

# The impact of practicing sports and physical activities on life quality level among a sample of master's students after the Corona pandemic

Makhlouf Djerioui<sup>1ABCDE</sup>, Laidi Abderrahim<sup>2ABCDE</sup>, Ahmed Lebchiri<sup>3ABCDE</sup>

<sup>1,3</sup>laboratory of Motor Learning and Control, Department of Physical Education and Sports, Institute of Sciences and Techniques of Physical and Sports Activities, Mohamed Boudiaf University, Algeria

<sup>2</sup>laboratory of Motor Learning and Control, Department of Sport Training, Institute of Sciences and Techniques of Physical and Sports Activities, Mohamed Boudiaf University, Algeria

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## Abstract

**Background and Study Aim** Research has shown that practicing sports and physical activities positively influences the quality of life level for master's students. This research aims to identify the standard levels of life quality among master's students practicing physical activities after the Corona pandemic.

**Material and Methods** This study adopted a descriptive approach. The research sample consisted of 90 master's students from the Physical Education and Sports department. Among them, 45 students specialized in a collective sport (basketball), and the other 45 specialized in an individual combat sport (judo). To measure the level of life quality, we utilized the Quality of Life Scale as the designated instrument.

**Results** The study's findings revealed a high level of quality of life among master's students engaging in sport activities. Moreover, significant differences were observed in the quality of life based on the type of sports specialization, between collective and individual sports. This suggests that engaging in sports activities positively impacts the quality of life. Specifically, students from the judo group exhibited a higher quality of life level compared to those in the basketball group.

**Conclusions** These findings suggest the potential of tailored physical activity programs, especially those focusing on individual sports, to enhance life quality among master's students. This research contributes to the growing body of evidence advocating for the integration of physical activities into educational curricula to support students' overall well-being.

**Keywords:** sports, physical activities, quality of life, corona pandemic.

## Introduction

Millions of individuals worldwide have been impacted by the coronavirus disease 2019 (COVID-19) pandemic, presenting significant challenges to the international healthcare system [1]. The virus, initially identified in Wuhan, China, in December 2019, led to the World Health Organization (WHO) declaring a global pandemic on March 10, 2020, due to its rapid spread across the globe [2]. Originally known as 2019-nCoV, the virus was later renamed SARS-CoV-2, with the disease it causes referred to as COVID-19. According to the WHO, fever is present in 85% of COVID-19 cases, while symptoms such as dyspnea, dry cough, sore throats, nasal congestion, and lung infiltrates occur in 45% of cases [3]. COVID-19 is primarily transmitted through exposure to respiratory droplets from infected individuals, which can occur through sneezing, coughing, or touching one's mouth, nose, and eyes. It can also spread by touching surfaces contaminated with these droplets [4]. In response to this threat, countries worldwide were compelled to implement measures affecting all aspects of society to slow the

virus's spread. These measures included limiting social interactions, restricting travel, daily activities, and closing facilities that support people's daily movement needs, such as gyms, stadiums, etc. [6].

The experience of countries affected by the coronavirus indicates that the most impacted and at-risk groups, in terms of infection rates and mortality due to the pandemic, are the elderly and those with chronic diseases, including retirees. This demographic is particularly deserving of attention, especially given the epidemiological challenges humanity has faced and the collective effort to overcome them. The elderly's perception of being neglected can make them more susceptible to a range of social, psychological, and physical issues. As individuals age, they may experience changes leading to a decline in functional, physical, and sensory abilities, significantly affecting their personal well-being and satisfaction with life [4]. Furthermore, the social distancing and movement restrictions associated with the COVID-19 pandemic have had a profoundly negative impact on people worldwide, altering how they engage in physical activity. Consequently, many individuals have lost the ability to participate in regular physical activities outside their homes [7].

Health-related quality of life (HRQoL) is a pivotal concept in health research, guiding decisions in the prevention and management of illnesses. It encompasses an individual's overall physical and mental well-being [8]. The broader notion of quality of life (QoL), reflecting an individual's mental and physical health, has become essential in disease prevention and treatment. Yahya Abdel Hafeez [9] have defined QoL as the safeguarding of an individual's physical, mental, and social health, alongside the cleanliness of their environment and satisfaction with services provided to them. These services include education, health care, sports, communication, transportation, democratic practices, social justice, and fostering a spirit of love, optimism, positivity, high morale, and a sense of belonging and loyalty to one's homeland [9].

QoL is recognized as a complex and subjective term [10]. It is not easily regulated or defined, necessitating a nuanced approach to its assessment. Quality of life is understood as an individual's perception of their position in life, within the context of their social and cultural environment, and in relation to their goals, standards, expectations, and concerns [11]. It is linked to a person's psychological state and encompasses various components such as habits, lifestyle, personal fulfillment, leisure, and health [12].

The operationalization of quality of life (QoL) necessitates its quantification, leading to the development of various instruments designed for assessing QoL across different demographics. Although a multitude of these tools originate from high-income countries, they have been adapted for use in diverse settings. Notably, the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) and the World Health Organization Quality of Life-100 (WHOQOL-100) stand out for their comprehensive assessment capabilities. Both instruments are also offered in condensed forms tailored to specific population segments and/or areas of interest. These tools have facilitated a growing body of research exploring the links between QoL and health-related behaviors, including dietary habits, smoking, and physical activity [14, 15].

Physical activity (PA) is associated with a reduced risk of developing several diseases, including cancer, diabetes, stroke, and coronary heart disease [16]. Research indicates that quality of life (QoL) improvements and engagement in sports exercises are linked to numerous physiological and psychological health benefits across diverse populations with illnesses [17]. These benefits extend to areas such as cardiovascular fitness [18], pulmonary function [19], reduced anxiety [20], alleviation of depression [21], and enhanced self-esteem [22]. However, these advantages are often less pronounced in cancer patients. Furthermore, it has been established that exercise aids in the

rehabilitation of patients with other chronic conditions, such as end-stage renal disease, pulmonary disease, diabetes mellitus, rheumatic disease, cardiovascular disease, and essential hypertension. This underscores the consistent evidence of a positive relationship between physical exercise and QoL among these individuals. Regular PA at various ages is shown to improve QoL, highlighting the importance of physical activity across the lifespan.

The studies conducted by Courneya et al. [17] have delved into the relationship between physical activity (PA) and overall quality of life (QoL), including PA's impact on specific QoL domains. An association with the 'physical' and 'mental' aspects of QoL has frequently been reported [13]. This finding is corroborated by Al-hammami et al. [23], who assert that engaging in sports activities plays a crucial role in fully involving university students. Such participation not only encourages a lifestyle change but also significantly enhances their psychological and physical health. This leads to an increase in happiness, psychological contentment, optimism, and overall well-being [23]. While there is a body of evidence supporting the positive connection between PA and QoL, the comprehensive understanding of this relationship remains incomplete, indicating an area ripe for further investigation.

The strength of the association between physical activity (PA) and quality of life (QoL) varies across different demographics [14]. When examining strategies and tools for assessing PA and QoL, diverse outcomes emerged [24]. A recent review study identified a positive correlation between PA and the perception of QoL in adults who appeared to be in good health, highlighting the necessity for further exploration of this relationship across various age groups, medical conditions, and employing more precise instruments for measuring QoL and PA [24]. The importance of leisure sports in maintaining health is significant, suggesting that individuals should participate in these activities to contribute to a disease-free society [25].

Consistent with El-Safty's observations, older adults engaging in leisure and sports programs report improved social connections and beneficial effects on their mental and physical health [26]. Leisure time activities, including recreational pursuits, are linked to increased life satisfaction among the elderly and improvements in both physical and psychological well-being. Additionally, a strong support network and self-efficacy, when combined with active participation, are positively correlated with higher life satisfaction levels [27]. This body of evidence underscores the multifaceted benefits of PA and the need for its promotion across all segments of the population.

Al-Ahmed [28] further supports the idea that

regular engagement in recreational sports activities significantly benefits young people's psychological well-being and aids in their self-expression. This involvement facilitates relaxation and psychological equilibrium, reduces stress, anxiety, and nervous tensions, and combats physical, psychological, and mental fatigue, thereby increasing satisfaction and happiness [28]. Angélico et al. [29] highlight the critical role of sports clubs and neighbourhood associations in this regard. Such organizations are vital for overseeing participants of all ages, offering direction, and encouraging them to partake in recreational physical activities [29]. This underscores the broad consensus on the positive impact of regular physical activity on mental health and the community's role in facilitating access to such opportunities.

The purpose of this study is to explore the impact of engaging in physical activities on the quality of life among master's students in the Department of Physical Education and Sport at the University of M'sila, following the Corona pandemic.

## Materials and Methods

### Participants

The study population consisted of 367 male students from the Physical Education and Sports (PES) Institute at M'sila University, all of whom were engaged in physical activities. The research sample was drawn from this population and included 90 male students from the PES department. This sample was divided into two groups: 45 students specializing in collective sports, specifically basketball, and another 45 students practicing individual sports, namely judo (Table 1).

**Table 1.** Participant Characteristics

| Variables        | Characterizes                            |                                          |
|------------------|------------------------------------------|------------------------------------------|
| Research Society | 367 Master Student                       |                                          |
| Participants     | 45 students practicing Collective sports | 45 students practicing Individual sports |
| Level            | Master                                   |                                          |
| Sport practice   | Basket-ball                              | Judo                                     |

This study received approval from the Institute of Science and Technology of Physical and Sports Activities, specifically the Laboratory of Motor Learning and Control, at Mohamed Boudiaf University of M'sila, Algeria, for the academic year 2022-2023. The study targeted the entire population of master's students enrolled in the Physical Education and Sports program at the Sports Institute of M'sila University, who regularly visited the sports complex located in the city of M'sila. The total number of these male students amounted

to 90. Prior to their inclusion, each participant provided informed consent to participate in the study. The Ethics Committee of Mohamed Boudiaf University in M'sila, Algeria, subsequently approved the study's procedures.

### Research Design

The focus of this study is on evaluating the quality of life among master's students engaged in physical activity post the Corona pandemic. A descriptive method was chosen for this investigation to accurately capture and describe the phenomena as it exists. To assess the quality of life levels among these master's students who resumed sports activities after the Corona pandemic, the Quality-of-Life Scale (QOLS) was employed [30]. Prior to administering the QOLS to the sample participants, the stability (reliability) and validity (honesty) coefficients of the questionnaire were calculated, resulting in coefficients of 0.93 and 0.72, respectively. These figures suggest that the questionnaire possesses excellent psychometric properties, making it a reliable and valid tool for measuring the quality of life in this context.

To determine the demographic characteristics of the participating students, the researchers utilized a custom personal information form. This form collected information on age, segmented into categories: under 25 years, from 25 to 30 years, and older than 30 years. It also asked about the type of sport practiced (either collective or individual) and the frequency of training sessions, with options for 2 times, 3 times, and 4 to 5 times per week.

### Data Collection

Prior to initiating the data collection process, the sports institute's administration provided the necessary official authorization. Students were informed about the study's objectives and procedures and gave their consent to participate. To facilitate the collection of responses, a digital application was employed to create an electronic version of the personal information form (QOLS). This electronic form was then distributed to the students, allowing them to complete it online and submit their responses electronically.

### Statistical Analysis

For the analysis of the collected data, basic descriptive statistics, including the mean, standard deviation (SD), T score, raw grade, repetitions (assumed to follow a natural distribution), percentage (%), and the independent sample T-test, were computed for all variables. To assess changes within groups, the Paired Samples T-test was utilized [31]. A significance threshold was established at  $p < 0.05$ , with all results presented as mean  $\pm$  SD.

To evaluate the size of any observed differences between the pre- and post-test results, the partial Cohen's d effect size (ES) was calculated. The interpretation of these effect sizes followed Cohen's

classification, with values of  $0.00 \leq d \leq 0.49$  indicating a small effect,  $0.50 \leq d \leq 0.79$  suggesting a medium effect, and  $d \geq 0.80$  indicating a large effect [32]. All statistical analyses were performed using the SPSS software, version 25.0.

## Results

The standard levels of quality of life are represented in Table 2. The results showed that masters' students practicing physical activities have a good level of quality of life. The T scores of this level have the highest frequency within the research sample (40 repetitions), which corresponds to a percentage (44.44%). Also, the raw scores of this level are 53.98–58.65, with a supposed natural distribution of 34.13.

Based on T scores and their repetitions, the average and the weak level were classified in second and third place, respectively. where the T-scores for the second level are 40–50, with 24 repetitions, which corresponds to a percentage of (26.67%); in the third level, the T-scores are 30–40, with 11 repetitions, which corresponds to a percentage of (12.22%). Also, the raw scores of these levels are (49.31 - 53.97) and (44.63 - 49.30), with a supposed natural distribution of 34.13% and 13.59% for the second and third levels, respectively.

The repetitions of other levels (Excellent, Very Good, Acceptable) represent these (00, 08, 03),

respectively, with percentages supposed to be in the natural distribution (13.59) for the very good level and (2.14) for the acceptable and excellent levels. These results were dissimilar between those levels.

According to the table 3, The P value of Paired sample T-test of CS and IS groups was ( $P = 0.000$ ;  $P = 0.009$ ), and its smaller than signification level which was 0.05, so that meanse significance defferences ( $p < 0.05$ ) in quality of life in the two groups (basketball - judo), so that means the practicing of sports and physicals activities have impact on life quality level of masetr's students.

According to the table 4, The P value of T-independent test was ( $P = 0.000$ ), and its smaller than signification level which was 0.05 in Df 88 with (T) calculated (11,336), so that meanse significance defferences ( $p < 0.05$ ) in life quality between Sport practice specialization (collective, individulal), It is attributed to the variable number of times of practice.

Comparison of the mean differences and Cohen's test of the QOL variable for the two groups is shown in Table 5. There was a significant difference in the QOL values for the CS group ( $p = 0.000$ ) and the IS group ( $p = 0.009$ ) after applying physical activities and sports. The results of Cohen's test (effect size) for the two groups showed that the IS group (judo) had a significant effect ( $d \geq 0.8$ ) on the level of QOL, as the effect size value = 1.68, but the CS group

**Table 2.** The standard level of quality of life of study sample:

| Level      | T score | Raw grade     | Percentage% | Supposed in natural distribution | Repetitions |
|------------|---------|---------------|-------------|----------------------------------|-------------|
| Excellent  | 70 - 80 | 63.32-        | 00          | 2.14                             | 00          |
| Very good  | 60 - 70 | 58.66 - 63.31 | 11.11       | 13.59                            | 10          |
| Good       | 50 - 60 | 53.98 - 58.65 | 44.44       | 34.13                            | 40          |
| Average    | 40 - 50 | 49.31 - 53.97 | 26.67       | 34.13                            | 24          |
| Weak       | 30 - 40 | 44.63 - 49.30 | 12.22       | 13.59                            | 11          |
| Acceptable | 20 - 30 | 39.96 - 44.62 | 5.56        | 2.14                             | 05          |

**Table 3.** Paired sample T-test results for pretest and posttests of Life Quality variable in basket-ball group (n = 45) and judo group (n = 45).

| Groups           | Test | Pre test      | Post test     | Paired sample T-test<br>p Value |
|------------------|------|---------------|---------------|---------------------------------|
| CS (basket-ball) | QOL  | 4.132± 0.437  | 4.335± 0.247  | 0.000                           |
| IS (judo)        |      | 4.138± 0.5039 | 5.259± 0.4163 | 0.009                           |

QOL = Life Quality; CS = Collective sport; IS = Individual sport

**Table 4.** The independet T-test results of quality of life among masters' students of Physical Education and Sports departmenet according to their sport practice specialization (basket-ball/ judo).

| Significant Differences  | Mean ± SD    | Df | T      | Signification level | P-Value | Statistic decision       |
|--------------------------|--------------|----|--------|---------------------|---------|--------------------------|
| Collective (basket-ball) | 4.132± 0.437 | 88 | 11.336 | 0.05                | 0.000   | significance defferences |
| Individual (judo)        | 5.260± 0.504 |    |        |                     |         |                          |



**Table 5.** Comparison of mean differences and Cohen's size of Life Quality variable for basket-ball group (n = 45) and judo group (n = 45).

| Test | Groups | Differences appariées (pre-post) |            |       | Paired T-test |                 | Effect Size |
|------|--------|----------------------------------|------------|-------|---------------|-----------------|-------------|
|      |        | Moyenne                          | Ecart type | MES   | t             | Sig (bilatéral) | Cohen's (d) |
| QOL  | CS     | 0.203                            | 0.498      | 0.074 | 2.738         | 0.000           | 0.41        |
|      | IS     | 1.1206                           | 0.676      | 0.101 | 11.125        | 0.,009          | 1.68        |

CS = Collective sport; IS = Individual sport; QOL = Life Quality; MES: Moyenne erreur standard

(basketball) had an average (  $d \geq 0.4$ ) Effect on the level of QOL, where the effect size value was = 0.41. Therefore, the results in this study concluded that students who practice individual sports enjoy a greater level of quality of life compared to collective sports, because the number of practice times in judo is greater than in basketball. That is, the number times of sports practices has a direct relationship to the level of life quality. As the number of times you practice sports increases, this leads to a higher level of quality of life and a feeling of comfort, reassurance and happiness.

## Discussion

This study sought to assess the quality of life (QOL) levels among master's students engaged in physical activities post the Corona pandemic. The findings revealed that retired teachers from the Physical Education and Sports department, who participated in physical activities (both collective and individual sports), exhibited a good level of QOL. This indicates that physical activity (PA) positively affects the quality of life. Moreover, the analysis identified a significant difference in the quality of life between types of sports specializations (collective vs. individual). Notably, there were significant differences ( $p < 0.05$ ) in the quality of life between the two groups (basketball vs. judo), with students who engaged in individual sports reporting a higher quality of life than those involved in collective sports.

The findings of this study align with previous research indicating that physical activity (PA) is associated with a higher level of quality of life (QOL). Previous studies, such as [16], have shown that increased levels of PA are linked to improved health-related quality of life (HRQoL). While exercise and sports participation have been found to have a positive impact on HRQoL, the extent of this impact may vary depending on objective and subjective measurements of PA.

Furthermore, research by [33] highlights the significant role of sports participation in function and brain health. Engaging in sports with others can foster social bonds and mutual support, which may also positively influence mental health through social interactions [8]. Numerous studies focusing on the benefits of exercise for older adults or individuals

with chronic illnesses have demonstrated similar findings [34].

The current study's results are consistent with previous research, such as [35], which concluded that regular exercise and physical activity are associated with better physical and mental health, increased life satisfaction, and improved cognitive function [36]. The finding that a substantial percentage of students had never participated in any type of sport is noteworthy, possibly influenced by the impact of the COVID-19 era on sports participation. The observed pattern of low PA among adolescents during the COVID-19 phase is in line with previous studies. Additionally, [37] found that increased participation in sports activities is correlated with higher quality of life, further supporting the findings of this study.

The study conducted by Peráčková and Peráček [38] highlighted the positive impact of sports activity on the perception of enjoyment and satisfaction with life quality dimensions. Similarly, my study revealed a positive association between physical activity (PA) and a good level of life quality. Additionally, research by [27] found that participating in recreational activities during leisure time is associated with increased life satisfaction among the elderly and enhanced physical and psychological well-being later on.

These findings are consistent with the results reported by [14], which demonstrated a positive and statistically significant relationship between life quality and the level of physical activity. Specifically, higher levels of physical activity were associated with better life quality. Furthermore, Hammad [39] confirmed this proposition in their study, revealing statistically significant differences between students who practiced sports activities and those who did not across all dimensions of the Life Effectiveness Scale, as well as its overall score. These findings collectively underscore the positive impact of sports activities on various aspects of life quality.

The study conducted by Çiçek [40] emphasized that sports activities contribute significantly to improving the level of life quality among university students. Similarly, research by [41] found that participating in sports activities enhances both health and life quality, thereby helping to mitigate

social disparities in the realm of health.

Additionally, Al-Nader [42] identified a close relationship between life quality and engagement in sporting activities. Participating in various sports activities enables university students to navigate and comprehend various life situations, facilitating personal growth by uncovering positive aspects, abilities, and possibilities within themselves. This optimistic outlook encourages individuals to focus on their potential and possibilities in life rather than dwelling on negative aspects of their personality. These findings collectively highlight the transformative impact of sports activities on life quality and personal development among university students.

Mahfouz et al. [43] revealed that an individual's physiological integrity, mental health, and social comfort significantly contribute to their quality of life (QOL). The study highlighted that psychological issues negatively impact QOL indicators. Additionally, both men and women who engaged in higher levels of physical exercise exhibited notably higher scores on QOL measures. Previous research [44, 45, 46] aligns with the findings of my study regarding the relationship between physical activity (PA) and QOL.

While the data indicate a correlation between QOL and PA, no definitive conclusions regarding causation can be drawn. It remains uncertain whether engaging in PA directly improves health-related quality of life (HRQoL) or whether individuals with better HRQoL are more inclined to engage in PA due to a lifestyle unencumbered by limiting illnesses. Therefore, further investigation into the underlying mechanisms linking PA with HRQoL using longitudinal datasets is warranted.

Furthermore, as the study focused on individuals aged 25 and older, it is possible that the results may not be generalizable to other age groups. Thus, future research should explore the relationship between PA and QOL across diverse age cohorts to better understand its implications across the lifespan.

The results suggest that students who participate in physical and sports activities demonstrate a favorable quality of life, which is integral to overall health. This underscores the connection between physical activity (PA) and health-related quality of life (HRQoL). Moreover, the findings indicate that an increase in PA levels correlates with improvements in practitioners' quality of life. This assertion finds support in the work of Abdulah Al-Othman et al. [47], whose study established a direct relationship between sports engagement and quality of life. Their research revealed that involvement in physical sports activities positively influences the quality of life among students. Additionally, it highlighted that higher levels of sports participation are associated with increased quality of life, contributing to

enhanced feelings of satisfaction and optimism among students [47].

A study conducted by Abdulah Al-Othman et al. [47] revealed a positive relationship between quality of life (QOL) and the level of physical activity (PA) ( $r=0.86$ ), indicating that higher scores of PA corresponded to a higher level of QOL. It's essential to consider the components of health-related quality of life (HRQoL) improvements associated with PA identified in this study, with a focus on potential psychological benefits. Typically, engaging in PA is associated with two primary benefits: physical (reduced risk of illness, improved fitness) and psychological (enhanced mental health, cognitive stimulation during activity) [48]. In a study by Areej Ahmed Saeed Al Iqran [49], one significant finding was the positive impact of practicing sports activities on the quality of life of female students. Further research is warranted to comprehensively understand the relationship between PA and QOL, which may require a combination of quantitative and qualitative methodologies.

In conclusion, while there are both similarities and differences between my study and previous research, collectively they underscore the importance of sports and physical activities in enhancing quality of life (QOL). The findings demonstrate positive correlations between physical activity (PA) and QOL. However, additional research is necessary to elucidate the relationship between QOL enhancements directly attributable to participation in PA and those stemming from sustained engagement and reduced incidence of chronic conditions over the long term.

#### Conclusions

This study revealed that master's students who engage in sports and physical activities exhibit a good level of quality of life, with significant differences observed in quality of life between different sports specializations (collective vs. individual). These findings suggest that involvement in sports has a notable impact on one's quality of life. Moreover, the research indicates that students in the Physical Education and Sports (PES) program at Mohamed Boudiaf University's Sports Institute who participate in individual sports experience a higher quality of life compared to those engaged in team sports.

To enhance the accuracy of future studies, it would be beneficial to utilize diverse questionnaires to measure and understand the underlying principles linking physical activity with quality of life. Additionally, further research could explore additional benefits stemming from regular participation in physical activities. Furthermore, the study recommends the development of programs aimed at attracting and motivating students to participate in physical activities during their free time.

## Suggestions

- The study recommends the establishment of sports programs aimed at spreading the culture of sports practice, and attracting and encouraging students to practice physical activities and fill their free time. These programs must contribute to strengthening the general aspects of quality of life (social, physiological, physical, health, and psychological functions).
- Encourage students to practicing sports exercises for increase their level of quality of life and enhance their competence in physiological, physical, and psychological functions.
- It is important to prioritize health and highlight the connection between practising sports and physicals exercise and life quality (social, psychological, physiological, and physical). This

knowledge can help people choose sports that will benefit their nquality of life level, and other aspect functional systems.

These suggestions, which are grounded in the study's findings, are meant to improve our knowledge the role and association between practicing any physical activity sports and make good level of LQ.

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## Conflicts of Interest

Regarding the topics covered in the manuscript, the writers attest that there are no conflicts of interest.

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### Information about the authors:

**Makhlouf Djerioui**; (Corresponding Author); <https://orcid.org/0009-0009-8400-524X>; makhlouf.djerioui@univ-msila.dz; Department of Physical Education and Sports, Institute of Sciences and Techniques of Physical and Sports Activities, Mohamed Boudiaf University; PO Box 166 Ichebilia, 28000 M'sila, Algeria.

**Abderrahim Laidi**; <https://orcid.org/0009-0001-3132-2702>; abderrahim.laidi@univ-msila.dz; Department of Sport Training, Institute of Sciences and Techniques of Physical and Sports Activities, Mohamed Boudiaf University; PO Box 166 Ichebilia, 28000 M'sila, Algeria.

**Ahmed Lebchiri**; <https://orcid.org/0009-0006-0859-0502>; ahmed.lebchiri@univ-msila.dz; Department of Physical Education and Sports, Institute of Sciences and Techniques of Physical and Sports Activities, Mohamed Boudiaf University; PO Box 166 Ichebilia, 28000 M'sila, Algeria.

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