

Assessment of life quality in retired educators practicing recreational physical activities post-COVID-19 pandemic: A focus on physical and psychological dimensions.

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Abstract.

Background and Study Aim: Prior research has established that engagement in sports activities can significantly enhance both the physical and psychological quality of life (QOL) for retirees participating in recreational pursuits. QOL, which encompasses various aspects of physical and mental well-being, is increasingly recognized as an essential element in the prevention and management of diseases. This study is designed to evaluate the levels of physical quality of life (phy-QOL) and psychological quality of life (psy-QOL) among retirees involved in recreational physical activities during the COVID-19 pandemic.

Material and Methods: A descriptive research design was employed for this investigation. The sample included 90 retired Physical Education and Sports teachers from intermediate educational institutions, divided into two groups: 45 individuals who engaged in sports activities 1 to 2 times per week and 45 individuals who participated 3 times per week. The Quality of Life Scale (QOLS) was employed as the assessment tool to measure the levels of QOL, emphasizing both physical and psychological dimensions.

Results: The results indicated that retirees exhibited high levels of both phy-QOL and psy-QOL in the aftermath of the COVID-19 pandemic. Statistical analysis revealed significant differences in both dimensions of QOL based on the frequency of sports participation, with distinctions observed between those engaging 1 to 2 times weekly and those partaking 3 times weekly.

Conclusions: The findings underscore that quality of life, encompassing physical and psychological dimensions, constitutes a fundamental aspect of overall health and can be bolstered through targeted physical exercise aligned with specific activity objectives, such as recreational, leisure, or competitive pursuits. The evidence indicates a significant correlation between quality of life (QOL) and physical activity (PA), suggesting that regular physical participation may improve an individual's overall health. Recent studies support the presence of a positive association between physical activity and quality of life perceptions among generally healthy adults.

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

Introduction

The emergence of the coronavirus, beginning in December 2019 in Wuhan, China, culminated in the World Health Organization (WHO) declaring a global pandemic on March 10, 2020. The virus initially identified as 2019-nCoV has been reclassified as SARS-CoV-2, with the disease it causes designated as COVID-19. According to WHO data, fever manifests in approximately 85% of COVID-19 cases, while symptoms such as dyspnea, dry cough, sore throat, nasal congestion, and lung infiltrates are present in about 45% of cases (D. Cucinotta & M. Vanelli, 2020; H. Alfawaz et al, 2021). The primary mode of COVID-19 transmission is through respiratory droplets produced by infected persons during sneezing, along with direct contact with surfaces that have been contaminated (Makhlouf Djerioui & Ameer Hamlaoui, 2022). In light of the virus's potential to affect global health, countries were compelled to implement comprehensive measures to mitigate its spread. These interventions included limiting social interactions, imposing travel restrictions, and closing venues central to community activities, such as gyms and sports facilities (M. Kalayci et al, 2021).

The epidemiological data indicates that older adults and individuals with preexisting chronic conditions are at a significantly higher risk of severe illness and mortality associated with COVID-19. This demographic warrants particular attention, as the pandemic exacerbates their vulnerability to various social, psychological, and physical health challenges. Kathleen Hell highlights that the elderly often experience a detrimental perception of being neglected, which heightens their susceptibility to these issues (Makhlouf Djerioui & Ameer Hamlaoui, 2022). Furthermore, the pandemic's associated social distancing and restrictions on movement have had detrimental effects worldwide, drastically altering patterns of physical activity. This has resulted in a marked decline in individuals' ability to engage in regular physical activities outside the home (B. Özcan, L. Sarac, 2021).

Health-related quality of life (HRQoL) constitutes a crucial element in health research, playing a key role in the development of strategies for the prevention and management of different diseases. It includes both physical and mental dimensions of health (W. Chai et al, 2010). The concept of quality of life (QoL) refers to an individual's comprehensive state of mental and physical well-being, has gained considerable significance in the context of disease prevention and treatment. QoL is a multifaceted and inherently subjective construct (A. Shibata et al, 2007), lacking standardized definitions and regulatory frameworks, which necessitates intricate operationalization. QoL reflects an individual's self-perception of their life within the continuum of their social and cultural environment, taking into account their aspirations, standards, expectations, and apprehensions (W. Group, 1995). It is inherently linked to an individual's psychological state and incorporates various components, including lifestyle choices, personal fulfillment, recreational activities, and health status (M. C. de Souza Minayo et al, 2000).

To operationalize QoL, measurement instruments have been developed. Numerous tools exist to assess QoL across diverse populations (E. M. F. eu ry Seidl & C. M. L. da Costa Zannon, 2004), although many have originated in high-income countries and have been subsequently adapted for other contexts. The SF-36, or 36-Item Short-Form Health Survey, developed as part of the Medical Outcomes Study, along with the WHOQOL-100 from the World Health Organization, represent key tools for a thorough evaluation of quality of life (QoL). These instruments also have shorter versions tailored for specific demographic groups and particular domains of interest. Various measurement tools have enabled an expanding array of research investigating the connection between quality of life (QoL) and health-related behaviors, such as dietary patterns, smoking rates, and levels of physical activity (Pucci et al, 2012).

Engaging in physical activity (PA) is associated with a lower likelihood of developing conditions such as cancer, diabetes, stroke, and coronary heart disease (Anokye NK et al, 2012). Furthermore, evidence suggests that improvements in quality of life (QoL) through participation in sports and exercise are observed in diverse patient groups with pre-existing health issues, providing a range of physiological and psychological advantages (Courneya KS & Friedenreich CM, 1999). These benefits encompass enhancements in cardiovascular fitness (J. H. Mitchell & P. B. Raven, 1994), pulmonary function (M. A. Babcock & J. A. Dempsey, 1994), anxiety reduction (D. M. Landers & S. J. Petruzzello, 1994), alleviation of depressive symptoms (W. P. Morgan, 1994), and increased self-esteem (E. McAuley, 1994). Notably, however, these improvements may be less pronounced in patients with cancer. Evidence has shown that exercise facilitates rehabilitation for individuals with other chronic conditions such as end-stage renal disease (P. Painter et al, 1994), pulmonary diseases (A. F. Barker et al, 1994), diabetes mellitus (B. N. Campaigne et al, 1994), rheumatic diseases (S. R. Clark et al, 1994), cardiovascular diseases (T. Kavanagh et al, 2003), and essential hypertension (L. Goldberg & D. L. Elliot, 1994). Despite ongoing research highlighting the positive correlation between physical exercise and QoL in these populations, regular PA is found to enhance QoL at various life stages (Courneya, K. S & Friedenreich, C. M, 1999). Numerous studies have explored the relationship between PA and overall QoL, examining the impacts of physical activity on specific QoL domains (W. J. Rejeski et al, 1996); (R. Bize et al, 2007). Findings consistently demonstrate correlations particularly in the "physical" and "mental" domains of QoL (K. R. Fox et al, 2007).

The relationship between physical activity (PA) and quality of life (QoL) is supported by evidence, yet the current understanding remains incomplete. The strength of this association varies across different demographic groups (Anokye NK

et al, 2012). Furthermore, an evaluation of the methodologies and tools used to assess PA and QoL has yielded divergent outcomes (R. Bize et al, 2007). A recent systematic review highlighted a positive association between physical activity (PA) and quality of life (QoL) perceptions among adults in good health. However, the authors emphasized the need for additional research to explore this relationship across various age groups, medical conditions, and through the use of more specialized tools for assessing QoL and PA (Bize et al, 2007). In addition, recognizing the crucial role of leisure sports in enhancing overall well-being, it is recommended that individuals partake in these activities to foster a healthier, disease-free community (Özkan et al, 2021). Supporting this notion, El-Safty (2016) reported that older adults who engage in leisure and sports programs enjoy improved social interactions and demonstrate positive impacts on both their mental and physical health (El-Safty, 2015). Participation in recreational and diverse leisure activities is positively correlated with life satisfaction among the elderly, contributing to their overall physical and psychological well-being; additionally, higher levels of social support and self-efficacy in this demographic are positively associated with increased life satisfaction (J. Ra et al, 2013). In this context, Jean Ferre and Bernard Philippe emphasized the importance of establishing sports clubs and community associations, which aim to supervise and motivate individuals of all ages to engage in recreational physical activities (A. P. Angélico et al, 2013).

Purpose of the Study: The present investigation aims to evaluate the physical and psychological quality of life among retirees engaged in recreational physical activities. This inquiry gains significance in the context of physical and psychological well-being considerations influenced by the COVID-19 pandemic. The study seeks to elucidate the impact of recreational physical activity on the overall well-being of retired physical education and sports educators, thereby enriching the existing scholarly literature on health and wellness during the post-retirement phase. The findings are intended to provide insights that may inform future health promotion strategies for retirees.

Materials and Methods

Participants

The study population comprised 265 male retirees aged between 50 and 62 years who actively engaged in recreational physical activities. The sample for this research consisted of 90 retired physical education and sports teachers from intermediate education, subdivided into 45 participants focusing in sport activities for one to two times per week and 45 individuals practiced sports activities for three times per week (refer to Table 1).

The study received approval from the Institute of Science and Technology for Physical and Sports Activities, specifically from the Laboratory of Motor Learning and Control, at Mohamed Boudiaf University in M'sila, Algeria, following the academic year 2022-2023. The study population was established through a complete census of retired physical education and sports teachers from middle schools who engage in recreational physical activities and regularly utilize the sports complex in M'Sila. This census identified a sample of 80 retirees for the study. Prior to their inclusion, all participants provided informed consent to take part in the research. The procedures of the study were sanctioned by the Ethics Committee of Mohamed Boudiaf University in M'Sila, Algeria.

Table 1. Participant Characteristics.

Variables	Research Society	Education Level	Participant	Frequency of Sport Practice
Characteristics	265 retirees	Intermediate education	45 retirees	One to two times weekly
			45 retirees	Three times weekly

Research Design

This study investigates the quality of life among retirees engaging in recreational physical activity during the COVID-19 pandemic. A descriptive research methodology was employed for this investigation. Quality of Life Scale (QOLS) was administered to assess the physical and psychological quality of life levels of retirees participating in physical activities during this period (C. S. Burckhardt & K. L. Anderson, 2003). Prior to distribution, the psychometric properties of the QOLS were evaluated, yielding reliability and validity coefficients of 0.95 and 0.68, respectively, thereby indicating strong psychometric characteristics.

To gather demographic information about the retiree participants, a personal information form was developed by the researchers. This form included details regarding the frequency of physical activity engagement (categorized as 01 to 02 times per week, or 3 times per week) and the duration of retirement (categorized as 1- Less than 5 years, 2- From 5 to 10 years, and 3- More than 10 years).

Data Collection

Before initiating the data collection process, official approval for the study was secured from the Ministry of National Education. Informed consent was obtained from the participating teachers, ensuring they were fully aware of the study's goals and methodologies. Due to the limitations caused by the Covid-19 pandemic, an electronic questionnaire

(QOLS) was created using a digital application. This questionnaire was distributed to physical education teachers, enabling them to fill it out online and submit their responses electronically.

Statistical Analysis

Descriptive statistics were calculated for all variables, including the mean, standard deviation (SD), T-scores, raw scores, and the number of repetitions, under the assumption of normal data distribution. A significance threshold of $p < 0.05$ was set. Results are reported as mean \pm SD. Data analyses were conducted using the SPSS software (version 25.0). To compare means between groups, an independent samples T-test was utilized.

Results

Normality distribution :

Table 2 show the results of the normality distribution tests for the Quality of Life (QOL) variable are presented in Table 4. The sample size consisted of 90 retired educators who participate in recreational physical activities. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests were employed to assess the normality of the distribution of the QOL scores. The Kolmogorov-Smirnov test yielded a statistic of 0.165 with a significance level of 0.001, indicating a deviation from normal distribution. Similarly, the Shapiro-Wilk test produced a statistic of 0.906 and a significance value of 0.001, further confirming the non-normality of the data. These results suggest that the distribution of QOL scores in this sample does not conform to a normal distribution, necessitating the use of non-parametric statistical methods for subsequent analyses.

Table 2. Normality Test Results for the Evaluation of Life Quality in Retired Educators Participating in Recreational Physical Activities.

Variables	Sample size	Kolmogorov-Smirnov		Shapiro-Wilk	
		Statistic	Significant	Statistic	Significant
QOL	90	0,165	0, 001	0,906	0,001

Notes: QOF : Quality of life

Validity and reability :

Validity pertains to the degree to which a measurement scale accurately captures the construct it is designed to assess. In this study, the content validity of the scale was established through expert evaluation in the domains of physical education and sport, as well as medicine and health psychology. The scale was presented to these specialists for assessment of face validity, and their consensus affirmed that the items included in the scale are pertinent to its intended objectives.

The validity of the scale was assessed through internal consistency, a method defined by several authors (Cortina, 1993; Cronbach, 1951) as the measure of the degree of bivariate correlations among different items within the same test or subscale of a composite assessment (Tang Cui, & Babenko, 2014, p. 207). To evaluate the scale's internal consistency, we calculated the Spearman-Brown coefficient for the bivariate correlations between each individual item and the total score of the scale. The results of this analysis are presented in **Table 3**.

Table 3 indicates that all items within the questionnaire (comprising 20 items) demonstrated statistically significant results. Furthermore, the correlation coefficients between each individual item and the overall scale score were also statistically significant, ranging from 0.01 to 0.05. This range suggests strong internal consistency among the items, thereby affirming the scale's high validity. Additionally, the validity assessment included an evaluation of the scale's stability, which was conducted using appropriate statistical methods. The findings revealed a high correlation coefficient between the different dimensions of the questionnaire (first and second axes) and the total score, with values ranging from 0.769 to 0.949, indicating robust stability and validity for the instrument.

Table 3. Internal consistency (Pearson Correlations).

Pearson correlation between each item & the total score of the scale (R)							
	Items	Pearson Correlations score	Signification (Sig)		Items	Pearson Correlations score	Signification (Sig)
02	0,929	0,05	12	0,610	0,05		
03	0,804	0,01	13	0,709	0,05		
04	0,769	0,01	14	0,875	0,05		
05	0,911	0,01	15	0,609	0,01		
06	0,948	0,01	16	0,905	0,05		
07	0,760	0,01	17	0,916	0,01		
08	0,681	0,01	18	0,886	0,01		

	09	0,744	0,01		19	0,561	0,05
	10	0,899	0,05		20	0,905	0,01

Reliability, defined as the degree of consistency in a measurement scale (Said Kara, 2017), in the current study, the reliability of the questionnaire used was assessed through the calculation of Cronbach's alpha coefficients, which serve to evaluate the internal consistency of the measurement tool. The results indicated a Cronbach's alpha coefficient of 0.938 for the first axis and 0.898 for the second axis of the questionnaire. Furthermore, the overall Cronbach's alpha coefficient for the entire questionnaire was found to be 0.954 (refer to Table 4). These values suggest that the scale demonstrates high reliability, confirming its validity for measuring the quality of life among retired physical education teachers.

Table 4. Reliability Analysis of the Questionnaire Measuring Quality of Life Among Retired Physical Education Teachers.

Questionnaire Component	Cronbach's Alpha Coefficient
First Axis	0.938
Second Axis	0.898
Overall Questionnaire	0.954

The assessment of physical quality of life (phy-QOL) levels within the sample population :

Table 5 presents a detailed assessment of the physical quality of life among the study sample, categorized into distinct levels. The T score ranges indicate the classification benchmarks utilized to evaluate participants' physical quality of life. The "Excellent" category, representing scores from 70 to 80, revealed no participants with a raw grade indicative of this classification, aligning with the expected distribution of 2.14%. In contrast, the "Very Good" category (60-70) housed 66 participants, corresponding to 24.9% of the sample. This proportion contrasts with the expected distribution of 13.59%, indicating a noteworthy prevalence of higher physical quality of life within this subgroup. The "Good" category, showing slightly lower scores (50-60), comprised the largest representation with 93 participants, amounting to 35.09%. This figure aligns with the expected distribution of 34.13%, suggesting a normative physical quality of life in this cohort. The "Average" category included 69 participants, accounting for 26.04%, consistent with the expected distribution of 34.13%, suggesting a robust distribution of participants at this mid-range level. The "Weak" category (30-40) contained 25 individuals, representing 9.43%—greater than the expected distribution of 13.59%, indicating a lower occurrence of poor physical quality of life within the sample.

Lastly, the "Acceptable" category featured 12 participants, with a corresponding percentage of 4.54%, which is also lower than the theoretical expectation of 2.14%. Overall, the results indicate a dominant presence of participants classified within the "Good" and "Very Good" categories, providing useful insights into the physical quality of life among the study population. Further investigation may be warranted to explore the factors contributing to these observed distributions.

Table 5. The standard level of Physical quality of life of study sample.

Level	T score	Raw grade	Percentage%	supposed in natural distribution	Repetitions
Excellent	80 -70	-63.32	00	2.14	00
Very good	70 -60	58.66 - 63.31	24,90	13.59	22
Good	60 -50	53.98 - 58.65	35,09	34.13	32
Average	50 -40	49.31 - 53.97	26,04	34.13	23
Weak	40-30	44.63 - 49.30	9,43	13.59	08
Acceptable	30 -20	39.96 - 44.62	4,54	2.14	05

Assessment of Physical Quality of Life (phy-QOL) Levels in the Sample Population :

Table 6 presents the distribution of psychological quality of life levels among the study participants, categorized according to standardized T scores, raw scores, and their respective percentages. The data delineates six distinct quality levels, ranging from Excellent to Acceptable. Within the sample, no participants were classified in the "Excellent" category, which is expected given that this level corresponds to a T score between 70 and 80. The "Very Good" bracket, which encompasses T scores from 60 to 70, included 38 individuals, accounting for 14.3% of the sample and demonstrating a notable departure from the expected frequency of 13.59%. The "Good" category emerged as the most populated, comprising 102 participants (42.2%), significantly exceeding the anticipated proportion of 34.13%. Conversely, the "Average" level included 78 participants (29.2%), which aligns precisely with the expected distribution, also at 34.13%.

Lastly, The "Weak" classification identified 32 participants (9.8%), which is consistent with the anticipated frequency of 13.59%. Finally, the "Acceptable" level recorded 15 participants (4.5%), reflecting a divergence from the expected 2.14%. Overall, the findings indicate that a majority of the study sample scored within the "Good" and "Average" ranges of psychological quality of life. These results substantiate the notion that psychological well-being within the sampled

population predominantly skews towards positive rather than negative outcomes, warranting further investigation into contributing factors. Future research may also benefit from exploring the implications of these quality of life levels on broader psychological and social outcomes.

Table 6. The standard level of psychological quality of life of study sample.

Level	T score	Raw grade	Percentage%	supposed in natural distribution	Repetitions
Excellent	80 -70	-70.35	00	2.14	0
Very good	70 -60	64.40 - 70.34	14,3	13.59	13
Good	60 -50	58.45 - 64.39	42,2	34.13	38
Average	50 -40	52.49 - 58.44	29.2	34.13	26
Weak	40-30	46.54 - 52.48	9.8	13.59	09
Acceptable	30 -20	40.58 - 46.53	4.5	2.14	04

Figure 1 : The repetitions and percentage (%) degrees levels of Physical quality of life in study sample.

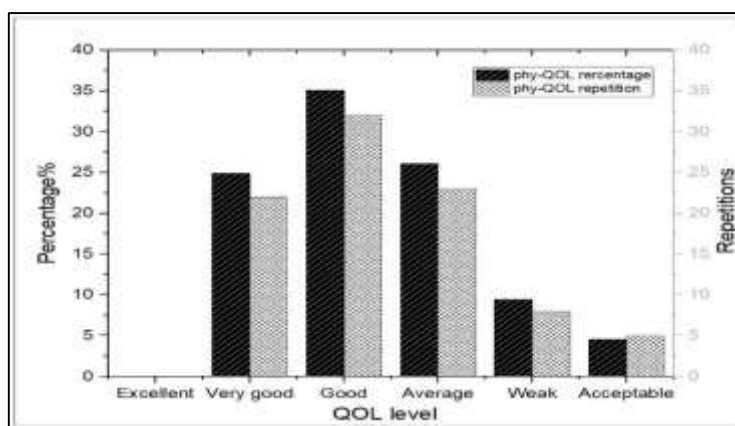
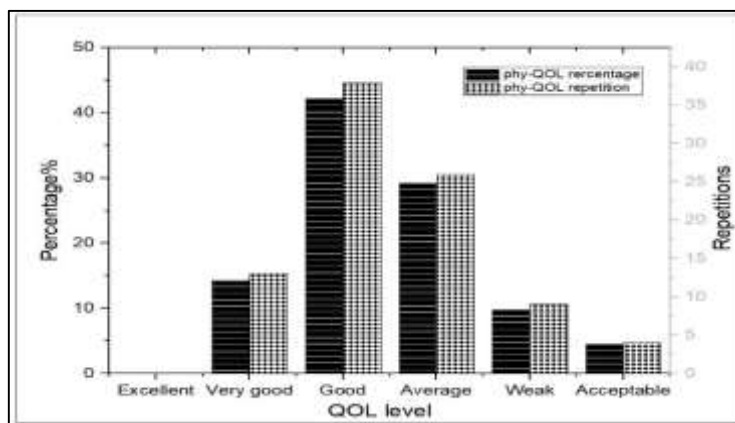


Figure 2 : The repetitions and percentage (%) degrees levels of Psychological quality of life in study sample.



Independent Sample t-Test Examination of Physical and psychological Quality of Life among Sample study :

Table 7 displays the outcomes of an independent t-test aimed at assessing the physical quality of life among retired educators specializing in Physical Education and Sports, with participants categorized based on their frequency of sport practice (1-2 times per week versus 3 times per week). The findings indicate a statistically significant difference in physical quality of life scores across the two groups. Retirees participating in sports activities one to two times per week achieved a mean score of 4.035 (SD = 0.427), whereas those engaging in sports three times per week reported a higher mean score of 5.175 (SD = 0.500). The statistical analysis yielded a significant difference at the 0.05 significance level. The p-value was calculated to be 0.001, which strongly supports the rejection of the null hypothesis and confirms significant differences in physical quality of life between the groups analyzed.

The findings of this study reveal a significant difference in the quality of life among retired individuals engaged in sports activities. Specifically, retirees participating in sports 1 to 2 times per week exhibit a lower quality of life compared

to those who engage in sports activities 3 times per week. This observed disparity indicates that the frequency of physical activity may play a crucial role in enhancing the physical overall well-being of retired individuals. In conclusion, these results underscore the importance of regular physical activity as a determinant of quality of life in retirement. Future research should explore the mechanisms through which increased frequency of sport participation contributes to improved physical and mental health outcomes in this population.

Table 7. displays the outcomes of an independent t-test assessing the physical quality of life among retired educators in Physical Education and Sports, differentiated by their frequency of sport practice (1-2 times weekly versus 3 times per week).

Frequency of Sport Practice	Test	Mean ± SD	Df	Signification level	P-Value	Statistic decision
One to two times weekly	Phy-QOF	4,035± 0,427	88	0.05	0,001	significance defferences
Three times weekly		5,175± 0,500				

Notes: *Phy-QOF* : Physical quality of life

Table 8 presents the independent T-test results examining the Psychological quality of life among retired educators of Physical Education and Sports, categorized by their practicing sports activities pr week Practice (01 to 02 times per week; 3 times per week). The results indicate significant differences in Psy-QOF scores measured by the Quality of Life Scale (QOFS) based on the frequency of sport practice. Specifically, retireed who engaged in sport practice between 1 to 2 times per week exhibited a mean quality of life score of 4.138 (SD = 0.5039), and for those practicing sports three times per week, the mean score increased notably to 5.259, with a standard deviation of 0.4163. The significance level was set at 0.05, and the obtained P-value of 0.009 with a degree of freedom (df) of 88 indicates a statistically significant difference in the quality of life scores for this group. The observed increase in the mean Psy-QOF suggests that a higher frequency of sport practice may correlate with improved quality of life outcomes.

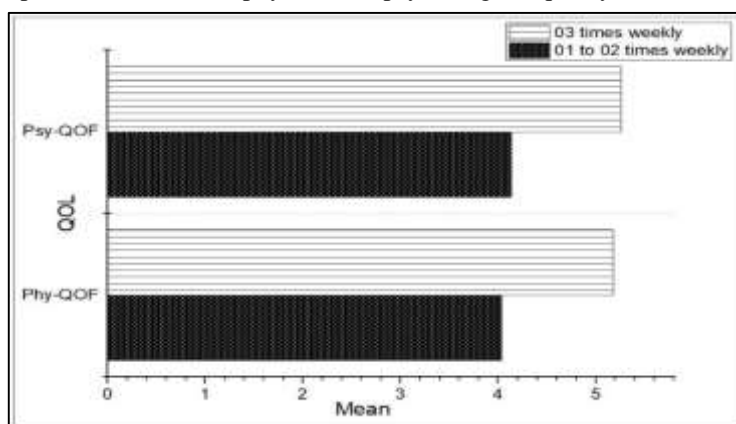
The findings of this study highlight the crucial role of regular physical activity in improving the psychological quality of life among retired educators. The observed significant differences in quality of life scores corresponding to varying frequencies of sports participation indicate that increased engagement in physical activities may lead to positive outcomes in psychological well-being. In conclusion, these results emphasize the necessity of promoting regular sports participation as a means to enhance psychological health in retired individuals, particularly educators. Future research should further investigate the mechanisms through which physical activity contributes to psychological well-being and explore the long-term implications of sustained sports involvement in this demographic.

Table 8. presents the results of an independent t-test evaluating the physical quality of life in retired educators from Physical Education and Sports, categorized by frequency of sports participation (1-2 times per week versus 3 times per week).

Frequency of Sport Practice	Test	Mean ± SD	Df	Signification level	P-Value	Statistic decision
One to two times weekly	Psy-QOF	4,138± 0,5039	88	0.05	0,009	significance defferences
Three times weekly		5,259± 0,4163				

Notes: *Psy-QOF* : Psychological quality of life

Figure 3 : comparais mean level of physical and psychological quality of life between two groups.



Discussion

This study investigates the physical and psychological quality of life (QOL) among retirees engaged in recreational physical activities within the context of the post-Corona pandemic. The analysis indicates that retired physical education and

sports instructors from intermediate educational institutions who actively participate in sports activities demonstrate a favorable level of physical QOL (phy-QOL) and psychological QOL (psy-QOL). These findings suggest that engagement in physical activities has a beneficial impact on both the physical and psychological well-being of retirees. Moreover, the study reveals significant differences in phy-QOL and psy-QOL between individuals participating in sports activities once or twice a week compared to those engaging in sports practices three times weekly. This suggests that the frequency of participation in sporting activities has a distinct influence on phy-QOL and psy-QOL outcomes.

Sport is a crucial factor influencing quality of life (QoL), particularly as prolonged sedentary behavior can adversely affect the well-being of working individuals (Bernard et al, 2018). As awareness of the health benefits associated with physical activity continues to expand, the importance of sport in promoting public health has become increasingly pronounced (Khan et al, 2012). Participating in physical activity offers a range of advantages, including personal and psychosocial development, as it can provide both healthy individuals and those with mental disabilities a sense of identity, purpose, and social connection (Felfe et al, 2016). Empirical evidence supports the association between a high level of physical activity and improved QoL. For instance, Marquez et al found that engagement in physical activity is instrumental in enhancing QoL and overall well-being (Marquez et al, 2020). This relationship may be mediated by physical activity-induced changes in brain neurotransmitters and endogenous opioids, which are implicated in mood disorders such as depression and anxiety (A. Bougherra et al, 2023). Additionally, Engaging in physical activity (PA) has been proposed as a significant contributor to the enhancement of quality of life (QoL) and overall well-being. Various mechanisms have been identified that may elucidate the relationship between PA and improved QoL and well-being. Notably, PA is associated with alterations in brain neurotransmitters and the release of endogenous opioids, both of which are implicated in the regulation of mood disorders such as depression and anxiety (Antunes HK et al, 2005; Morgan WP et al, 1988). Numerous studies have demonstrated the benefits of physical activity for the physical and mental well-being of older adults and individuals with chronic illnesses; these findings underscore the importance of promoting active lifestyles to enhance quality of life across diverse populations and health conditions (R. Bize et al, 2007).

The findings of this study align with existing literature indicating a positive correlation between physical activity (PA) and various aspects of health and well-being. For instance, research by Riyadh Mohammed AL-Johani emphasized that regular exercise is associated with enhanced physical health (R. M. Al-Johani, 2021), mental well-being, life satisfaction, and cognitive function (F. Ozdemir et al, 2020). Moreover, the work of Peráčková and Peráček supports the notion that sports participation enhances individuals' perceptions of enjoyment and quality of life (J. Peráčková & P. Peráček, 2019), while other studies reveal that increased recreational sports involvement correlates with improved quality of life (Areej Ahmed Saeed Al-aqran, 2020). Notably, our findings demonstrate a positive relationship between PA and social quality of life, consistent with previous research indicating that engagement in leisure recreational activities is linked to increased life satisfaction and enhanced recovery among older adults (J. Ra et al, 2013). In addition, improved health-related quality of life (HRQoL) is associated with higher levels of physical activity, and while the effect of exercise on health-related quality of life is generally modest, participation in sport has been shown to significantly benefit both functional and cognitive health (A. Bougherra et al, 2023). Engaging in physical activities with others may also foster social connections and mutual support, thereby enhancing mental health through these interactions. Collectively, these findings reinforce the critical role of physical activity in promoting both physical and mental health outcomes. (W. Chai et al, 2010)

In their study of mohamed salih mahfouz et al, identified physiological integrity, mental health, and social comfort as significant determinants of quality of life (QOL). The findings indicated a negative correlation between psychological issues and various QOL indicators (M. S. Mahfouz et al, 2023). Notably, both men and women who engaged in higher levels of physical activity (PA) reported significantly better QOL outcomes. Previous research supports these findings, demonstrating that regular PA enhances QOL for both healthy individuals and those with chronic conditions (R. Brand et al, 2006; E. Lindholm et al, 2003; W. J. Rejeski & S. L. Mihalko, 2001). While a correlation between health-related quality of life (HRQoL) and PA is evident, causative conclusions cannot be drawn. PA confers dual benefits: physical, including reduced illness risk and enhanced fitness, and psychological, including improved mental health and cognitive engagement (S. Saxena et al, 2005). Furthermore, participation in sports yields significant primary advantages associated with physical activity, which subsequently leads to secondary benefits encompassing personal and psychosocial development. Engagement in sporting activities fosters a sense of identity, purpose, and belonging for individuals, regardless of their physical or mental capabilities (Tudurache, A , 2024; Aeri & Verma, 2004; Telama et al, 2005). The influence of exercise on individuals has been systematically assessed in numerous studies, revealing a wide array of benefits pertaining to mental and behavioral health (Khan et al, 2022; Biddle & Asari, 2011; Moeijes et al, 2019; Crichton et al, 2023). Research indicates that individuals engaged in sports activities demonstrate significantly lower levels of hyperactivity, inattention, and impulsivity compared to their non-participating counterparts (Chan et al, 2022; Gangeh et al, 2022; Hoffman et al, 2022). Furthermore, participation in athletic endeavors has been linked to enhanced self-confidence and a decreased likelihood of experiencing anxiety, depression, and social behavioral inhibition among adolescents (Panza et al, 2020). These findings underscore the vital role of physical activity in fostering mental well-being and promoting healthier behavioral outcomes in youth populations.

The findings indicate that retirees engaging in recreational physical activities exhibit a significant enhancement in their physical and psychological quality of life (phy-QOL; psy-QOL), which serves as a crucial component of overall quality of life. This reinforces the recognized connection between physical activity (PA) and health-related quality of life (HRQoL). It is essential to examine the specific aspects of HRQoL enhancements linked to PA identified in this study, with a particular emphasis on the psychological advantages. Participation in physical activity is generally associated with two principal advantages: physical benefits, including a reduced risk of chronic illness and enhanced fitness levels, and psychological benefits, encompassing improved mental health and cognitive stimulation during physical engagement (S. Saxena et al, 2005).

In conclusion, the current study highlights both parallels and distinctions when compared to earlier research. However, all studies underscore the vital role of physical activity in enhancing both physical health-related quality of life (phy-QOL) and psychological health-related quality of life (psy-QOL). The results indicate a significant positive association between participation in physical activity (PA) and overall quality of life (QOL). However, further research is necessary to elucidate the direct effects of PA engagement on enhancements in health-related quality of life (HRQoL), as well as to explore the long-term implications of ongoing physical activity participation and its potential efficacy in reducing the risk of chronic health conditions.

Conclusions

This study has demonstrated that retired educators who participate in recreational physical activities experience enhanced physical and psychological quality of life. Additionally, the analysis indicated statistically significant differences ($p < 0.05$) in both physical quality of life (phy-QOL) and psychological quality of life (psy-QOL) based on the frequency of sports engagement, specifically between individuals practicing once or twice per week and those exercising three times per week.

To augment the validity of these findings, subsequent research should aim to employ a range of methodologies, incorporating diverse assessment instruments to clarify the fundamental principles linking physical activity with quality of life (QOL). Furthermore, a thorough exploration of additional benefits associated with regular physical activity is merited. This study also recommends the formulation of initiatives aimed at promoting physical activity participation among retired individuals, thereby optimizing their leisure time engagement.

Recommendations

- This research promotes the establishment of specific sports initiatives aimed at fostering a culture of physical activity within the retired population. These programs should focus on engaging and inspiring older adults to partake in physical activities, effectively utilizing their free time in a positive manner. The intended outcome of these initiatives is to improve multiple facets of quality of life, encompassing social interaction, physiological health, physical fitness, overall well-being, and psychological wellness.
- It is essential to promote the participation of retirees in sports-related exercises, as this engagement has the potential to augment their overall quality of life and improve their physiological, physical, and psychological competencies.
- Emphasizing the importance of health and the intrinsic connection between regular physical activity and a high quality of life is crucial. This understanding can guide individuals in selecting sports activities that specifically contribute to improving their quality of life and the functionality of various systems.

These recommendations are grounded in the study's findings and aim to deepen our understanding of the relationship between engagement in physical activity and the attainment of a favorable level of health-related quality of life (HRQoL).

Acknowledgement

- We extend our gratitude to all retired educators of EPS in Intermediate Education who consented to take part in our study.

Conflicts of Interest

- The authors declare that there are no conflicts of interest related to the topics discussed in this manuscript.

References

1. D. Cucinotta and M. Vanelli, "WHO declares COVID-19 a pandemic," *Acta bio medica: Atenei parmensis*, vol. 91, no. 1, p. 157, 2020.
2. H. Alfawaz et al., "Dietary intake and mental health among Saudi adults during COVID-19 lockdown," *Int J Environ Res Public Health*, vol. 18, no. 4, pp. 1–11, Feb. 2021, doi: 10.3390/ijerph18041653.
3. Makhlof Djerioui and Ameer Hamlaoui, "The degree of quality of life among retirees practicing recreational physical activity during the conona pandemic," *Journal of Sports Creativity*, vol. 13, no. 2, 2022.
4. M. KALAYCI, F. GÜLEROĞLU, B. GÖNÜLÜTAŞ, and M. C. KALAYCI, "Covid-19 pandemisinde fiziksel aktivite ve egzersizin önemi," *GERMENİCA Beden Eğitimi ve Spor Bilimleri Dergisi*, vol. 2, no. 1, pp. 30–40, 2021.

5. B. ÖZCAN and L. SARAÇ, "The Relationship between physical activity and quality of life during the COVID-19 pandemic: A case of female and male physical education teachers," *Pamukkale Journal of Sport Sciences*, vol. 12, no. 3, pp. 1–20, 2021.
6. W. Chai, C. R. Nigg, I. S. Pagano, R. W. Motl, C. Horwath, and R. K. Dishman, "Associations of quality of life with physical activity, fruit and vegetable consumption, and physical inactivity in a free living, multiethnic population in Hawaii: a longitudinal study," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 7, pp. 1–6, 2010.
7. Shibata, K. Oka, Y. Nakamura, and I. Muraoka, "Recommended level of physical activity and health-related quality of life among Japanese adults," *Health Qual Life Outcomes*, vol. 5, pp. 1–8, 2007.
8. W. Group, "The World Health Organization quality of life assessment (WHOQOL): position paper from the World Health Organization," *Soc Sci Med*, vol. 41, no. 10, pp. 1403–1409, 1995.
9. M. C. deSouza Minayo, Z. M. deAraújo Hartz, and P. M. Buss, "Quality of life and health: a necessary debate," *Cien Saude Colet*, vol. 5, no. 1, p. 7, 2000.
10. E. M. F. eu ry Seidl and C. M. L. da Costa Zannon, "Qualidade de vida e saúde: aspectos conceituais e metodológicos Quality of life and health: conceptual and methodological issues," *Cad. Saúde Pública*, vol. 20, no. 2, pp. 580–588, 2004.
11. G. C. M. F. Pucci, C. R. Rech, R. C. Fermino, and R. S. Reis, "Association between physical activity and quality of life in adults," *Rev Saude Publica*, vol. 46, pp. 166–179, 2012.
12. Anokye NK, Trueman P, Green C, Pavey TG, Taylor RS. Physical activity and health related quality of life. *BMC Public Health*. 2012;12(1):1–8.
13. K. S. Courneya and C. M. Friedenreich, "Physical exercise and quality of life following cancer diagnosis: a literature review," *Annals of behavioral medicine*, vol. 21, no. 2, pp. 171–179, 1999.
14. J. H. Mitchell and P. B. Raven, "Cardiovascular adaptation to physical activity," in *Physical Activity, Fitness and Health. International Proceedings and Consensus Statement*. Champaign (IL): Human Kinetics, 1994, pp. 286–298.
15. M. A. Babcock and J. A. Dempsey, "Pulmonary system adaptations: limitations to exercise," *Physical activity, fitness, and health*. 1st ed. Bouchard, C., Shepard, RJ, and Stephens, T. Edited by C. Bouchard, RJ Shepard, and T. Stephens. Human Kinetics, Champaign, Ill, pp. 320–330, 1994.
16. D. M. Landers and S. J. Petruzzello, "Physical activity, fitness, and anxiety.," 1994.
17. W. P. Morgan, "Physical exercise, fitness and depression," *Physical activity, fitness and health*, pp. 851–867, 1994.
18. E. McAuley, "Physical activity and psychosocial outcomes.," 1994.
19. P. Painter, L. Goldberg, and D. L. Elliot, "Exercise for individuals with end-stage renal disease," *W: Exercise for prevention and treatment of illness*. Goldberg L, Elliot DL (red.). Philadelphia, pp. 289–300, 1994.
20. F. Barker, L. Goldberg, and D. L. Elliot, "Exercise and pulmonary disease," *Exercise for Prevention and Treatment of Illness*. Philadelphia, PA: FA Davis Company, pp. 271–288, 1994.
21. N. Campaigne, L. Goldberg, and D. L. Elliot, "Exercise in the management of diabetes mellitus," *Exercise for Prevention and Treatment of Illness*. Philadelphia, PA: EA. Davis Company, pp. 173–188, 1994.
22. S. R. Clark, C. S. Burckhardt, R. M. Bennett, L. Goldberg, and D. L. Elliot, "The use of exercise to treat rheumatic disease," *Exercise for Prevention and Treatment of Illness*. Philadelphia, PA: EA. Davis Company, pp. 83–106, 1994.
23. T. Kavanagh et al., "Peak oxygen intake and cardiac mortality in women referred for cardiac rehabilitation," *J Am Coll Cardiol*, vol. 42, no. 12, pp. 2139–2143, 2003.
24. L. Goldberg and D. L. Elliot, "Exercise as treatment for essential hypertension," *Exercise for Prevention and Treatment of Illness*. Philadelphia, PA: FA Davis Company, pp. 27–47, 1994.
25. Courneya, K. S., & Friedenreich, C. M. (1999). Physical exercise and quality of life following cancer diagnosis: a literature review. *Annals of behavioral medicine*, 21(2), 171-179.
26. W. J. Rejeski, L. R. Brawley, and S. A. Shumaker, "Physical activity and health-related quality of life.," *Exerc Sport Sci Rev*, vol. 24, no. 1, pp. 71–108, 1996.
27. R. Bize, J. A. Johnson, and R. C. Plotnikoff, "Physical activity level and health-related quality of life in the general adult population: a systematic review," *Prev Med (Baltim)*, vol. 45, no. 6, pp. 401–415, 2007.
28. K. R. Fox, A. Stathi, J. McKenna, and M. G. Davis, "Physical activity and mental well-being in older people participating in the Better Ageing Project," *Eur J Appl Physiol*, vol. 100, pp. 591–602, 2007.
29. R. Bize, J. A. Johnson, and R. C. Plotnikoff, "Physical activity level and health-related quality of life in the general adult population: a systematic review," *Prev Med (Baltim)*, vol. 45, no. 6, pp. 401–415, 2007.
30. Özkan, F. Yaşartürk, and G. Elçi, "The relationship between leisure satisfaction, physical activity level and healthy life-style behaviors of sport science students during the COVID-19 pandemic," *Physical Education of Students*, vol. 25, no. 5, pp. 257–264, 2021.
31. M. El-Sfta, "Effectiveness of a sports recreation program on the quality of social life in the elderly, published scientific research," *Journal of Science and Arts of Physical Education, Faculty of Physical Education, Assiut University*, 2015.
32. J. Ra, S. An, and K. J. Rhee, "The relationship between psychosocial effects and life satisfaction of the Korean elderly: Moderating and mediating effects of leisure activity," *Journal of Arts and Humanities*, vol. 2, no. 11, pp. 21–35, 2013.
33. P. Angélico, J. A. de S. Crippa, and S. R. Loureiro, "Social anxiety disorder and social skills: A critical review of the literature.," *International Journal of Behavioral Consultation and Therapy*, vol. 7, no. 4, p. 16, 2013.

34. S. Burckhardt and K. L. Anderson, "Health and Quality of Life Outcomes The Quality of Life Scale (QOLS): Reliability, Validity, and Utilization Quality of Life Scale QOLS chronic illness outcomes quality of life evaluation Why assess Quality of Life in chronic illness? What does the Quality of Life Scale (QOLS) measure?," 2003. [Online]. Available: <http://www.hqlo.com/content/1/1/60>
35. Said, Kara, Construction and Validation of Adherence to Treatment Scale among patients with essential high blood pressure *Guru Journal of Behavioral and Social Sciences*, Vol 05, no 01, pp 639-644, 2017.
36. Bernard, Paquito, Isabelle Doré, Ahmed-Jérôme Romain, Gabriel Hains-Monfette, Celia Kingsbury, and Catherine Sabiston. 2018. Dose response association of objective physical activity with mental health in a representative national sample of adults: A cross-sectional study. *PLoS ONE* 13: e0204682. [CrossRef] [PubMed]
37. Khan, K.M., Thompson, A.M., Blair, S.N., Sallis, J.F., Powell, K.E., Bull, F. C., et al. (2012). Sport and exercise as contributors to the health of nations. *Lancet*, 380(9836), 59–64 [https://doi.org/10.1016/S0140-6736\(12\)60865-4](https://doi.org/10.1016/S0140-6736(12)60865-4)
38. Felfe, C., Lechner, M., & Steinmayr, A. (2016). Sports and child development. *PLoS One*, 11(5), <https://doi.org/10.1371/journal.pone.0151729>
39. Marquez, D. X., Aguiñaga, S., Vásquez, P. M., Conroy, D. E., Erickson, K. I., Hillman, C., ... & Powell, K. E. (2020). A systematic review of physical activity and quality of life and well-being. *Translational behavioral medicine*, 10(5), 1098-1109.
40. Bougherra, A. Hamlaoui, and A. Lebchiri, "Defining the standard levels of spontaneous cognitive flexibility among master's students," *Physical Education of Students*, vol. 27, no. 4, pp. 156–161, Aug. 2023, doi: 10.15561/20755279.2023.0402.
41. Antunes HK, Stella SG, Santos RF, Bueno OF, de Mello MT. Depression, anxiety and quality of life scores in seniors after an endurance exercise program. *Braz J Psychiatry*. 2005;27(4):266–271.
42. Morgan WP, O'Connor PJ, Ellickson KA, Bradley PW. Personality structure, mood states, and performance in elite male distance runners. *Int J Sport Psychol*. 1988;19(4):247–263.
43. Al-Johani, R. M. (2021). Effect of physical activity on mental wellbeing among teachers of secondary school in Almadina city, Saudi Arabia. *Journal of Family Medicine and Primary Care*, 10(11), 4264-4271.
44. F. Ozdemir et al., "The role of physical activity on mental health and quality of life during COVID-19 outbreak: A cross-sectional study," *Eur J Integr Med*, vol. 40, p. 101248, 2020.
45. J. Peráčková and P. Peráček, "Sport for the subjective dimensions of quality of life," in *Quality of Life-Biopsychosocial Perspectives*, IntechOpen, 2019.
46. Areej Ahmed Saeed Al-aqran, "Practicing sports activities and their relationship to quality of life among female university students," *International Journal on Humanities and Social Sciences*, vol. 12, pp. 137–163, Mar. 2020, doi: 10.33193/ijohss.12.2020.81.
47. M. S. Mahfouz et al., "Physical Activity, Mental Health, and Quality of Life among School Students in the Jazan Region of Saudi Arabia: A Cross-Sectional Survey When Returning to School after the COVID-19 Pandemic," *Healthcare (Switzerland)*, vol. 11, no. 7, Apr. 2023, doi: 10.3390/healthcare11070974.
48. R. Brand, W. Schlicht, K. Grossmann, and R. Duhnsen, "Effects of a physical exercise intervention on employees' perceptions of quality of life: a randomized controlled trial," *Sozial-Und Präventivmedizin*, vol. 51, pp. 14–23, 2006.
49. E. Lindholm, H. Brevinge, C.-H. Bergh, U. Körner, and K. Lundholm, "Relationships between self-reported health related quality of life and measures of standardized exercise capacity and metabolic efficiency in a middle-aged and aged healthy population," *Quality of Life research*, vol. 12, pp. 575–582, 2003.
50. W. J. Rejeski and S. L. Mihalko, "Physical activity and quality of life in older adults," *J Gerontol A Biol Sci Med Sci*, vol. 56, no. suppl_2, pp. 23–35, 2001.
51. S. Saxena, M. Van Ommeren, K. C. Tang, and T. P. Armstrong, "Mental health benefits of physical activity," *Journal of Mental Health*, vol. 14, no. 5, pp. 445–451, 2005.
52. Tudurache, A. I., Lazar, D. E., Postolica, R., & Ciuntea, M. L. (2024). THE IMPACT OF SPORT ON THE QUALITY OF LIFE AMONG CHILDREN AND ADOLESCENTS. *Sport & Society/Sport si Societate*, 24(1).
53. Aeri, P., & Verma, S.K. (2004). Child's socialization through play among 2-4 years old children. *The Anthropologist*, 6(4), 279–281, <https://doi.org/10.1080/09720073.2004.11890868>
54. Telama, R., Yang, X., Viikari, J., Välimäki, I., Wanne, O., & Raitakari, O. (2005). Physical activity from childhood to adulthood: a 21-year tracking study. *American Journal of Preventive Medicine*, 28(3), 267–273
55. Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *British Journal of Sports Medicine*, 45(11), 886-95, <https://doi.org/10.1136/bjsports-2011-090185>
56. Moeijes, J., van Busschbach, J. T., Bosscher, R. J., & Twisk, J. W. R. (2019). Sports participation and health-related quality of life: a longitudinal observational study in children. *Quality of Life Research*, 28(9), 2453-2469, <https://doi.org/10.1007/s11136-019-02219-4>
57. Crichton, M., Bigelow, H., & Fenesi, B. (2023). Physical Activity and Mental Health in Children and Youth: Clinician Perspectives and Practices. *Child Youth Care Forum*, <https://doi.org/10.1007/s10566-023-09782-5>
58. Chan, Y.S., Jang, J.T., & Ho, C.S. (2022). Effects of physical exercise on children with attention deficit hyperactivity disorder. *Biomedical Journal*, 45(2), 265-270, <https://doi.org/10.1016/j.bj.2021.11.011>

59. Ganjeh, P., Hagmayer, Y., Meyer, T., Kuhnert, R., Ravens-Sieberer, U., von Steinbuechel, N., Rothenberger, A., & Becker, A. (2022). Physical activity and the development of general mental health problems or attentiondeficit hyperactivity disorder (ADHD) symptoms in children and adolescents: A cross-lagged panel analysis of long-term follow-up epidemiological data. *Frontiers in Behavioral Neuroscience*, 16, 933139, <https://doi.org/10.3389/fnbeh.2022.933139>
60. Hoffmann, M.D., Barnes, J.D., Tremblay, M.S., & Guerrero, M.D. (2022). Associations between organized sport participation and mental health difficulties: Data from over 11,000 US children and adolescents. *PLoS One*, 17(6), <https://doi.org/10.1371/journal.pone.0268583>
61. Panza, M. J., Graupensperger, S., Agans, J. P., Doré, I., Vella, S. A., & Evans, M. B. (2020, May 21). Adolescent Sport Participation and Symptoms of Anxiety and Depression: A Systematic Review and Meta-Analysis. *Journal of Sport & Exercise Psychology*, 42(3), 201-218, <https://doi.org/10.1123/jsep.2019-0235>