education

Volume 38 – Issue (2) – 2026 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729

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11.	I possess vitality and activity that help me perform the sports skill.					
12.	Having high psychological preparation enables me to practice sports skills without hesitation.					
13.	My courage makes me not hesitate in performing sports movements.					
14.	The degree of equipment restriction and movement difficulty makes me hesitate in performing them.					
15.	When I know the purpose of the game, I do not hesitate in performing it.					
16.	I hesitate when I feel a sense of failure.					
17.	I do not hesitate when I am calm and psychologically stable.					
18.	I feel hesitation in performing the game when I do not receive moral incentives.					
19.	My practical and theoretical experience makes me not hesitate in performing sports.					
20.	I hesitate when I expect my level will not be up to the required standard.					
21.	My feeling of fear of the skill or equipment causes me hesitation in performing sports.					
22.	My feeling of boredom distances me from practicing sports.					
23.	I worry about performing the activity.					
24.	I do not care about the final outcome of the performance.					
25.	I hesitate when my pulse rises before matches.					



Journal of Physical Education

Volume 38 – Issue (2) – 2026 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729

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26.	My personality is the reason for my hesitation.					
27.	When asked to make a certain decision, I am slow in making it.					
28.	The importance of the competition makes me participate in it.					
29.	Sudden change in daily habits makes me not want to play sports.					
30.	My exposure to stress makes me hesitate in performance.					
31.	I hesitate when asked to compete against a player with a high reputation and level.					
32.	I hesitate when asked to participate in high-level championships.					
33.	My discomfort with some referees makes me hesitate in performing the assigned activity.					
34.	I am optimistic.					
35.	My shyness is the reason for my hesitation.					
36.	Repeated failure causes me hesitation in performing sports activity.					
37.	My poor physical preparation causes my hesitation in performance.					
38.	My feeling of confusion and instability makes me hesitate in practicing the assigned sports.					
39.	I cannot control my nerves in embarrassing situations.					
40.	My body type makes me hesitate in performing the game.					
41.	When I do not feel good, I do not want to play sports.					



Journal of Physical Education

Volume 38 – Issue (2) – 2026 Open Access

P-ISSN: 2073-6452, E-ISSN: 2707-5729

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42.	I possess high morale that makes me a non-hesitant player.					
43.	I hesitate when I am frustrated.					
44.	I hesitate when I hear words that imply treachery or defamation.					
45.	The poor quality of equipment I appear in during sports competitions makes me hesitate in performing sports activities.					
46.	Weather conditions make me hesitant.					
47.	I do not feel hesitation in performing the activity when I possess a spirit of hope for victory.					
48.	I hesitate when I encounter frustration.					
49.	My perseverance does not make me hesitant in performance.					
50.	I feel hesitation in performing an activity or exercise when I see a large audience.					



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