

## LIFESTYLE OF WEIGHT TRAINING PRACTITIONERS DURING THE CORONAVIRUS PANDEMIC: DIFFERENCES BETWEEN SEXES IN A CROSS-SECTIONAL STUDY

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### ABSTRACT

The present study aims to investigate the lifestyle of weight training (WT) practitioners on health risk (HR), nutritional intake (NI), and quality of life (QoL), as well as to test the differences between sexes during the coronavirus pandemic. Through web surveys, 47 volunteers (17 men with  $32.8 \pm 10.8$  and 30 women with  $30.4 \pm 9.1$  years old) participated in the study. Body mass index was calculated using self-reported data. A semi-structured form was used to obtain sociodemographic information, life habits, compliance with preventive measures, and practice profile. The Physical Activity Readiness Questionnaire (PAR-Q), assessing cardiovascular and osteoarticular risk and medication use, the Food Guide for the Brazilian Population, and the Eurohis-Qol-8 measured the SR, NI, and QoL, respectively. Higher body mass and height were observed in men ( $p < 0.0001$ ). Regardless of sex, most have brown/black skin, are single, completed high school, have healthy habits, and complied with preventive measures. Men are more likely to develop osteoarticular problems ( $p = 0.004$ ). Regarding WT, most have  $\geq 12$  months of experience, frequency  $> 3$  times a week, health/leisure goals, session duration under (men) and above (women) 60 minutes, and perceive improvement in health and professional importance. Men performed fewer repetitions ( $p < 0.004$ ), and the highest prevalence of in natura food consumption was for women ( $p < 0.03$ ). No differences were observed in QoL. It is concluded that males had a higher osteoarticular risk, and females consumed more natural foods during the pandemic. Regardless of sex, there was no reduction in the QoL of WT practitioners.

**Keywords:** SARS-CoV-2; Nutritional Intake; Resistance Training.

## INTRODUCTION

Recently the world population has been surprised by the coronavirus pandemic, which causes COVID-19. This respiratory disease contaminates by salivary droplets with a high mortality rate, which has forced health managers to take preventive measures, such as the recommendation of the use of 70% alcohol, constant use of masks, distancing between people of at least 1.5 meters, as well as the collective social isolation of the population. These restrictions were extremely important to reduce the projection, contamination, and protection of the population's life (MATTIOLI et al., 2020). However, this new health condition associated with the uncertainties of the moment promoted changes in the population's lifestyle that negatively affected people's lives. An increase in the development of sedentary behavior has been identified, which has contributed to the increase of the body mass index (BMI) in populations of various age groups, resulting in the prevalence of obesity and associated diseases (FLANAGAN et al., 2021; DE OLIVEIRA et al., 2021).

The pandemic prevented some part of the population from working, thus generating an economic crisis that affected the healthy lifestyle, especially of individuals with low socioeconomic status, increasing the rates of anxiety, depression, anger, and stress, psychological factors that influence the consumption of highly processed foods, rich in sugar, fat, and alcoholic beverages, which may increase the risk of cardiovascular diseases (MATTIOLI et al., 2020; SULEJMANI et al., 2021).

The consequences of the pandemic occurred in populations with different age groups, demonstrating that quarantine at home increased anxiety due to loneliness, stress, loss of freedom to move around, fear of losing loved ones, becoming infected or losing a job, adaptation to remote work, and uncertainties for the future; all these variables contributed to the decline in quality of life levels (FAULKNER et al., 2021; FERREIRA et al., 2021).

The mandatory interruption of commuting activities during the pandemic negatively affected individuals' physical condition and health, leading to osteoarticular dysfunction and loss of neuromuscular capacity (GENTIL et al., 2020). On the other hand, exercise has broad health benefits. In particular, Weight Training (WT) can be considered an important strategy to minimize such effects and aid recovery from clinical conditions after coronavirus (GENTIL et al., 2020) infection. Weight training, an exercise model where the

muscular activity is performed with loads against external resistance, can use free weights, dumbbells, bars, body weight, or specific equipment that primarily aims to increase muscular strength. It is widely practiced and recommended to integrate physical conditioning programs to maintain cardiorespiratory and neuromuscular capacity in the adult population due to its physiological, metabolic, and tissue effects, helping to maintain health (GARBER et al., 2011).

It is a consensus that practicing physical exercises is essential for health maintenance; however, a pre-participation evaluation is recommended to detect health risks and guide people who seek to increase their physical conditioning to undergo medical examinations before starting a physical training program. This recommendation is essential, especially for beginners or individuals who have paused their training program (WARBURTON et al., 2011). The importance of this type of screening during the pandemic is also evident due to changes in habits such as interruption of the exercise routine.

Weight training is related to healthy habits; moreover, practitioners of this exercise model showed improvement in several QL indicators, such as physical capacity, self-image, and mental well-being (COLLINS et al., 2021).

Therefore, the pandemic made it impossible for individuals to move freely and attend sports academies, thus preventing the practice of specific modalities such as WT. From this perspective, it is believed that this interruption may have interfered with the health risk, the consumption of ultra-processed foods and the quality of life of practitioners.

During the pandemic, sports gyms were recognized as an essential activity, certifying their importance for health in situations of public calamity. Thus, their reopening was approved as long as the establishment complied with the biosafety measures recommended by the World Health Organization (BRASIL, 2020 LAW No. 13.979, MUNICIPAL LAW No. 4.261, OF APRIL 29, 2021).

The coronavirus pandemic has promoted significant changes in the lifestyle of the population at a global level (FLANAGAN et al., 2021); however, many issues are still not fully clarified, mainly those associated with the lifestyle of exercise practitioners, so it would be of paramount importance to investigate possible changes in this population, as well as supporting public policies and strengthening the importance of physical exercise in times of health crisis. Thus, the present aims to investigate



the lifestyle of WT practitioners related to health risk, food consumption, and quality of life during the coronavirus pandemic.

## METHODOLOGY

This study is a cross-sectional descriptive analysis conducted in the city of Jataí, located in the southwest of the state of Goiás, Brazil, with approximately 105.729 inhabitants (IBGE, 2022), a municipality whose socio-economic base comes from agribusiness. Data was collected in a gym located in a central urban space. The study was approved by the Ethics Committee for Research involving Human Beings of the Federal University of Jataí (UFJ), with protocol number 4.012.158, and was conducted under the principles set out in resolution 466/12 of the National Health Council.

### *Participants*

The sample was by convenience, the questionnaire was sent to the 91 registered practitioners, 51.6% of whom completed it. A total of 47 Weight training practitioners of both sexes participated in the study. Inclusion criteria were age 18 or older and experience with WT for at least three months. Exclusion criteria were individuals who practiced other forms of physical exercise or did not complete the questionnaire in full.

### *Procedures*

The research was conducted by web surveys (BONI, 2020) to maintain the restrictive measures and social distancing between researcher and volunteer. Data collection was performed between April and July 2021, the period of reopening of gyms (Ordinary Law No. 4261 of April 28, 2021, BRASIL, 2021) with attendance contingent of 30% of their total capacity and scheduled time, in addition to compliance with established biosafety protocols (Decree no. 9.848, of April 13, 2021) (DECRETO N° 9.848, 2021).

Initially, a 2-minute video was recorded by the researchers inviting the volunteers and clarifying the bioethical aspects of the research. Together with the video, a link was sent with an electronic form developed by the Google Forms® tool and sent to the participants through WhatsApp®, managed by professionals from the gym.

The instrument had an initial presentation section,

an invitation to participate, and the informed consent form text, followed by the option to participate or not in the research. To those who agreed to participate in the research, the form opened the sessions according to their completion until its closure with thanks for participating.

### *Instruments*

*Physical characteristics, sociodemographic profile, lifestyle habits, and preventive measures of contamination of coronavirus:*

The variable age and self-reported physical characteristics were surveyed: body mass (kg) and height (m) were used to perform the body mass index (BMI) calculation ( $\text{Kg/m}^2$ ).

The following questions were asked to identify the sociodemographic profile and lifestyle habits: age, skin color self-reported, level of education, and marital status. Also, diseases and medication use, dietary control, alcohol consumption, and use of cigarettes, tobacco, or shisha were surveyed. They were also asked about the fulfilment of preventive measures in the gym regarding the contamination of coronavirus during the flexibility period of SI, the use of masks, 70% alcohol, and social distancing during the WT sessions.

*Practice Profile and acute variables of WT programs:*

To detect the WT practice profile were assessed the practice time in months, weekly frequency, session duration (in minutes), goal/motivation with the practice of the modality, health perception, importance, and how the physical education professional can help during WT practice.

The following acute WT variables were surveyed: number of exercises per session, number of sets, repetitions, breaks between sets and exercises, and rate of perceived exertion (RPE) after the last WT session (LOPES et al., 2022).

*Exercise Readiness and Health Risk Assessment:*

The "PAR-Q" (Physical Activity Readiness Questionnaire) was used to assess readiness and risk stratification. This questionnaire aims to identify whether there is a need to conduct or guide a medical assessment before entering the individual into an exercise program. Questions are asked about possible heart problems, symptoms during PA practice (chest pain, dizziness, loss

of balance), if the individual has any osteoarticular problems, if the doctor has recommended medication for hypertension or cardiovascular disorders and if there is any other physical reason that prevents them from practicing exercise. If the individual responds positively to one or more questions, a clinical evaluation is advised before joining the exercise program (WARBURTON et al., 2011).

#### *Food Consumption:*

Food Consumption was assessed using a questionnaire according to the nature of food processing in the Food Guide for the Brazilian Population (BRASIL, 2014). The foods were listed and classified as: in natura, oils, fats, salt and sugar, processed foods, and ultra-processed foods. Their weekly consumption frequency was classified as: every day; 5 to 6 times; 2 to 4 times; 1 time a week; and never, or almost never. Finally, the number of servings were: 0; 1 to 2; 3 to 4; 5 to 8; 8 to 10; and more than 10 servings (BRASIL, 2014).

#### *Life quality:*

Life quality was measured by the EUROHIS-QOL-8 questionnaire, which is composed of 8 questions about perceptual dimensions, health and performance for activities of daily living, own satisfaction with personal relationships, and with oneself, with housing and financial conditions. The result is a global index calculated

from the sum of the eight questions, with the higher value corresponding to a better perception of QL (PEREIRA et al., 2011).

#### *Statistical analysis:*

Initially, quantitative data were subjected to the Shapiro-Wilk normality test. The parametric data were presented as mean and standard deviation and the non-parametric data as median and interquartile range. The comparison between body mass, height, age, and BMI was performed using Student's t-test. The comparisons between the WT program variables were performed using the Mann-Whitney test. For the nominal variables, the chi-square or Fisher's exact test of association was used, followed by the Odds Ratio and 95% confidence interval CI 95%. The statistical package used in this study was the GraphPad Prisma 7.04 program. The minimum significance index adopted was  $p < 0.05$ .

## RESULTS

Table 1 shows the values related to age and physical characteristics (body mass, height, and BMI) of WT practitioners. The Student's t-test pointed out differences between sexes regarding body mass ( $p < 0.0001$ ) and height ( $p < 0.0001$ ). On the other hand, no differences between sexes were observed in age ( $p = 0.43$ ) and BMI ( $p = 0.07$ ).

**Table 1.** Age and physical characteristics; body mass, height, and BMI of WT practitioners during the coronavirus pandemic caused by the coronavirus pandemic, 2021, (n=47).

Variables	Men	Women	p
Age (years)	32.8 ± 10.8	30.4 ± 9.1	0.43
Body mass (kg)	78.2 ± 8.3	65.1 ± 8.9	< 0.0001
Height (m)	1.74 ± 0.08	1.63 ± 0.05	< 0.0001
BMI (Kg/m <sup>2</sup> )	25.7 ± 2.1	24.2 ± 3.0	0.07

BMI, body mass index. Data presented as mean and standard deviation. Comparison between groups was made using the Student's t-test. Significance of  $p < 0.05$ .

Regarding the sociodemographic profile, it was observed that, regardless of sex, most participants have brown or black skin, single or divorced, and have completed high school. Moreover, regarding lifestyle

habits, it can be verified that most individuals maintain healthy habits, do not smoke or drink alcohol, and take care of their diet (Table 2).

**Table 2.** Sociodemographic profile and lifestyle habits of WT practitioners during the coronavirus pandemic, 2021, (n=47).

Variables	Men (17)	Women (30)	OR (CI 95%)	p
	n (%)	n (%)		
<b>Skin color</b>				
White	5 (29.4)	14 (46.6)	0.47 (0.13 – 1.68)	0.35
Brown/Black	12 (70.6)	16 (53.4)		
<b>Marital status</b>				
Married	5 (29.4)	9 (30.0)	0.97 (0.26 – 3.58)	1.00
Single/Divorced	12 (70.6)	21(70.0)		
<b>Education</b>				
High school	13 (76.5)	16 (53.3)	2.84 (0.75 – 10.76)	0.13
College degree	4 (23.5)	14 (46.7)		
<b>Smokes</b>				
No	17 (100.0)	28 (93.3)	3.07 (0.13 – 67.81)	0.52
Yes	0 (0)	2 (6.7)		
<b>Drinks alcoholic beverages</b>				
No	9 (53.0)	16 (53.3)	0.98 (0.29 – 3.24)	1.00
Yes	8 (47.0)	14 (46.7)		
<b>Diet</b>				
No	8 (47.0)	11 (36.7)	1.53 (0.45 – 5.13)	0.54
Yes	9 (53.0)	19 (63.3)		

OR, odds ratio; CI 95%, 95% confidence interval. Significance of  $p < 0.05$ .

Table 3 shows the preventive measures for contamination by coronavirus in the gym. It is possible to notice that individuals, regardless of sex, were mostly

taking the necessary precautions to avoid contamination by the virus during exercise sessions.

**Table 3.** Preventive measures of coronavirus contamination of WT practitioners during the coronavirus pandemic, 2021, (n=47).

Variables	Men	Women	OR (CI 95%)	p
	n (%)	n (%)		
<b>Do you wear a mask during training?</b>				
No	0 (0)	1 (3.3)	0.56 (0.02 – 14.57)	1.00
Yes	17 (100)	29 (96.7)		
<b>Do you use 70% alcohol during training?</b>				
No	0 (0)	3 (10.0)	0.22 (0.01 – 4.61)	0.29
Yes	17 (100)	27 (90.0)		
<b>Do you keep social distancing during training?</b>				
No	0 (0)	6 (20.0)	0.10 (0.00 – 2.04)	0.07
Yes	17 (100)	24 (80.0)		

OR, odds ratio; CI 95%, 95% confidence interval. Significance of  $p < 0.05$ .

Table 4 presents the data obtained by PAR-Q. An association between sexes was observed concerning the aggravation of bone or joint problems with the practice, in

which men presented more chances to develop it than women ( $p = 0.004$ ).

**Table 4.** PAR-Q (Physical Activity Readiness Questionnaire) values of WT practitioners during the coronavirus pandemic, 2021, (n=47).

Variables	Men	Women	OR (CI 95%)	p
	n (%)	n (%)		
<b>Has your doctor ever told you to do PA only under prescription?</b>				
No	17 (100)	30 (100)	-	-
Yes	0 (0)	0 (0)		
<b>Do you feel chest pain during PA?</b>				
No	17 (100)	29 (96.7)	1.78 (0.06 – 46.16)	1.00
Yes	0 (0)	1 (3.3)		
<b>Have you felt chest pain in the last month without practicing PA?</b>				
No	17 (100)	29 (96.7)	1,78 (0.06 – 46.16)	1.00
Yes	0 (0)	1 (3.3)		
<b>Have you ever had dizziness or loss of consciousness during PA?</b>				
No	15 (88.2)	27 (90.0)	0.83 (0.12 – 5.55)	1.00
Yes	2 (11.8)	3 (10.0)		
<b>Do you have a bone or joint problem that could be aggravated by PA?</b>				
No	12 (70.6)	30 (100)	0.03 (0.001 – 0.72)	0.004
Yes	5 (29.4)	0 (0)		
<b>Have you ever been prescribed medication to control your BP or any cardiovascular condition?</b>				
No	17 (100)	27 (90.0)	4.45 (0.21 – 91.64)	0.29
Yes	0 (0)	3 (10.0)		
<b>Do you know of any reason that prevents you from practicing PA?</b>				
No	17 (100)	29 (96.7)	1.78 (0.06 – 46.16)	1.00
Yes	0 (0)	1(3.3)		

PA, physical activity; BP, blood pressure; OR, odds ratio; CI 95%, 95% confidence interval. Significance of  $p < 0.05$ .

Table 5 shows the profile of WT practice. It was observed that most individuals had more than 12 months of experience, with a weekly frequency of more than three times, and that the goal meets the dimensions of health and leisure. Regarding sex, it was observed that most men train

for less than 60 minutes and women for more than 60 minutes. However, all the individuals perceived improvements in their health with the practice considering the importance of having a professional present during the sessions, mainly to help orient and prescribe the WT.

**Table 5.** Profile of WT practice during the coronavirus pandemic, 2021, (n=47).

Variables	Men n (%)	Women n (%)	OR (CI 95%)	P
<b>Time of practice of WT</b>				
Up to 12 months	2 (11.8)	10 (33.3)	0.26 (0.05 – 1.40)	0.16
More than 12 months	15 (88.2)	20 (66.7)		
<b>Weekly frequency</b>				
Up to 3 times per week	3 (17.6)	4 (13.3)	1.39 (0.27 – 7.12)	0.69
More than 3 times per week	14 (82.4)	26 (86.7)		
<b>Duration of each session</b>				
Up to 60 minutes	10 (58.8)	14 (46.7)	1.63 (0.49 – 5.43)	0.54
More than 60 minutes	7 (41.2)	16 (53.3)		
<b>The goal of the practice</b>				
Health/leisure	11 (64.7)	18 (60.0)	1.22 (0.35 – 4.20)	1.00
Aesthetics/competition	6 (35.3)	12 (40.0)		
<b>Do you notice any improvement in your health?</b>				
No	0 (0)	0 (0)	-	-
Yes	17 (100)	30 (100)		
<b>Do you consider important the presence of a professional during WT?</b>				
No	0 (0)	0 (0)	-	-
Yes	17 (100)	30 (100)		
<b>How the professional can help you</b>				
Physical evaluation	1 (5.9)	2 (6.7)	0.87 (0.07– 10.43)	1.00
Orienting and prescribing training	16 (94.1)	28 (93.3)		

OR, odds ratio; CI 95%, 95% confidence interval. Significance of  $p < 0.05$ .

Table 6 presents the comparisons between sexes concerning the variables of the WT programs performed by men and women. The Mann-Whitney test indicated

differences between sexes only about the number of repetitions per series ( $p=0.004$ ), in which men performed fewer repetitions than women.

**Table 6.** Acute variables of WT programs performed by practitioners during the coronavirus pandemic, 2021, (n=47).

Variables	Men	Women	p
Number of exercises per session	8 (6 – 10)	7 (6 – 8,2)	0.08
Number of sets per exercise	4 (4 – 5)	4 (4 – 5)	0.27
Number of repetitions per set	12 (12 – 15)	15 (15 – 15)	0.004
Pause between sets (s)	45 (30 – 60)	35 (30 – 60)	0.21
Pause between exercises (s)	60 (52.5 – 75)	60 (60 – 75)	0.89
RPE after the last session	6 (4.5 – 6.5)	5 (4 – 6)	0.25

RPE, rate of perceived exertion. Data presented as median and interquartile range. The comparison between sexes was made using the Mann-Whitney test. Significance  $p < 0.05$ .

Regarding nutritional intake, it was observed that women tend to ingest more often in natura foods than men ( $p=0.03$ ), with no associations being observed about the

quantity of these foods concerning sex ( $p=0.81$ ). Furthermore, for the intake of fats ( $p=0.29$ ), processed foods ( $p=0.73$ ), and ultra-processed foods ( $p=0.24$ ), no associations between sexes were observed (Table 7)

**Table 7.** Nutritional intake of WT practitioners during the coronavirus pandemic, 2021, (n=47).

Variables	Men n (%)	Women n (%)	Chi-square	p
<b>In natura food</b>				
Every day	9 (52.9)	20 (66.7)	10.67	0.03
5 to 6 times a week	8 (47.1)	3 (10.0)		
2 to 4 times a week	0 (0)	5 (16.7)		
Once a week	0 (0)	1 (3.3)		
Never or almost never	0 (0)	1 (3.3)		
<b>Amount</b>				
0 servings	0 (0)	1 (3.3)	2.22	0.81
1 to 2 servings	1 (5.9)	2 (6.7)		
3 to 4 servings	10 (58.8)	12 (40.0)		
5 to 8 servings	4 (23.5)	8 (26.7)		
8 to 10 servings	1 (5.9)	3 (10.0)		
More than 10 servings	1 (5.9)	4 (13.3)		
<b>Oils, fats, salt, and sugar</b>				
Every day	7 (41.2)	19 (63.3)	6.07	0.29
5 to 6 times per week	2 (11.8)	2 (6.7)		
2 to 4 times per week	1 (5.9)	4 (13.3)		
Once a week	3 (17.6)	2 (6.7)		
1 to 3 times a month	0 (0)	1 (3.3)		
Never or almost never	4 (23.5)	2 (6.7)		
<b>Amount</b>				
0 servings	3 (17.6)	3 (10.0)	-	-
1 to 2 servings	5 (29.4)	14 (46.7)		
3 to 4 servings	9 (53.0)	8 (26.7)		
5 to 8 servings	0 (0)	2 (6.6)		
8 to 10 servings	0 (0)	3 (10.0)		
More than 10 servings	0 (0)	0 (0)		
<b>Processed foods</b>				
Every day	3 (17.6)	5 (16.7)	2.78	0.73
5 to 6 times per week	2 (11.8)	6 (20.0)		
2 to 4 times per week	5 (29.4)	4 (13.3)		
Once a week	2 (11.8)	2 (6.6)		
1 to 3 times a month	2 (11.8)	5 (16.7)		
Never or almost never	3 (17.6)	8 (26.7)		
<b>Amount</b>				
0 servings	4 (23.5)	8 (26.7)	-	-
1 to 2 servings	6 (35.3)	12 (40.0)		
3 to 4 servings	5 (29.4)	9 (30.0)		
5 to 8 servings	1 (5.9)	1 (3.3)		
8 to 10 servings	1 (5.9)	0 (0)		
More than 10 servings	0 (0)	0 (0)		
<b>Ultra-processed foods</b>				
Every day	2 (11.8)	3 (10.0)	6.70	0.24
5 to 6 times per week	0 (0)	2 (6.6)		
2 to 4 times per week	4 (23.5)	2 (6.7)		
Once a week	5 (29.4)	8 (26.7)		
1 to 3 times a month	4 (23.5)	4 (13.3)		
Never or almost never	2 (11.8)	11 (36.7)		
<b>Amount</b>				
0 servings	1 (5.9)	7 (23.3)	-	-
1 to 2 servings	10 (58.8)	19 (63.4)		
3 to 4 servings	5 (29.4)	3 (10.0)		
5 to 8 servings	1 (5.9)	1 (3.3)		
8 to 10 servings	0 (0)	0 (0)		
More than 10 servings	0 (0)	0 (0)		

Association was performed by the Chi-square test. Minimum significance index of  $p < 0.05$ .



Regarding QoL by the Eurohis-Qol-8, no associations between sexes were identified; the data are shown in table 8. Most presented a good/very good perception of their QoL and satisfaction with health. Independent of sex, most of them were satisfied with their daily activities, with themselves, their relationships, and

their living conditions. Most WT practitioners affirmed having enough or extreme energy for daily life. Regarding the financial dimension, most of them did not confirm being satisfied enough or extremely satisfied to meet their needs (table 8).

**Table 8.** Quality of life of WT practitioners during the coronavirus pandemic, 2021. (n=47).

Variables	Men n (%)	Women n (%)	OR (CI 95%)	p
<b>How would you rate your quality of life?</b>				
Very bad / Bad / Not bad or good	3 (17.6)	4 (13.3)	1.39 (0.31 – 5.76)	0.69
Good / Very good	14 (82.4)	26 (86.7)		
<b>How satisfied are you with your health?</b>				
Very dissatisfied / Dissatisfied / Neither satisfied nor dissatisfied	2 (11.8)	5 (16.7)	0.66 (0.12 – 3.97)	0.99
Satisfied / Very satisfied	15 (88.2)	25 (83.3)		
<b>How satisfied are you with your ability to perform daily activities?</b>				
Very dissatisfied / Dissatisfied / Neither satisfied nor dissatisfied	2 (11.8)	8 (26.7)	0.36 (0.07 – 2.05)	0.28
Satisfied / Very satisfied	15 (88.2)	22 (73.3)		
<b>How satisfied are you with yourself?</b>				
Very dissatisfied / Dissatisfied / Neither satisfied nor dissatisfied	4 (23.5)	10 (33.3)	0.61 (0.18 – 2.26)	0.52
Satisfied / Very satisfied	13 (76.5)	20 (66.7)		
<b>How satisfied are you with your personal relationships?</b>				
Very dissatisfied / Dissatisfied / Neither satisfied nor dissatisfied	5 (29.4)	9 (30.0)	0.97 (0.27 – 3.47)	0.99
Satisfied / Very satisfied	12 (70.6)	21 (70.0)		
<b>How satisfied are you with the conditions of the place where you live?</b>				
Very dissatisfied / Dissatisfied / Neither satisfied nor dissatisfied	5 (29.4)	6 (20.0)	1.66 (0.43 – 5.75)	0.49
Satisfied / Very satisfied	12 (70.6)	24 (80.0)		
<b>Do you have enough energy for your daily life?</b>				
Not at all / Very little / More or less	5 (29.4)	11 (36.7)	0.23 (0.04 – 1.13)	0.09
Quite a lot / Extremely	12 (70.6)	19 (63.3)		
<b>Do you have enough money to satisfy your needs?</b>				
Not at all / Very little / More or less	12 (70.6)	28 (93.3)	0.17 (0.03 – 1.05)	0.08
Quite a lot / Extremely	5 (29.4)	2 (6.7)		

OR, odds ratio; CI 95%, 95% confidence interval. Significance of  $p < 0.05$ .

## DISCUSSION

The coronavirus pandemic impacted several behavior and lifestyle dimensions. From this perspective, the present work aimed to evaluate the health indicators of the WT practitioners during the pandemic, when there was authorization to reopen sports academies (BRASIL, 2021).

Because it was a critical period for the global population and of significant social and economic impact, the present discussion was not limited to the main findings of the study, but also carried out a general analysis of the behavioral variables of WT practitioners during the pandemic period.

Regarding physical characteristics, differences between sexes were observed, with men presenting higher values (body mass and height). The WT has the metabolic effect of increasing muscle mass and reducing the percentage of fat and visceral fat in healthy adults, with a greater response dose in males, which could explain this morphological difference between sexes (WEWEGE et al., 2021). The BMI calculation was done to verify whether the participants had adequate values during the pandemic, which could have altered their body mass; however, the results showed normal values. Although we understand that the practical method to evaluate regular exercisers would be the analysis of fat percentage using skinfolds, which is widely used in the Brazilian population

(REZENDE et al., 2006), at that moment of the pandemic, this method would be unfeasible due to the proximity between volunteers and researchers.

Most of the WT practitioners, regardless of sex, presented healthy behaviors (no smoking or drinking alcohol) and nutritional control, which seems to have been maintained during the pandemic. Such factors may have also contributed to the maintenance of BMI. Adult exercising individuals seek to properly select their nutrients to improve recovery, tissue repair, and increase protein synthesis, such nutritional effects contribute to the achievement of the exerciser's goals, suggesting this healthy behavior KERKSICK et al., 2017).

Due to the pandemic, it was necessary to adopt preventive measures against the contamination of coronavirus, avoiding the evolution or regression of the disease. With the decrease in transmission, less restrictive sanitary measures were implemented in gyms, allowing activities to be returned. However, even so, the behavior in these spaces changed due to concerns about personal hygiene for the practice of exercises, such as the mandatory sterilization of equipment and distancing of 1.5 m, which reduced social contact. Such measures could be seen as "barriers" to the practice of WT (GENTIL et al., 2020); however, most of the practitioners in this study complied with the contingency protocols and maintained the frequency above three times a week, with sessions lasting up to 60 minutes, according to the guidelines for the practice (GARBER et al., 2011).

Men presented higher chances of osteoarticular health problems, and there are some hypotheses for this finding. First, this population was absent for at least six months from the WT program; therefore, physical detraining resulted in a loss of strength, power, and muscle mass, which increases the risk of injury when they return to training (LATELLA; HAFF, 2020). Another factor that could be considered is the WT periodization, which is characterized by higher loads and intensities for men compared to women, which leads to poor movement execution quality, increasing the risk of skeletal trauma (DOMINSKI et al., 2018). Finally, it was not possible to obtain information about health risk screening before the pandemic and, consequently, to verify if there was already a history of injuries.

The training program variables did not present differences between sexes; only the number of repetitions performed by women was higher when compared to men. The literature has already shown no significant differences between sexes in the number of repetitions with different percentages of 1RM (one-repetition maximum)

(HOEGGER et al., 1990). However, the magnitude of motor performance fatigue when performing WT repetitions in men is higher compared to women (SALVADOR et al., 2005), which suggests that fatigue levels can directly influence the number of repetitions, leading to the lower number of repetitions performed by men reported in this study.

Regarding nutritional intake, women eat more in natura foods when compared to men; this eating behavior is related to body dissatisfaction and the search for weight loss by women, who are more self-care and food selectivity compared to men (QUITTKAT et al., 2019). Body mass and regular exercise practice interfere with this healthy behavior; women who have BMI within the reference values seek organic food consumption when compared to sedentary or inactive people who are overweight, showing a healthy lifestyle (MAZZOLANI et al., 2021).

One of the changes seen during the pandemic was the reduction in different dimensions of QoL (LIPSKAYA-VELIKOVSKY, 2021; ALGAHTANI et al., 2021). In the current findings, it was not possible to observe changes in the perception of QoL. Although we did not find significant differences in these indicators, in the financial dimension, there was a lower perception by WT practitioners, which can be explained by the socioeconomic effect caused by the pandemic that prevented people from working, reducing income and thus generating a financial crisis that affected the financial power of millions of people, influencing the perception of having less money to meet their needs (MATTIOLI et al., 2020).

During data collection, the preventive measures of social distancing were respected by the researchers, which did not allow the performance of tests to measure the percentage of body fat and strength of participants, which could better clarify the differences in body mass and higher risk of osteoarticular diseases indicated by the PAR-Q among men. Another point to be highlighted is that the evaluations were carried out as soon as the sports academies were reopened electronically; therefore, previous data were not collected, not allowing the evaluation of comparative effects.

Due to the transversal delineation of the study and for having occurred in only one gym, the results cannot be extrapolated to other WT practitioners, and self-completed questionnaires were also applied, which may have influenced the memory, emotional state, and intellectual level of the volunteer.

## CONCLUSIONS

The present study aimed to analyze the lifestyle of WT practitioners of both sexes during the coronavirus pandemic. Regardless of sex, most participants maintained healthy practices and restrictive measures during the pandemic.

Men were more likely to develop osteoarticular problems, demonstrating the need for a specialized clinical evaluation to continue their physical training programs. Women consumed more in natura foods during the pandemic, which is considered a behavior that contributes to reducing the chances of gaining adipose tissue and

metabolic dysfunctions. No associations were observed between sexes and negative perceptions of the QoL. Finally, the regular practice of WT can be an important strategy in health crises to help to maintain the population's healthy lifestyle.

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