Effect of Yogilates exercises on sport confidence and the performance of some basic skills in rhythmic gymnastics among female students

Efecto de los ejercicios de Yogilates en la confianza deportiva y el rendimiento de algunas habilidades básicas de gimnasia rítmica en estudiantes femeninas

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Abstract

Introduction: Yogilates is a type of fitness exercise that integrated somatic yoga and Pilates into a system that has its own pro. Objective: Investigated effect of yogilates exercises in two directions: psychological effect on (sports confidence) and physical effect on (Leaps element) in rhythmic gymnastics, on female university students.
Methodology: Experimental approach used, two Group Design (control, experimental) pre and post-test.
Results: The experimental group showed a significant increase in Sport Confidence from M = 77.25 to 93.65, (t(19) = 11.15, p = .001, d = 2.49). Large effect sizes were recorded in leaps: Stag Leap (t = 14.10, d = 3.15), Cat Leap (t = 12.70, d = 2.84), and Scissors Leap (t = 10.78, d = 2.41). Post-test comparisons revealed the experimental group significantly outperformed the control in all variables. These findings demonstrate the strong physical and psychological benefits of the Yogilates exercises.
Discussion: Numerous studies have examined the effects of yoga and Pilates separately, and the results of these studies indicate the effectiveness of the exercises on both physical and psychological aspects. This study confirms the previous results, but uses the effects of both types of exercises together as an independent system.
Conclusions: yogilates exercises, scheduled over 15 weeks, twice per week, (35) minute sessions, showed positive changes in the physical and psychological aspects of female university students in Baghdad, Iraq.
This study contributed to adding new findings to the sport field, using yogilates exercises, which have not been previously studied in sport, especially rhythmic gymnastics.

Keywords

Yogilates; yoga; pilates; rhythmic gymnastics; leap; sport confidence.

Resumen

Introducción: Yogilates es un tipo de ejercicio de fitness que integra yoga somático y pilates en un sistema con sus propias ventajas.
Objetivo:Investigar el efecto de los ejercicios de Yogilates en dos direcciones: efecto psicológico (confianza deportiva) y efecto físico (elemento de saltos) en gimnasia rítmica, en estudiantes universitarias. Metodología: Se utilizó un enfoque experimental, con un diseño de dos grupos (control, experimental) pre y post-prueba.
Resultados: El grupo experimental mostró un aumento significativo en la confianza deportiva de M = 77,25 a 93,65 (t(19) = 11,15, p = 0,001, d = 2,49). Se registraron grandes tamaños del efecto en los saltos: Salto de Ciervo (t = 14,10, d = 3,15), Salto de Gato (t = 12,70, d = 2,84) y Salto de Tijera (t = 10,78, d = 2,41). Las comparaciones posteriores a la prueba revelaron que el grupo experimental superó significativamente al grupo control en todas las variables. Estos hallazgos demuestran los importantes beneficios físicos y psicológicos de los ejercicios de Yogilates.
Discusión: Numerosos estudios han examinado los efectos del yoga y el pilates por separado, y los resultados de estos estudios confirman la eficacia de los ejercicios tanto en los aspectos físicos como psicológicos. Este estudio confirma los resultados previos, pero utiliza los efectos de ambos tipos de ejercicios conjuntamente como un sistema independiente.
Conclusiones: Los ejercicios de yoga, programados durante 15 semanas, dos veces por semana, en sesiones de 35 minutos, mostraron cambios positivos en los aspectos físicos y psicológico de estudiantes universitarias en Bagdad, Irak.
Este estudio contribuyó a aportar nuevos hallazgos al ámbito deportivo, utilizando ejercicios de yoga, que no se habían estudiado previamente en el deporte, especialmente en la gimnasia rítmica.

Palabras clave

Yogilates; yoga; pilates; gimnasia rítmica; salto; confianza en el deporte.

Introduction

Sport has a possess nature because it intricately combines physical, psychological and social components, making it a unique field of human Endeavour for research, exploration and development.

As is Rhythmic Gymnastics.

Over the past years, human Endeavour have culminated in the study of various aspects of rhythmic gymnastics, such as psychological aspect (Martins et al., 2024), physical aspect (Polevoy & Fuentes-Barría, 2024), health aspect (de Oliveira et al., 2021; Mischenko et al., 2023), body difficulties aspect (Batista et al., 2019; Coppola et al., 2025; Örs, 2020), and history of rhythmic gymnastics (Cleophas & Visser, 2024; Wieser & Krüger, 2019).

Rhythmic Gymnastics is an Olympic female sport, but there are local or national competitions in which men participate. These versions are unofficial at the global level and are not recognized in the Olympic Games or World Championships, but they are official at the local level in countries such as Spain and Japan(Freundt & Matus, 2025). and in other countries semi-officially such as Chile(Freundt & Matus, 2024). However, rhythmic gymnastics remains is essentially all about the female form as the International Gymnastics Federation recognizes Rhythmic Gymnastics as a female's sport only in its international competitions.

RG is an “aesthetic sport predicated on the interrelationship of technical virtuosity and artistic prowess. Fusing together sport and art, the sport borrows techniques from artistic gymnastics, dance, and classical ballet, Gymnasts perform four 90 second routines that incorporate the hoop, ball, clubs, and ribbon, respectively, with musical accompaniment” (Mazumdar, 2022, p. 5).

Rhythmic Gymnastics program competitions feature two main categories: (individual, group), both involving routines with apparatus. Program for junior and senior individual gymnasts consists of 4 exercises, the length of each exercise is from 1’15” to 1’30”. The program for junior and senior groups consists of 2 exercises, The length of each exercise is from 2’15” to 2’30” (Code of Points, 2025-2028).

Rhythmic Gymnastics has a complex judging system that divides the evaluative process into three aspects: Difficulty, execution and artistic value. The difficulty aspect includes two elements: “Difficulty of Body (DB), involving Dynamic elements with rotation (R), Difficulty of Apparatus (DA)”(Code of Points, 2025-2028, p. 22). Difficulty of Body (DB) define as “elements are jump/leap, balance, and rotation elements from the Body” (Code of Points, 2025-2028, p. 23).

The current study investigates the jump/leap elements because jumps in rhythmic gymnastics are master body elements that need to be executed as part of choreography. Also it’s a key element contributing to aesthetics performance. Some consider rhythmic gymnastics “can be defined as a height leap depending sport”(Di Cagno et al., 2008, p. 342).

Rhythmic Gymnastics is not merely a physical activity aimed at enhancing fitness and technical proficiency; it is a holistic discipline that also contributes to the mental and psychological development of gymnasts. Like other sports, it both influences and is influenced by various psychological variables. This interplay between physical and psychological dimensions highlights the fact that sports performance depends not only on athletes' motor skills but also on their psychological state. Even highly trained athletes and teams may underperform in competitions if psychological factors are not adequately considered. The psychological state plays a crucial and dynamic role in physical education and sports, as it directly interacts with the athlete’s physical condition.

From the researcher's perspective , it is the key to sports success in our current era, which we can call the "Era of awareness of the human psyche", Therefore, those whoare able to regulate and control their psychological state are more likely to achieve success, particularly in their specialized sport.

One of the important psychological and personality variables, Confidence, has long attracted the attention of researchers in sport psychology due to its apparent link to successful athletic performance, terms such as self-efficacy, self-confidence, self-esteem, sport confidence, are different terms but related in the general context of meaning (Lochbaum et al., 2022).

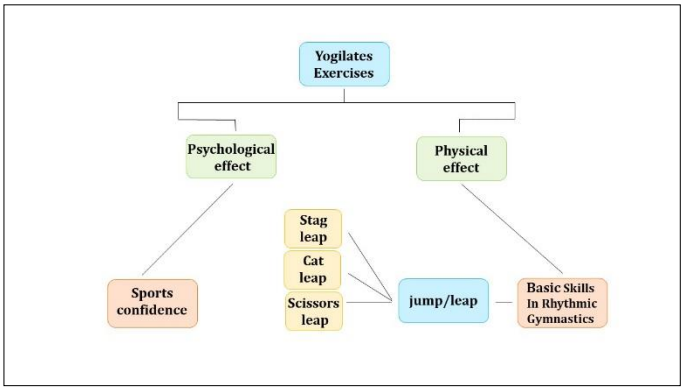
Sport-confidence is a form of confidence, it can be defined as "the athlete's level of certainty they will have a successful performance in training and competition, considering their own resources and ability. It is characterized by the athlete's conviction they will be successful in moments where there is a high success expectation" (Vealey, 1986, p. 222), "The sport-confidence separated into two constructs termed: trait sport-confidence (the degree of certainty one usually possesses about their ability to be successful in their sport), and state sport-confidence (the belief in one's ability to be successful in their sport at a particular moment)" (Ricketts, 2024, p. 5).

From the above, we find that the success of a rhythmic gymnast depends on a harmonious combination between, what she is physically proficient in, and what she is psychologically confident in, To achieve that, the researcher uses yogilates exercises. Yogilates is a type of fitness exercise that combines somatic yoga and Pilates, it was designed in 1997 by a Pilates instructor (Jonathan Urla) who intended to integrate both sports into a system that has its own pros. Traditional yoga focuses on breathing, flexibility, and quieting the mind, while Pilates work focuses on strength and power from the core. Yogilates unifying principle of yoga and the powerful value of Pilates together into one system, providing a more balanced and complete exercise experience than practicing either separately. With regular practice, will progress rapid and safe toward a stronger, more flexible body, as well as achieving a state of deep psychological relaxation(KUMAR, 2017).

Yogilates includes more than 90 poses like cat back, child's pose, sun salutation, tree and warrior pose, breathing techniques like: Symmetrical Rib-Cage, Pilates Lip, and Ujjayi Breathing (Urla, 2003), "yogilates routines contain a reasonable amount of exercises to be performed at a moderate speed for a limited number of repetitions. In this way, you will avoid the common pitfalls of working out obsessively, including burnout, injury, and stress" (Urla, 2003, p. 15).

The importance of the study evident in the use of a new type of exercise that has never been used before in any sport. The aim of the study is to investigate effect of yogilates exercises on female students in two directions: 1.Psychological effect on Sport confidence : as a state. From analyzing the previous definition in line with the concept of this study, sports confidence as a state refers to the degree of certainty a (student) has regarding her success at a particular moment (performing skills in the practical exam.2.Physical effect on (Jumps/Leaps) element in rhythmic gymnastics, as shown in the figure (1).

Figure 1. Show Yogilates Exercises Effect.

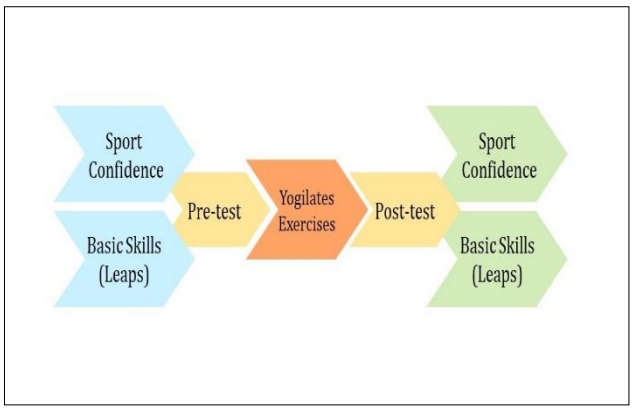


Method

The experimental method was adopted in this research, which aims to "discover a correlation between the dependent variable and the independent variable. Data in an experimental study must be quantifiable. It is also known as intervention research or group comparison research"(Ghanad, 2023, p. 3796).

The researcher used the experimental method with two equal groups design (control-experimental). The experimental group is the group of students who applied the Yogilates exercises, as shown in figure (2), while the control group is the group that continued to apply the curriculum in the traditional way.

Figure 2. Show illustrates the practical steps for the experimental group who applied the Yogilates exercises.



Participants

The research community, which was represented by (45) second-year female students at the Heritage University, College of physical education and sports sciences, Iraq. Randomly divided into (2) groups of (20) students by lottery, (5) Students were also selected for the exploratory sample, those students represented (100) % of the research community.

Procedure

The first step was to ensure the participants homogeneity in variables (height, weight, and age). The skewness coefficient was (±3), indicating a normal distribution, as showen in table (1). The researcher then conducted exploratory experiment on (5) female students from outside the two groups. The aim was to identify any obstacles the researcher might encounter when implementing the main experiment, including requirements for verifying the response time on the (SCI) scale which was (7 minute), and the evaluation of basic skills. The researcher also verified the scientific coefficients (reliability and objectivity) that all of were (r≥0.9).

Table 1. Shows Homogeneity in variables (height, weight, and age)

Variables	Unit of M	Mean	Medium	SD	Kurtosis	Distribution
Age	Yr	19.411	20	1.532	-1.211	normal
Length	Cm	160.26	161	3.601	-0.543	normal
weight	kg	60.33	63	6.014	-1.162	normal

Pre and post tests

Pre-tests were on (October 19, 2022), the two research groups (control and experimental) tested basic skills and sport confidence scale to ensure their equivalence, and the results of Independent Samples T-test were (p≥0.05), which indicates that there were no significant differences between the two groups. Therefore, any differences that will appear be attributed to the yogilates exercises.

Post-tests were on (January 31, 2023), the researcher followed the same sequence of conducting the pre-tests and under the same conditions in which they were conducted.

Instrument (Study variables)

Yogilates Exercises

Which are considered from the researcher as a method used to influence sport confidence and basic skills (Leaps) in rhythmic gymnastics (Stag, cat, scissor), were applied on (October 20, 2022) in the rhythmic gymnastics lesson.

Exercises were used that were appropriate to the students' level and served the research aim. Table (2) shows the exercises titles used, Appendix (1) shows how to perform the exercises in detail, repetitions, and the breathing techniques used.

The experimental group lesson included:

- Duration of the Yogilates exercises: 15 weeks, twice per week.
- Time: 35 minutes.
- Equipment: Mat
- Number of exercises: 36
- Fitness Level: Beginner to Advanced

Table 2. Shows yogilates exercises.

No.	Exercises	No.	Exercises
1	Easy Pose Warm-Up	19	Cat Back
2	Arm Breaths and Side Curves	20	Standing in Neutral and Knee Bends
3	Back Scoops	21	Chair Pose
4	Sternum Lifts	22	Warrior On
5	Pelvic Tilts	23	Triangle Pose
6	Single and Double Toe Touches	24	Knee Lifts and Tree Pose
7	Slow Hundred	25	Seated Spiral
8	Leg Release	26	The Hundred
9	Single Leg Lift	27	Single-Leg Stretches
10	Leg Circles	28	Double-Leg Stretch
11	Leg Circle Finish	29	Scissors (aka Single Straight-Leg Stretch)
12	Losing Your Breath (Wind Relieving)	30	Bridge with Leg Lift
13	Single Leg Stretches	31	Double-Side Leg Lifts
14	Open and Close	32	Side Leg Kicks
15	Walking with Pulses	33	Side Leg Lift
16	Knee Stirs	34	Camel and Rabbit Pose
17	Toe Raises and Balance	35	Crouch with Toe Raises
18	Single and Double Back Leg Lifts	36	Pliés to Goddess

Nota:(Urla, 2003).

Sport confidence

The researcher used the Sports Confidence Inventory (SCI) of (Vealey, 1986) translated by Muhammad Hassan Alawi(Alawi, 1998), which consists of 13 items Each item was measured on a Likert type scale, ranging from (1- 9), score ranging from the lowest (13) to highest (117). The students were asked to determine how they really feel, not how they would like to feel about their ability to succeed before doing the practical exam of basic skills.

Basic skills in Rhythmic Gymnastics (Leaps)

Stag leap

"(Take-off from one or two feet). The front leg must be maximally bent, foot close to the thigh. The legs must be 180° apart, the stag position may be horizontal and will also be accepted when the 180°position is maintained with one of the legs above and the other below a horizontal position".(Code of Points, 2025-2028, p. 75), this jump has a value of 0.20 points (Code of Points, 2025-2028).

Cat Leap

Raise one of the feet at angel (90) degree from the hip joint, so that the knee joint is at hip level, when lowering the raised leg, other leg is raised(Abd et al., 2024). This jump has a value of 0.10 points (Code of Points, 2025-2028). The researcher defines it as: jumping high, bringing the knees close to the chest, then alternating between raising the knees for a fraction of a second while landing gently on the tips of the toes.

Scissors leap

"switch of legs forward: Legs consecutively at the horizontal, this jump has a value of 0.10 points" (Code of Points, 2025-2028, p. 77). The researcher defines it as: one foot takeoff with one straight leg forward horizontally While airborne the legs switch in order to show a Split. Land on one Leg. must finish in standing position.

In rhythmic gymnastics, leap involves three fundamental phases: "takeoff, flight and the landing.The takeoff phase is substantial in terms of forward and upward direction, it can be done with one or both feet...flight phase determines the charcter of the leap. The shape of the bodt takes during flight is important for the judge's assessment" (Polat, 2018, p. 2). The main criterion for the eligibility of jump elements in choreography during competition is achieving precise and stable form, achieved through flight short time and sufficient height(Di Cagno et al., 2010). Finally, the landing phase where the kinetic energy of the body is absorbed and balance is maintained(Christoforidou et al., 2017). Each skill (jump) was evaluated on a five-point scale based on the above criteria by the Masters of rhythmic gymnastics and the assessment was Live.

Data analysis

IBM SPSS Statistics Version 30 was used for the statistical analysis of the data, where descriptive statistics and t-tests for samples (one sample, paired, independent), and cohen's d effect size were used.

Results

The researcher uses a one-sample t-test to compare the sample's arithmetic means with the hypothetical arithmetic mean of the sport confidence Inventory (SCI) to verify the level of sports confidence among female students, As shown in Table (3).

Table 3. Shows the value of the one sample T-test for Sport Confidence Inventory (SCI) Scale.

Sport Confidence Inventory (SCI)\(degree)							
Groups	Mean	Std. deviation	Test Value	n	df	T-test value	P value
All Participants (Both two group)	75.4250	6.53938	65	40	39	10.083	<.001
Control	73.6000	7.34417		20	19	5.237	<.001
Experimental	77.2500	5.17967		20	19	10.577	<.001

*Significant differences, p< .05.

As shown in Table 3, results from the one-sample t-test revealed that the overall mean score of the Sport Confidence Inventory (SCI) for all participants (M = 75.43, SD = 6.54) was significantly higher than the test value of 65, t (39) = 10.083, p < .001.

When analyzed separately, both the control group (M = 73.60, SD = 7.34) and the experimental group (M = 77.25, SD = 5.18) also demonstrated significantly higher levels of sport confidence than the test value, t(19) = 5.237, p < .001, and t(19) = 10.577, p < .001, respectively.

Notably, the experimental group exhibited the highest mean confidence score, indicating that the applied intervention (yogilates exercises) have had a positive effect on enhancing sport confidence.

Paired sample t-test use to compare the pre-post tests for the control group, as shown in Table (4).

Table 4. Shows the value of the Paired Samples T-test between the pre-post tests for the Control Group.

Control Group (n=20)					
Variable	PRE (Mean±SD)	POST (Mean±SD)	t	P value	Effect size (Cohen's d)
Stag Leap	1.80 ± 0.49	2.20 ± 0.52	5.14	.000	1.15
Cat Leap	2.32 ± 0.69	2.75 ± 0.50	4.67	.000	1.04
Scissors Leap	1.87 ± 0.62	2.12 ± 0.53	3.24	.002	.72
Sport Confidence	73.60 ± 7.34	74.80 ± 6.91	2.99	.004	.66

*Significant differences, p< .05.
Nota: The unit of measurement for all variables is (degree), df=19.

As shown in Table 4, results from the paired-samples t-test for the control group (n = 20) revealed statistically significant improvements from pre-test to post-test in all measured variables.

For Leaps performance, significant increases were observed in Stag Leap, t(19) = 5.14, p < .001, Cohen's d = 1.15, and Cat Leap, t(19) = 4.67, p < .001, d = 1.04, both representing large effect sizes (Cohen, 1988). Similarly, a significant improvement was found in Scissors Leap, t(19) = 3.24, p = .002, with a moderate effect size (d = 0.72).

In terms of Sport Confidence scores increased significantly from pre-test (M = 73.60, SD = 7.34) to post-test (M = 74.80, SD = 6.91), t(19) = 2.99, p = .004, with a moderate effect size (d = 0.66).

These results indicate that even without an intervention, the control group exhibited modest but statistically meaningful gains.

Table 5. Shows the value of the Paired Samples T-test between the pre-post tests for the experimental Group.

Experimental Group (n=20)					
Variable	PRE (Mean±SD)	POST (Mean±SD)	t	P value	Effect size (Cohen's d)
Stag Leap	2.00 ± 0.64	3.17 ± 0.73	14.10	.001	3.15
Cat Leap	2.65 ± 0.84	3.62 ± 0.82	12.70	.001	2.84
Scissors Leap	2.05 ± 0.72	3.00 ± 0.76	10.78	.001	2.41
Sport Confidence	77.25 ± 5.17	93.65 ± 8.82	11.15	.001	2.49

*Significant differences, p< .05.
Nota: The unit of measurement for all variables is (degree), df=19.

As shown in Table 5, the paired-samples t-test revealed that the experimental group (n = 20) experienced statistically significant and substantial improvements across all measured variables following the intervention (yogilates exercises).

For Leaps performance, significant enhancements were observed in Stag Leap, t(19) = 14.10, p = .001, Cohen's d = 3.15; Cat Leap, t(19) = 12.70, p = .001, d = 2.84; and Scissors Leap, t(19) = 10.78, p = .001, d = 2.41, all indicating very large effect sizes.(Sawilowsky, 2009).

Additionally, Sport Confidence scores showed a remarkable increase from pre-test (M = 77.25, SD = 5.17) to post-test (M = 93.65, SD = 8.82), t(19) = 11.15, p = .001, with a very large effect (d = 2.49).

These findings strongly suggest that the applied intervention had a powerful impact on both the physical execution of gymnastics leaps and the psychological, sport confidence. Figure (3) show the effect size for each group.

Figure 3. Values of effect size for (control-experimental) groups.

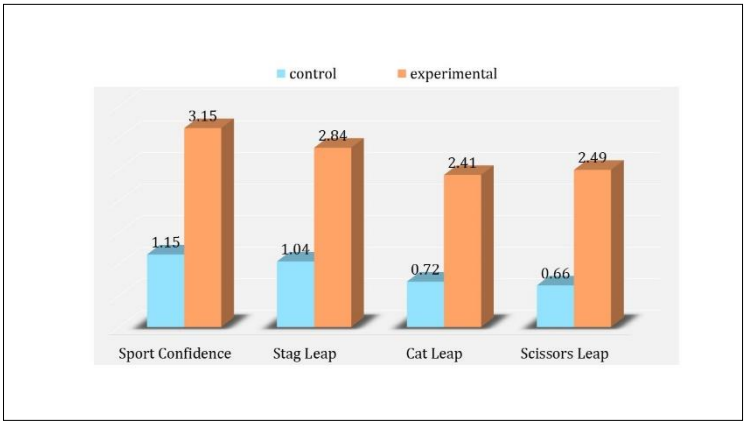


Table 6. Shows the value of the Independent Samples T-test between the experimental - control group in post test.

Variable	Differences in mean	t	P value	Effect size (Cohen's d)
Stag Leap	.97	4.85	.001	.38
Cat Leap	.87	4.05	.001	.30
Scissors Leap	.87	4.20	.001	.31
Sport Confidence	18.85	7.51	.001	.59

*Significant differences, p< .05.
Nota: The unit of measurement for all variables is (degree), df=38.

As shown in Table 6, results from the independent-samples t-test comparing post-test scores between the experimental and control groups revealed statistically significant differences across all measured variables.
The experimental group demonstrated higher performance than the control group in Stag Leap (t(38) = 4.85, p = .001, d = 0.38), Cat Leap (t(38) = 4.05, p = .001, d = 0.30), and Scissors Leap (t(38) = 4.20, p = .001, d = 0.31). These results indicate small to moderate effects of the intervention on physical skills.
Notably, a substantial difference was observed in Sport Confidence, where the experimental group significantly outperformed the control group (t(38) = 7.51, p = .001, d = 0.59), indicating a moderate effect. These findings suggest that the experimental intervention was effective in enhancing both Leaps performance and sport confidence.

Discussion

Through the past decades, numerous studies have investigated the effects of yoga and Pilates separately. On the other hand, some studies have investigated their effects together (Karatrantou et al., 2023; Lim & Hyun, 2021; Neumark-Sztainer et al., 2011), In 1997, Jonathan Orla created the Yogilates system, in 2002 published a book that included several exercises. Since then, studies have focused on yogilates as a system in itself, but from a health, not sports, perspective(Faria & de Oliveira, 2006; KUMAR, 2017; Neto et al., 2016).

This study examines yogilates effect from sport perspective, as an independent variable effect on the (Leap element) of rhythmic gymnastics, on the one hand, and on sport confidence, on the other, among university female students to enable them in terms of skill and psychological, which enhances their performance and participation in rhythmic gymnastics lesson. Rhythmic Gymnastics is a sport in which the final outcome is determined by a score issued by a panel of judges. It is highly likely that a gymnast's (student's) concern about the potential effect of their performance on the judges, therefore effect on their score and thus their self-confidence. This may indicate the importance of psychological criteria in improving competitive performance. Studying psychological aspects a crucial factor for achieving success in athletic performance (Firmansyah et al., 2024; Robles-Rodríguez et al., 2019). Also it was found that yoga exercises have a positive effect on Subjective Energy and State Self-Esteem (Golec de Zavala et al., 2017).

The results show that the values of sport confidence are significant in both groups (control and experimental), but higher in the experimental group that practiced yogilates. This indicates that the exercises have a positive effect through the type of exercises used, method of performing them, breathing techniques, and the specific times and repetitions.Which it is consistent with the results of a previous study showed that Pilates and yoga methods provide benefits to the psychological and mental health of their practitioners, this improvement is attributed to meditation, concentration and breathing techniques, which cause a decrease in sympathetic nervous system activity, cortisol secretion, blood pressure and stress, exercise also contributes to the sound emotional management of negative and positive feelings, which improves self-confidence(López Mesa et al., 2023).

This study is consistent with many studies that have examined the effect of exercise on psychological factors that can affect confidence directly or indirectly. In a study conducted among schoolchildren in Chile, concluded that a short yoga session can provide a significant reduction in stress levels (Ortiz Torres et al., 2022). A second study investigated the effect of a type of yoga in reducing state-anxiety and stress (Szabo et al., 2017). Other study indicates that practicing yoga contributes to a higher level of mindfulness, and women seem to find more benefits compared to men (Silva et al., 2020).

Also consistent with a study conducted on Mexican elderly people to determine the effect of a Pilates-based fitness program on psychological variables. The results showed that the Pilates method, scheduled over (12) weeks, in three weekly 50-minute sessions, produces positive changes in psychological variables (Villarreal Ángeles et al., 2021).In another study, examination of positive body image, sport confidence and subjective sport performance in Jamaican athletes, the results showed positive associations between body image, function, and self confidence (Ricketts et al., 2023). In addtion sport confidence "can act as a mediator (indirect effect) and predictor (direct effect) of competitive performance,

intervention programs should focus on increasing the confidence of athletes in their physical skills, training, cognitive efficiency, and resilience"(BARBOSA et al., 2023, p. 282). That is what is taken into consideration in this study, from the researcher's point of view, yogilates exercises, which include all parts of the body and are performed gradually from easy to difficult, with specific repetitions and timings, contribute to improving the body image of the students and thus increasing their confidence, furthermore, The feeling of students that they have a high level of skill performance increases the feeling of confidence also.

As mentioned earlier, yogilates is a system that combines the principles and basics of yoga and Pilates, and thus achieves the benefits of both sports together. In a review of many previous studies that dealt with one of them, found that "pilates techniques during the pedagogical experiment had positive effect on improving flexibility, strength, balance, coordination, and increasing the functional state of the autonomic nervous system in women of complex coordination sports" (Todorova et al., 2024, p. 57).

Previous study has shown the effectiveness of yogilates exercises in improving the physical and psychological health of breast cancer patients and boosting their self-confidence. Breathing exercises and meditation have also proven effective in treating shortness of breath and relieving stress and anxiety, contributing to a reduction in psychological stress in healthy individuals(Liu et al., 2023).

The researcher also adds another interpretation to the study results, which is (the indirect effect of exercises), which is in the following sequence from the researcher's point of view: Yogilates exercises improves physical abilities, which improves the skill performance of jumps and thus increases the sport confidence. This is based on a logical explanation that skill development does not occur without physical development, as skill performance depends primarily on physical and motor abilities (Antara et al., 2023; Lim et al., 2024). This is confirmed by the results of a study (Alazawy & Salman, 2022), Which confirmed that the yogilates exercises are effective in developing the motor abilities and routine performance in rhythmic gymnastics, routine consists of several skills, including jumps. From this, conclude that the yogilates exercises had an effect in improving the performance of jumps. Another study confirms the positive effect of yoga exercises on athletic performance in rhythmic gymnastics and the psychological variables associated with it (Sierra-Palmeiro et al., 2023). Also found that yoga exercises directly influence physical indicators preparation of the players' Basketball, especially flexibility and balance(Brynzak & Burko, 2013). A study aimed to explore the role of Pilates training in improving jumping skills and execution accuracy among young volleyball players, the results indicated an improvement in jumping performance and serving accuracy, in addition to an improvement in psychological outcomes (physical sensations and mental events) among young volleyball players (Tafuri et al., 2024).

Conclusions

The results of this study demonstrated significant differences in favor of the experimental group. Therefore, conclude that yogilates exercises, scheduled over 15 weeks, twice per week, (35) minute sessions, showed positive changes in the performance of the jump/leap element and sport confidence of female university students in Baghdad, Iraq.This study contributed to adding new findings to the sport field, using yogilates exercises, which have not been previously studied in sport, especially rhythmic gymnastics.

The researcher recommends practicing yogilates for its physical, psychological, and health benefits. The researcher also recommends including yogilates exercises inclusion in physical education college lessons.

This study has limitation that is important to highlight, the study sample being limited to female students from one university, which may limit the possibility of generalizing the results.

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