

Physical Activity and Quality of Life among Sport Sciences Students During COVID-19-Related Social Isolation

Adnan Mehmedovic¹

¹ Institute of Health Sciences, Afyon Kocatepe University, Afyonkarahisar, Türkiye

Abstract – This cross-sectional study examined physical activity and quality of life among 252 sport sciences students during COVID-19-related social isolation using the IPAQ-SF and WHOQOL-BREF. Mean activity was 7083.00 ± 2422.02 MET-min/week and differed by sex, department, and study year. Activity correlated positively with all quality-of-life scores, most strongly with psychological ($r = 0.41$) and physical health ($r = 0.40$). Quality-of-life scores jointly explained 18.4% of activity variance. Physical and psychological health were independent correlates. These findings, based on self-reported data from a single faculty, indicate associations rather than causal effects; longitudinal research is needed to establish causality.

Keywords – COVID-19, physical activity, quality of life, social isolation, university students.

1. Introduction

The COVID-19 pandemic affected daily life not only through infectious disease risk but also through changes in education, movement behaviour, psychological well-being, and social participation. Measures such as social isolation, distance education, restrictions on public gatherings, and the temporary closure of sport facilities disrupted the routines of many young students [1], [2], [3], [4]. Physical activity is generally defined as bodily movement produced by skeletal muscles that results in energy expenditure and is recognized as a central behavioural determinant in the prevention of non-communicable diseases and the protection of general health [5], [6].

During the pandemic, reduced opportunities for structured exercise, increased sedentary time, and the dominance of home-based life created a risk profile that could negatively affect quality of life. Quality of life is a multidimensional construct that includes perceived physical, psychological, social, and environmental well-being. University students became a particularly vulnerable group during the pandemic because they were exposed to academic uncertainty, reduced peer interaction, economic pressure, and concerns about the future [7], [8].

Sport sciences students represent a special population in this context. Their academic field is directly related to movement, exercise, coaching, recreation, and physical education. However, pandemic conditions limited practical courses, training environments, facility use, and face-to-face sport participation. Their professional orientation may have protected their physical activity behaviour, but the restrictions may also have altered the quality, context, and sustainability of that behaviour.

Previous research has shown a positive association between physical activity and quality of life among university students [9], [10], [11]. Studies focusing specifically on sport sciences students during pandemic-related social isolation remain important because this group may respond differently from the general student population.

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Corresponding author: Adnan Mehmedovic,
Institute of Health Sciences, Afyon Kocatepe University,
Afyonkarahisar, Türkiye
Email: 22853202006@gazi.edu.tr

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The aim of this study was to determine the physical activity and quality of life levels of sport sciences students during COVID-19-related social isolation; to examine whether these levels differed according to sex, age, department, and year of study; and to evaluate the association between physical activity and quality-of-life domains. The study also tested whether quality-of-life domains predicted physical activity levels.

2. Material and Methods

2.1. Study Design and Participants

This quantitative cross-sectional correlational study included students enrolled in the Faculty of Sport Sciences at Afyon Kocatepe University during the 2020–2021 academic year. Convenience sampling was used, and 252 students participated: 127 male (50.4%) and 125 female (49.6%). Age was categorized as under 18, 18–20, 21–23, 24–26, and over 26 years. Participants were enrolled in Physical Education and Sports Teaching ($n = 79$), Coaching Education ($n = 87$), or Recreation ($n = 86$).

2.2. Data Collection Tools

Data were collected through an online survey comprising a personal information form, the International Physical Activity Questionnaire–Short Form (IPAQ-SF), and the World Health Organization Quality of Life Scale–Short Form (WHOQOL-BREF). The IPAQ-SF assesses walking, moderate-intensity activity, and vigorous-intensity activity during the preceding seven days and yields a total MET-min/week score. Its original reliability and validity were established in [12], and the Turkish version was validated in [13]. The WHOQOL-BREF provides scores for general health, physical health, psychological health, social relationships, and environment.

2.3. Statistical Analysis

Data were analysed using IBM SPSS Statistics 24. Descriptive statistics included mean, standard deviation, minimum, maximum, frequency, and percentage. Skewness and kurtosis coefficients were within -1.5 to $+1.5$; therefore, parametric tests were used [14].

Sex differences in physical activity were analysed by independent-samples t -test, and differences by age, department, and year by one-way ANOVA. MANOVA was used for quality-of-life domains.

Associations were tested by Pearson correlation, and multiple linear regressions examined whether quality-of-life domains predicted physical activity. The type I error level was 0.05.

2.4. Ethical Considerations

The data collection instruments used in this study were approved by the Afyon Kocatepe University Health Sciences Scientific Research and Publication Ethics Committee on 18 March 2021 (decision no. 2021/13). Participation was voluntary, and participants received information about the study before completing the online survey.

3. Results

Table 1 presents descriptive statistics for physical activity and quality-of-life scores. Participants reported a mean physical activity level of 7083.00 ± 2422.02 MET-min/week. Mean quality-of-life scores ranged from 2.78 for physical health to 3.27 for social relationships.

Table 1. Descriptive statistics for physical activity (MET-min/week) and quality-of-life variables

Variable	N	Mean	SD	Min	Max
Physical activity	252	7083.00	2422.02	2376.00	10902.00
General health	252	3.09	0.81	1.00	5.00
Physical health	252	2.78	0.62	1.71	4.43
Psychological health	252	3.09	0.64	2.00	5.00
Social relationships	252	3.27	0.86	1.67	5.00
Environment	252	3.13	0.69	1.75	5.00

Physical activity differed significantly by sex, $t = -3.615$, $p < 0.001$. Female students scored higher (7626.19 ± 2200.18) than male students (6548.59 ± 2518.19). No difference was found by age, $F(4, 247) = 1.398$, $p = 0.235$. Differences were significant by department, $F(2, 249) = 39.654$, $p < 0.001$, with Coaching Education students scoring higher than the other departments, and by year of study, $F(3, 248) = 4.138$, $p = 0.007$, with second-year students scoring lower than third- and fourth-year students.

MANOVA indicated a significant effect of sex on quality-of-life domains; female students reported higher general health and social relationships.

Age differences were significant for physical health, psychological health, social relationships, and environment, with students over 26 tending to report lower scores in some domains.

Department was significant across all WHOQOL-BREF domains, with Physical Education and Sports Teaching students reporting higher quality of life. Year of study was significant for general, physical, and psychological health, with fourth-year students reporting lower scores in some domains.

Table 2. Correlations between physical activity and quality-of-life domains

Quality-of-life score	Correlation with physical activity
General health	$r = 0.31, p < 0.01$
Physical health	$r = 0.40, p < 0.01$
Psychological health	$r = 0.41, p < 0.01$
Social relationships	$r = 0.31, p < 0.01$
Environment	$r = 0.35, p < 0.01$

As shown in Table 2, physical activity correlated positively with every measured quality-of-life score. The strongest associations were with psychological health ($r = 0.41, p < 0.01$) and physical health ($r = 0.40, p < 0.01$). The multiple regression analysis in Table 3 showed that quality-of-life domains significantly predicted physical activity, $R = 0.430$, $R^2 = 0.184$, $F = 11.130$, $p < 0.001$.

Physical health ($\beta = 0.222, p = 0.046$) and psychological health ($\beta = 0.319, p = 0.023$) were significant independent predictors.

Table 3. Multiple linear regression predicting physical activity

Predictor	B	SE	β	t	p
Constant	-366.15	—	—	—	—
General health	3.854	269.58	0.001	0.014	0.989
Physical health	855.55	426.33	0.222	2.007	0.046
Psychological health	1187.99	517.97	0.319	2.294	0.023
Social relationships	36.35	260.35	0.013	0.140	0.889
Environment	405.45	477.20	0.116	0.850	0.396

Note. Dependent variable: physical activity (MET-min/week). $R = 0.430$, $R^2 = 0.184$, $F = 11.130$, $p < 0.001$. B: unstandardized coefficient; SE: standard error; β : standardized coefficient. The intercept was corrected to -366.15 based on the reported variable means and regression coefficients.

4. Discussion

Students reported high physical activity despite pandemic restrictions. Although many pandemic studies found reduced activity and increased sedentary behaviour [1], [4], [15], [16], the present result may reflect sport sciences students' academic background, exercise knowledge, professional orientation, and identification with sport.

Female students had higher activity scores, a pattern that is not universal in the literature. Sex differences vary by context, sample, and activity type [17], [18]. In this setting, the result may reflect adaptation to home-based exercise or departmental composition and should not be generalized beyond the sample.

Higher activity among Coaching Education students aligns with that department's performance orientation. Conversely, Physical Education and Sports Teaching students reported higher quality of life, potentially reflecting professional identity, academic support, or social belonging. Lower activity among second-year students and lower scores in some quality-of-life domains among fourth-year students indicate that support should be tailored by study year.

The strongest finding was the positive association of physical activity with general, physical, psychological, social, and environmental quality of life, consistent with earlier research [9], [10], [11]. During social restrictions, activity may provide structure, self-regulation, bodily competence, and psychological resilience [19], [20]. Physical and psychological health also independently predicted activity, suggesting a dynamic and potentially bidirectional relationship [21], [22].

This study is limited by its cross-sectional design, convenience sample from one faculty, and reliance on self-report instruments. Sleep quality, screen time, nutrition, social support, and psychological resilience were not measured. These limitations restrict causal interpretation and generalizability. No pre-pandemic baseline or comparison group was included, so changes attributable to social isolation cannot be determined. Self-reported activity is susceptible to recall and reporting bias.

5. Conclusion

Sport sciences students reported a mean physical activity level of 7083.00 MET-min/week during COVID-19-related social isolation. Activity was positively associated with all measured quality-of-life scores. Female students reported greater activity than male students; Coaching Education students reported greater activity, whereas Physical Education and Sports Teaching students reported higher quality of life. Physical and psychological health was independently associated with activity in the regression model. These cross-sectional findings cannot establish whether social isolation changed activity or whether activity improved quality of life. Universities may consider accessible physical-activity opportunities alongside psychological support, while future longitudinal studies using objective activity measures and multi-university samples should evaluate changes over time and the effectiveness of such support.

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