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HEALTH-RELATED QUALITY OF LIFE IN WOMEN TREATED BY THE EXPANDED FAMILY HEALTH CENTER AND PHYSICAL EDUCATION PROFESSIONALS

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ABSTRACT

The objective of this study was to characterize the sociodemographic profile and health-related quality of life of women registered at the Family Health Support Center (NASF) in the city of Imperatriz, Maranhão state, Brazil, with respect to the role played by physical education professionals in shaping the health services of the NASF under the Family Health Strategy (ESF). To this end, a quantitative-qualitative study was conducted. The study population comprised women aged >38 years, registered at the Imperatriz NASF, and engaged in the physical activity program or otherwise. Data collection entailed application of a quality of life survey (SF-36) to all participants. Data analysis was carried out using descriptive statistics. For the total sample, participants were aged 38-72 years, predominantly married (66.7%), had complete or incomplete primary education (58.8%), and were working (56.8%). For income, 47.1% received <1 minimum wage and 49% had 1-3 minimum wages. Overall, 39% engaged in the physical activity program and had a general QoL score of 65.9, while 61% did not engage in physical activity and had a QoL score of 53.1. Scores were higher across most domains for the group engaged in physical activity and lower for the group not engaged in physical activity, with the exception of pain, which had similar scores in both groups. The results showed that refining health policies expanding effective service delivery at the NASF for health promotion and disease prevention, via a multidiscipline team including physical education professionals, can foster practical approaches for supporting the management of women´s health and development.

Keywords: Planning. Regional Development. Health Economics. Quality of Life. Women´s Health.

1. INTRODUCTION

An analysis of health care in women reveals that, during the first few decades of the 20th century, this area became an integral part of public health policy in Brazil (Mori; Coelho; Estrella, 2006). However, in the 1940s, 40s and 50s, women were largely viewed as a product of their biological gender within their societal role as mother and homemaker, i.e. responsible for raising, educating and caring for their offspring and other family members (Ministry of Health, 2004).

Freitas *et al.* (2009) noted that, in the 1960s, many countries began controlling natality with greater focus by State governments on women of reproductive age. Thus, birth-control programs were a primary focus in the 1970s, whilst attention to women´s actual needs or preferences was given secondary importance (Mori; Coelho; Estrella, 2016; Freitas *et al.*, 2009).

Also in the 1960s, Giffin (2002) claims that the feminist movement in Brazil, unhappy with gender inequality and the reductionist pressure on females, campaigned for the non-hierarchical structure of specificities of men and women, pushing for greater social equality.

Against this backdrop, a new concept of women´s health emerged, breaking with the prevailing paradigm centered on the control bias of reproduction, and now defined by a stronger emphasis on sexual and reproductive health as a right (Freitas *et al.*, 2009). This gave rise to the National Policy on Comprehensive Care for Women´s Health.

According to the Ministry of Health (2004), this program for women´s health includes actions covering education, prevention, diagnosis, treatment and recovery. The scope encompasses women´s healthcare with regard to gynecological care, pre-natal, delivery and post-partum periods, the climacterium, family planning, sexually-transmitted diseases, cervical and breast cancer, besides other needs identified from the population profile of women.

Another legal framework for health introduced was the National Health Promotion Policy, under ruling no. 2.446, of 11 March, 2014, to promote quality of life and reduce vulnerabilities and health risks in relation to determinants and moderating factors, including life style, working conditions, environment, education, culture, leisure and housing, among others. Engaging in regular physical activity is an important factor to help reduce health risks and improve individuals´ quality of life (Brasil, 2014).

Therefore, against this backdrop and with the goal of adding to the body of knowledge on the quality of life of women registered at the NASF (Núcleo de Apoio à Saúde da Família – Family Health Support Center), the following questions were posed: What is the sociodemographic profile and quality of life of the women registered with the NASF in the city of Imperatriz, Maranhão state, with respect to the Health Promotion actions run by the Family Health Support Center, more specifically, the activities performed by Physical Education professionals?

2. METHOD

The objective of the present quantitative-qualitative study was to characterize the sociodemographic profile and health-related quality of life of women registered at the Family Health Support Center (NASF) in the city of Imperatriz, Maranhão state, Brazil, examining the role played by physical education professionals in shaping the health services of the NASF under the Family Health Strategy (ESF).

Given the comprehensive scope of the present study, an exploratory-descriptive methodology was adopted. As defined by Cervo e Bervian (1996, pg. 49) "the main goal of an exploratory study is to become familiar with the phenomenon or gain new perceptions and discover new ideas". Thus, the primary aim of this type of study is to refine ideas or discover new insights.

The study population comprised women aged >38 years, registered at the Imperatriz NASF, and engaged in the physical activity program or otherwise. The sample size was first determined, based on a 5% sampling error and 95% confidence interval, giving a minimum estimated sample of 71 women. However, due to the pandemic and the fact that many women were classified as high-risk, the final sample comprised 51 women. Therefore, non-probability convenience sampling was employed.

Two-stage data collection was performed using 2 instruments: a questionnaire gathering information on socioeconomic profile devised by Geraldo (2017), containing closed and open-ended questions, plus the Brazilian version of the SF-36 quality of life survey developed by Ciconelli *et al.* (1999). The two instruments were applied to the registered women residing in the catchment area of the primary healthcare centers (UBS) involved in the study. According to Ciconelli *et al.* (1999), the SF-36 is a general health status survey comprising 36 items assessing 8 health concepts:

1. Physical functioning (10 items): measures the presence and extent of limitations imposed on physical capacity;

2. Role-physical (2 items);

3. Role-emotional (3 items);

4. Bodily pain (2 items): based on a question from the SF-20 questionnaire about the intensity of pain, plus impact of pain on activities of daily living;

5. General health status (5 items): derived from the General Health Rating Index;

6. Vitality (4 items): a measure including energy level, with fatigue derived from the Mental Health Inventory (MHI);

7. Social functioning (2 items); assesses integration of the individual in social activities.

8. Mental health (5 items): investigates the dimensions anxiety, depression, behavioral changes or lack of emotional control, and psychological well-being. These domains summarize the 38 items from the Mental Health Inventory (MHI-38).

The questionnaires were sent via Google Forms from 16 November 2020 onwards, the date of study approval by the local Research Ethics Committee under CAAE 39420520.5.0000.5501, permit no: 4.402.307.

The analysis procedure entailed 3 stages, namely:

1st Stage: calculation of Raw Scale of data obtained from the QoL Survey – SF-36. In this stage, the value of the questions from the survey were converted for the 8 domains on a scale of 0 (zero) to 100 (one hundred), where 0 = worst and 100 = best for each domain. This is denoted Raw Scale because the final value does not represent any unit of measure. Domains: - Physical functioning; - Role physical; - Pain; - General health status; - Vitality; Social functioning; - Role-emotional; and Mental health (Geraldo, 2017).

2nd Stage: Cronbach´s Alpha reliability test of the data obtained from the QoL –SF-36 survey. Cronbach´s Alpha measures reliability of data as a statistic representing correlation between responses obtained, establishing a mean between data based on the variance of the individual items and the sum of all items analyzed in the questionnaire, showing values ≥ 0.7 on the scale (Field, 2009).

3rd Stage: Coefficient of Correlation and One-way ANOVA. The coefficient of correlation can range from -1 to +1, where the closer the values to these extremes (positive or negative), the

greater the correlation between the variables compared. The one-way ANOVA is a method for testing the similarity of population means, based on analysis of sample variances (Pestana; Gagueiro, 2008).

All the statistical calculations were performed using the Statistical Package for Social Sciences (SPSS) for Windows, version 20.0.

3. RESULTS ANALYSIS

3.1 SOCIOECONOMIC PROFILE AND LIFE-STYLE CHARACTERISTICS OF RESPONDENTS

The process of characterizing the socioeconomic profile of the Imperatriz (Maranhão state) NASF users engaged or otherwise in the physical activity program entailed a survey of these women probing these characteristics. The variables analyzed were: age, marital status, education, profession, housing, income, living arrangement, life-style, age at menarche, parity and children, date of last menstruation and FSH test.

The survey was applied to 51 women registered at the Imperatriz NASF who engaged in the physical activity program or otherwise. The primary variable analyzed was age, as presented in Table 1.

Table 1 | Age of Respondents

Age	Frequency	Percent	Valid percent	Cumulative percent
38	1	2.0	2.0	2.0
39	2	3.9	3.9	5.9
40	1	2.0	2.0	7.8
41	1	2.0	2.0	9.8
45	1	2.0	2.0	11.8
46	2	3.9	3.9	15.7
47	2	3.9	3.9	19.6
53	2	3.9	3.9	23.5
54	1	2.0	2.0	25.5
55	4	7.8	7.8	33.3
56	5	9.8	9.8	43.1
57	2	3.9	3.9	47.1
58	6	11.8	11.8	58.8
59	3	5.9	5.9	64.7
60	1	2.0	2.0	66.7
61	4	7.8	7.8	74.5
62	1	2.0	2.0	76.5
63	4	7.8	7.8	84.3
64	2	3.9	3.9	88.2
65	1	2.0	2.0	90.2
66	2	3.9	3.9	94.1
67	2	3.9	3.9	98.0
72	1	2.0	2.0	100.0
Total	51	100.0	100.0	

Source: Data from study survey

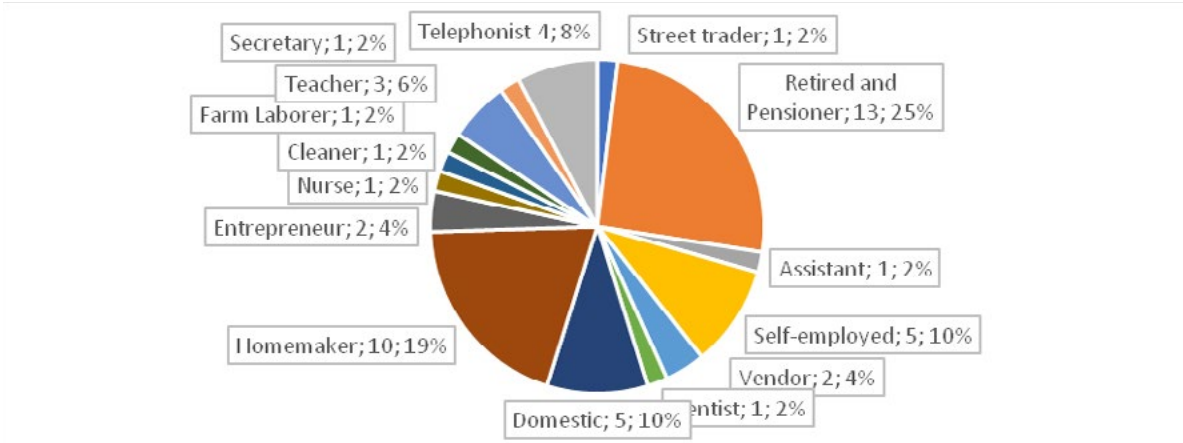
The mean age of participants was 56 years (range 38-72 years).

Regarding marital status, 66.7% were married, 15.7% widowed, 9.8% divorced or separated, 5.9% single and 2% in a de facto union.

For education, 33.3% of respondents had studied to incomplete primary level, 25.5% complete primary, 15.7% complete secondary level, 7.8% post-graduate degree, 7.8% incomplete secondary, 5.9% higher education and 3.9% illiterate.

The occupations held by respondents are depicted in Graph 1: street trader (2%); retired and pensioner (25%); assistant (2%); self-employed (10%); vendor (4%); dentist (2%); domestic (10%); homemaker (19%); entrepreneur (4%); nurse (2%); cleaner (2%); farm laborer (2%); teacher (6%); secretary (2%) and telephonist (8%).

Graph 1 | Occupations of Respondents



Source: Data from study survey

In response to the question probing work status, 49% of the women stated they were working, 29.4% retired, 13.7% not working at present, and 7.8% working on a part-time basis.

With regard to individual income, 49% of those surveyed had a personal income of 1-3 minimum monthly wages (MW), 47.1% <1 MW, and only 3.9% received 7-10 MWs.

In terms of family income, 72.5% of families received 1-3 minimum monthly wages, 17.6% had < MW, 5.9% reported 7 -10 MWs, 2.0% had 4-6 MWs and 2% >10MWs.

According to Geraldo (2017), families living on ≤ 3 MWs can struggle to make ends meet, particularly when taking into account the number sharing the household. The author added that financial hardship can lead to stress and insecurity, negatively impacting health-related QoL.

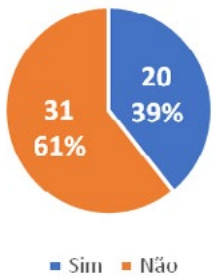
With respect to living arrangement, the vast majority of respondents reported a traditional family structure (father, mother and children) where 43.1% lived with a spouse and children, 25.5% with spouse only, 13.7% with their children only, while 13.7% lived alone.

Regarding basic utilities, 100% of homes had mains electricity supply, 80.4% had mains water supply, whereas 19.6% had no access to running water.

These findings are consistent with the United Nations Development Program (2020), which reported an increase in the percentage of the population living in households with running water, with figures for 2017 showing 100% access to clean water supply. Regarding electricity supply, 99.1% of households in the city of Imperatriz are connected to the mains grid.

Following the analysis of socioeconomic profile, the life-style of the study participants was examined. Responses to the question on engagement in some kind of physical activity revealed that 39% of the women engaged in physical activity, whereas 61% did not engage in physical activity (Graph 2).

Graph 2 | Engagement in Physical Activity by Respondents



Source: Data from study survey

This result corroborates the study by Geraldo (2017) and Geraldo, et al. 2023, showing that being sedentary can favor the development of overweight and obesity, factors which lead to cardiovascular diseases and associated complications, particularly with aging.

In response to the question whether they preferred engaging in physical activity alone or in a group, 76% of respondents stated a preference for performing sports alone, while 24% preferred exercising in groups (Graph 3).

Graph 3 | Preference for Group or Individual Physical Activity

Source: Data from Study Survey

Table 2 provides a breakdown of the type of physical activities reported by the participants, where 60.8% engaged in no physical activities, 26.9% liked doing aerobics, 13.7% gym exercises, 13.7% gym workouts and 11.8% walking.

Table 2 | Type of Physical Activity Performed by Respondents

Physical Activity	Frequency	Percent	Valid percent
Walking	6	11.8	11.8
Aerobics	7	13.7	13.7
None	31	60.8	60.8
Gym workouts	7	13.7	13.7
Total	51	100.0	100.0

Source: Data from study survey

Another aspect important for QoL was the frequency of leisure activities. Thus, participants were asked about their preferred leisure-time activities (Table 3).

Table 3 | Leisure Activities of Respondents

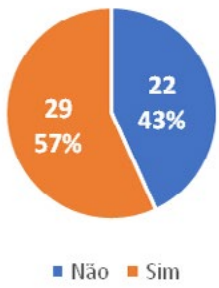
Leisure Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Manual/visual activities	2	3.9	3.9	3.9
Dancing	3	5.9	5.9	9.8
Birthday parties	8	15.7	15.7	25.5
Going to church	8	15.7	15.7	41.2
None/Dislike	9	17.6	17.6	58.8
Going on outings	9	17.6	17.6	76.5
Meeting friends/ 3rd age gatherings	5	9.8	9.8	86.3
Going on trips	7	13.7	13.7	100.0
Total	51	100.0	100.0	

Source: Data from study survey

Overall, 17.6% enjoyed going on outings in general, 15.7% going to church, 15.7% birthday parties, 13.7% liked traveling, 9.8% meeting friends or 3rd age gatherings, 5.9% dancing, 3.9% manual/visual activities, and 17.6% pursued no leisure-time activities or did not like them.

With respect to party-going, 57% of participants went to parties while 43% did not.

Graph 4 | Party-Going by Respondents



Source: Data from study survey

Regarding reasons given for not frequenting social events, 33% stated they did not like social gatherings, 7.8% cited religious beliefs, 2% illness/disability, 2% did not socialize when they could not afford it, 2% frequented no social events because their partner did not like it, and 2% would only go to parties depending on venue location. The remaining 51% of women normally go to any type of social activity.

Numerous health studies underscore that regular physical activity improves the QoL of the population and promotes significant health benefits (Canário, 2011; Moraes; Schneid, 2015; Rezende *et al.*, 2020). Geraldo (2017) reported the WHO recommendation of engaging in 30 minutes of any type of light or moderate physical activity at least 5 days a week, or 20 minutes of more intense physical activities at least 3 days a week.

3.1.1 GYNECOLOGICAL AND OBSTETRIC HISTORY AND CLIMACTERIC SYMPTOMS REPORTED

The characteristics of the participants concerning gynecological and obstetric history, together with climacteric symptoms reported, were gathered.

Thus, participants provided information on age at menarche, showing that average age at first menstruation was 12 years, youngest age was 9 years (3 cases) and oldest 15 years (1 case). Stratifying by age, 27.5% menstruated at 11 years, 23.5% at 10 years, 19.6% at 13 years, 17.6% at 12 years, 5.9% at 9 years, 3.9% at 14 years, and 2.0% at 15 years.

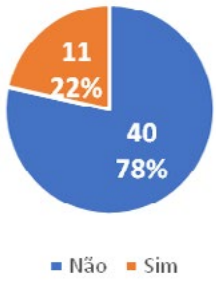
For parity of the participants, 37.3% carried 3 pregnancies, 29.4% had 2, 13.7% had 4, and 9.8% had a single pregnancy. However, 5.9% of the women had never gone through pregnancy and childbearing, 2.0% had 11 pregnancies, while 2% had 6 pregnancies.

In terms of number of children, the women had an average of 4, minimum of 0 and maximum of 11.

These findings are similar to the data collected by the 2006 National Demographic and Health Survey (PNDS), which showed an average rate of 2.01 children per woman in the Northeast region as a whole, versus 3.8 in the state of Maranhão.

In response to the question on menstruation, 78% of respondents stated they no longer menstruated, i.e. were at the post-menopausal stage, while 22% still menstruated (Graph 5).

Graph 5 | Do you menstruate?



Source: Data from study survey

Mean age at final menstruation was 51 years, with youngest at 44 and oldest at 57 years (Table 4). A total of 11 women had not reached the post-menopausal stage.

Table 4 | Age at Final Menstruation

Final Menstruation	Frequency	Percent	Valid percent
.00	11	21.6	21.6
44.00	1	2.0	2.0
52.00	2	3.9	3.9
53.00	8	15.7	15.7
54.00	9	17.6	17.6
55.00	9	17.6	17.6
56.00	10	19.6	19.6
57.00	1	2.0	2.0
Total	51	100.0	100.0

Data from study survey

According to Candella *et al.* (1995), clinical symptoms generally seen in women during the climacteric stages, menopause and post-menopause, stem from changes in the nervous, circulatory, endocrine and urinary systems.

For symptoms, 62.7% of the women reported hot flushes, 33.3% cited sleep disturbances, 70.6% experienced weight changes and 68.6% had joint pain.

The last variable analyzed was Follicle Stimulating Hormone (FSH). According to Soares *et al.* (2002), this hormone is important for regulating the body´s reproductive processes. The authors also noted that high levels of the hormone indicate imminent menopause, i.e. elevated FSH serves as a marker of possible ovarian failure and/or approaching menopause.

In this regard, 88.2% of the participants had FSH>30 Ul/L indicating they were at the menopause phase, whereas only 11.8% had FSH <30 Ul/L.

Table 5 | Follicle Stimulating Hormone (FSH) level of Respondents

FSH	Frequency	Percent	Valid percent	Cumulative percent
Level >30 Ul/L	45	88.2	88.2	88.2
Level < 30 Ul/L	6	11.8	11.8	100.0
Total	51	100.0	100.0	

Source: Data from study survey

After analysis of the participants´ gynecological and obstetric history, coupled with reported climacteric symptoms, responses on the health-related QoL survey (SF-36) were validated.

3.2 VALIDATION OF DATA OBTAINED ON SF-36 USING CRONBACH ALPHA AND TEST OF NORMALITY

Cronbach´s alpha was used to measure the level reliability of the data, as presented in Table 6. The test of the reliability of the study results showed alpha values for each variable of the SF-36 in the 0.71-0.88 range, and an overall Cronbach alpha of 0.97.

Given the score exceeded 0.70, the variables of Physical Functioning, Role-physical, Pain, General Health Status, Vitality, Social Functioning, Role-Emotional and Mental Health can be considered reliable. According to Field (2009), the lower threshold for a scale to be deemed acceptable is 0.70.

Table 6 | Test of Reliability

Variables	Cronbach´s Alpha	Overall Cronbach´s Alpha
Physical functioning	0.71	0.97
Role-Physical	0.75	
Pain	0.71	
General Health Status	0.88	
Vitality	0.83	
Social Functioning	0.76	
Role-Emotional	0.79	
Mental Health	0.72	

Source: Data from study survey

Following the Cronbach Alpha analysis, the test of normality was performed (Table 7). Field (2009) states that tests of normality are used to check whether the probability distribution associated with a dataset can be estimated by a normal distribution. Because the study sample size was larger than 50, the Kolmogorov-Smirnov test was employed.

Table 7 | Test of Normality –

Variables	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Physical functioning	.754	51	.000
Role-Physical	.604	51	.000
Pain	.509	51	.000
General Health Status	.736	51	.000
Vitality	.509	51	.000
Social Functioning	.749	51	.000
Role-Emotional	.771	51	.000
Mental Health	.771	51	.000

Source: Data from study survey

The following hypotheses were established for the test of normality:

H0: the data does not adhere to a normal distribution;

H1: the data does adhere to a normal distribution.

All of the variables had a level of significance below 0.005 ($p < 0.005$). Therefore, the null hypothesis (H0) was rejected, i.e. the data collected had a normal distribution.

3.3 ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE USING SF-36

Health-related QoL of participants was first expressed as descriptive statistics (mean, standard-deviation, minimum, maximum and mode) to compare SF-36 survey domain scores in the groups containing women that engaged in physical activity or those who did not.

The means for the two groups were then compared. First, Levene´s statistic was used to test the homogeneity of variance, and one-way ANOVA calculated to reveal any differences between group means. Lastly, Tukey´s post-hoc test was performed to determine the significance of differences between group means.

3.3.1 Comparison of SF-36 survey dimension scores between groups

According to Geraldo (2017) and Silva (2008), the domains of the SF-36 survey generally show whether individuals are able to perform daily activities and how they feel when carrying them out. The survey also represents the most commonly measured health concepts and those most impacted by diseases or treatment.

To provide a measure of health-related QoL, individuals scores were calculated for the 51 women on each survey domain: Physical functioning; Role-Physical; Pain; General Health Status; Vitality; Social Functioning; Role-Emotional; and Mental Health.

Scores range from 0 to 100, characterizing greater and lesser negative impact of the climacterium, menopause and post-menopause, on the QoL of women in the 2 groups studied (Table 8).

The group participating in the present study comprised 20 women who engaged in physical activity and 31 who did not, as outlined earlier.

Table 8 | Descriptive statistics for SF-36 Survey Domains

GROUP NOT ENGAGING IN PHYSICAL ACTIVITY (Overall Mean – 53.1)					
Domains	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Mode**
Physical functioning	46	.58835	15	80	50
Role-Physical	45	.48516	15	80	45
Pain	44	.51441	15	70	40
General Health Status	49	.56704	15	80	50
Vitality	51	.51441	20	90	55
Social Functioning	64	.64331	20	90	65
Role-Emotional	58	.68948	20	90	60
Mental Health	60	.68948	20	90	60
GROUP ENGAGING IN PHYSICAL ACTIVITY (Overall Mean – 65.9)					
Domains	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Mode**
Physical functioning	85	.49147	25	100	90
Role-Physical	62	.27175	20	100	60
Pain	61	1.65518	20	100	70
General Health Status	67	1.14618	20	100	70
Vitality	62	.63331	20	100	60
Social Functioning	70	.74331	20	100	70
Role-Emotional	68	.08948	20	100	70
Mental Health	69	.45948	20	100	70

Source: Data from study survey

The overall mean score of the group of women not engaging in physical activity was 53.1 versus 65.9 in the group engaging in physical activity (Table 8). This result shows that the group that played sports had greater aptitude to carry out daily activities and felt better when performing them compared to the women who played no sports.

This finding suggests that engagement in sports by the women registered at the Imperatriz NASF contributed to improving QoL of the group assessed.

Analysis of the group of women in the climacterium, menopause and post-menopause not engaging in sports revealed scores for 5 domains (Physical Functioning, Role-physical, Pain, General Health Status and Vitality) were below the overall mean. These results also show that the health status of this group was unsatisfactory, with sports recommended as a means of improving QoL.

However, the scores on the domains Social Functioning, Role-Emotional and Mental Health were higher than the overall mean for the group, confirming that these women had good QoL for emotions and psychosocial aspects.

The standard deviation for this group was in the 0.68948-0.48516 range showing low spread of the data. For the mode (values with greatest frequency), domain scores ranged from 40 to 65.

The group of women in the climacterium, menopause and post-menopause engaging in sports had scores for 5 domains (Physical Functioning, General Health Status, Social Functioning, Role-Emotional and Mental Health) that were above the overall mean. The results show that this group had satisfactory health status, further corroborated by the mode values which also exceeded the overall mean score.

Scores on the Pain domain were below the overall mean for both groups, with values of 44 in the group not doing sports versus 61 in the group performing sports. This finding suggest that the women in both groups experienced debilitating pain, negatively impacting QoL.

Standard deviations in this second group were in the 0.08948-1.65518 range, highlighting a low-to-moderate spread in the data collected.

3.3.2 Comparison of group means on SF-36 Survey and Pearson´s Correlation

Levene´s statistic was used to calculate homogeneity of variance test and compare group means (Table 9) based on the following two hypotheses:

H0: the variances are homogenous

H1: the variances are not homogenous

Table 9 | Homogeneity of Variance Test

Domains	Levene Statistic	df1	df2	Sig.
Physical functioning	11.343	2	49	.028
Role-physical	5.215	2	49	.063
Pain	3.733	2	49	.430
General Health Status	5.040	2	49	.009
Vitality	19.040	2	49	.021
Social Functioning	6.553	2	49	.106
Role-Emotional	7.818	2	49	.009
Mental Health	19.040	2	49	.008

Source: Data from study survey

The Physical Functioning, Role-physical, Pain, General Health Status, Vitality, Social Functioning, Role-Emotional and Mental Health domains yielded a p-value (Sig.) >0.005, thereby accepting the null hypothesis, i.e. that the variances are homogenous (Table 9).

The homogeneity of variance test was followed by the one-way ANOVA to determine any differences between group means (Table 10).

Table 10 | One-way ANOVA Test

Domains		Sum of Squares	df	Mean Square	Z	Sig.
Physical functioning	Between Groups	6.704	2	.609	4.375	.003
	Within roups	1.950	49	.139		
	Total	8.654	51			
Role-physical	Between Groups	4.418	2	.402	3.834	.001
	Within roups	1.467	49	.105		
	Total	5.885	51			
Pain	Between Groups	5.815	2	.529	9.252	.010
	Within Groups	.800	49	.057		
	Total	6.615	51			
General Health Status	Between Groups	6.538	2	.594	5.548	.002
	Within Groups	1.500	49	.107		
	Total	8.038	51			
Vitality	Between Groups	5.949	2	.541	11.357	.000
	Within Groups	.667	49	.048		
	Total	6.615	51			
Social Functioning	Between Groups	9.046	2	.822	8.856	.000
	Within Groups	1.300	49	.093		
	Total	10.346	51			
Role-Emotional	Between Groups	8.768	2	.797	3.580	.004
	Within Groups	3.117	49	.223		
	Total	11.885	51			
Mental Health	Between Groups	1.846	2	.168	21.416	.000
	Within Groups	.000	49	.000		
	Total	1.846	51			

Source: Data from study survey

Hence, the following hypotheses were established:

H0: the group means are equal

H1: the group means differ

The Physical Functioning, Role-physical, General Health Status, Vitality, Social Functioning, Role-Emotional and Mental Health domains yielded a p-value (Sig.) <0.005, thereby rejecting the null hypothesis and confirming that group means on the SF-36 survey scores differ.

However, the Pain domain attained a *p*-value >0.005, confirming the null hypothesis of no difference in group means for this aspect.

As a complement to the one-way ANOVA and to determine the significance of differences between group means, Tukey´s post-hoc test was performed (Table 11).

Table 11 | Tukey´s post-hoc Test

Dependent variable	(I) GROUP	(J) GROUP	Mean difference (I-J)	Standard Error	Sig.
Physical functioning	Plays Sports	Does not Play Sports	-1.02083	.29219	.004
Role-physical	Plays Sports	Does not Play Sports	.31944	.13624	.000
Pain	Plays Sports	Does not Play Sports	.81944	.21192	. .066
General Health Status	Plays Sports	Does not Play Sports	1.19167	.18109	.000
Vitality	Plays Sports	Does not Play Sports	-1.02083	.29219	.004
Social Functioning	Plays Sports	Does not Play Sports	.31944	.13624	.000
Role-Emotional	Plays Sports	Does not Play Sports	.81944	.21192	.002
Mental Health	Plays Sports	Does not Play Sports	1.19167	.18109	.000

Source: Data from study survey

Comparison of Physical Functioning, Role-physical, General Health Status, Vitality, Social Functioning, Role-Emotional and Mental Health domain scores between the groups yielded a p-value <0.005, indicating group differences.

However, the Pain domain attained a p-value >0.005, indicating no group difference for this variable. Although no group difference was evident for this aspect, studies conducted by Antunes *et al.* (2017), Bobbo *et al.* (2018) and Belém *et al.* (2021) recommend doing sports to reduce the incidence of pain.

After comparing means using One-way ANOVA and applying Tukey´s post-hoc test, Pearson´s correlation between groups was carried out (Table 12). This approach was used after the test for normality (Kolmogorov-Smirnov) confirmed that the data exhibited a normal distribution..

Table 12 | Pearson´s Correlation

Domains	Correlation (r)	Sig.
Physical functioning	0.874	.000
Role-physical	0.008	.000
Pain	0.005	.000
General Health Status	0.006	.000
Vitality	0.001	.000
Social Functioning	0.729	.000
Role-Emotional	0.010	.000
Mental Health	0.001	.000

Source: Data from study survey

The Physical Functioning domain exhibited a strong positive correlation between the two groups (Table 12).

Similarly, the Social Functioning domain had an r-value = 0.729, showing a strong positive group correlation.

Lastly, the Role-physical, General Health Status, Vitality, Role-Emotional and Mental Health domains had an *r*-value approaching zero, indicating a very weak group correlation.

4. FINAL CONSIDERATIONS

While the objective was to characterize the sociodemographic profile and health-related quality of life of women registered at the Family Health Support Center (NASF) in the city of Imperatriz, Minas Gerais state, Brazil, examining the role played by physical education professionals in shaping the health services of the NASF under the Family Health Strategy (ESF), it is important to note the investigation took place amid the outbreak of a pandemic unfolding globally and in Brazil with the spread of the novel coronavirus (SARS-CoV-2), causing COVID-19 infections. Thus, maintaining a physically active routine should be encouraged as a preventive health measure and to help combat spread of the virus, thereby improving the QoL of the population.

Regarding the profile of the study participants, the women were aged 38-72 years, predominantly married and had incomplete primary education. Most of the sample were actively working and received 1-3 minimum wages. Living arrangements were traditional, with the family

unit consisting of father, mother and children, while most households had access to mains electricity and clean running water.

With regard to lifestyle, 61% of the participants did not engage in sports, while 39% performed sports. Main preferred activities were aerobics, leisure-time pursuits and general outings.

Regarding gynecological and obstetric history and climacteric symptoms reported by the participants, mean age at menarche was 12 years, the average parity was 2 pregnancies, and mean age at final menstruation was 43 years.

The leading clinical complaints were changes in weight (70.6%), painful joints (68.6%), hot flushes (62.7%), and sleep difficulties (33.3%).

General QoL score was 64.9 in the group engaging in physical activity versus 53.1 in the sedentary group.

The physical activity group had scores above the overall mean on the five domains of Physical Functioning, General Health Status, Social Functioning, Role-Emotional and Mental Health domains. Scores in the sedentary group were below the overall mean for the 5 domains Physical Functioning, Role-physical, Pain, General Health Status and Vitality. Scores below the overall mean were evident in both groups for the Pain domain, negatively impacting comfort, engagement in physical activity and socializing.

Body movements, with associated energy expenditure and renewal, when associated with the lifestyle of women, confer physiological, esthetic, mental and motivational benefits. Exercise also helps reduce stress, tensions and depression, promotes self-esteem, self-image, and autonomy, while improving flexibility, mobility, motor coordination, movement, among other benefits.

Although the study constitutes a valuable initiative for studies of health-related QoL of the women from Imperatriz city (Maranhão state) and met the goal proposed, the investigation has some limitations in terms of response rate among the users of the NASF described, with a large number refusing to answer the survey due to the COVID-19 pandemic. While on the one hand, the pandemic heightened the importance of maintaining a physically active routine as a preventive health measure and to help combat spread of the virus. On the other hand, the situation posed challenges and prompted the search for new ways of making the project workable, including

remote health service delivery and outdoor physical activities. The pandemic period called for survival and resilience, learning and relearning.

Refining health policies expanding effective service delivery at the NASF for health promotion and disease prevention, via a multidisciplinary team that includes physical education professionals, can foster practical approaches for supporting the management of women´s health and development.

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