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ORIGINAL ARTICLE

Relationship between motivation for physical exercise and women's quality of life

Relação da motivação para a prática de exercício físico com a qualidade de vida de mulheres

Naiara Santana Graciano[1], Daniel Vicentini de Oliveira[2,*], Yara Lucy Fidelix[3], Ana Luiza Barbosa Anversa[4], José Roberto Andrade do Nascimento Júnior[3], Gabriel Lucas Morais Freire[3], Rose Mari Bennemann[5], Fabio Ricardo Acencio[5]

[1]*Department of Graduation in Physical Education. UNIPAR - Universidade Paranaense - Campus Cianorte. Cianorte, Paraná, Brazil.*
[2]*Department of Postgraduate studies in Physical Education. Universidade Estadual de Maringá. Maringá, Paraná, Brazil.*
[3]*Department of Postgraduate studies in Physical Education. Universidade Federal do Vale do São Francisco. Petrolina, Pernambuco, Brazil.*
[4]*Department of Graduation in Physical Education. Centro Universitário Metropolitano de Maringá Unifamma. Maringá, Paraná, Brasil.*
[5] *Department of Postgraduate in Health Promotion. UniCesumar. Maringá, Paraná, Brazil.*

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KEYWORDS
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ABSTRACT

Objective: To identify motivational factors for the practice of physical exercises and their relationship with the quality of life (QoL)of women.
Methods: A cross-sectional study, conducted with 48 women practicing exercise in gyms aged between 19 and 59 years and with a mean age of 39.4 ± 11.7 years. Exercise Motivations Inventory (EMI-2) and WHOQOL-Bref were used as instruments. The data were analyzed using the Kolmogorov-Smirnov tests, homogeneity of Levene's variances, independent t-test, and Pearson's correlation ($p < 0.05$).
Results: Older women are more motivated to exercise for health rehabilitation. The youngest had a higher score in the physical domain of quality of life. There was a significant, positive, and weak correlation of the physical domain with weight control ($r = 0.24$), appearance ($r = 0.33$), a weak and negative correlation of the physical domain with health rehabilitation ($r = -0,33$), a positive and weak correlation of the social domain with physical conditioning ($r = 0.23$), and a positive and weak correlation of the general QoL score with weight control ($r = 0.23$).
Conclusion: The main motivational factor for the practice of physical exercise was preventing diseases, especially in the group of older women. Younger women had a better perception of the physical QoL domain, and correlations between some domains of QoL and motivation were observed.

*Corresponding author:
Departamento de Pós-graduação em Educação Física. Universidade Estadual de Maringá
Addr.: Av. Colombo, 5790 / Bloco M06 – Campus Universitário. Maringá, PR, Brasil | CEP 87.020-900
Phone: +55 44 9 9942-8575
E-mail: d.vicentini@hotmail.com (Oliveira DV)

This study was conducted at Universidade Paranaense - Campus Cianorte.

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PALAVRAS-CHAVE

Atividade motora
Exercício
Motivação

RESUMO

Objetivo: identificar os fatores motivacionais para a prática de exercícios físicos e sua relação com a qualidade de vida (QDV) de mulheres.
Métodos: estudo transversal, realizado com 48 mulheres praticantes de exercício em academias com idade entre 19 e 59 anos e média de idade de 39,4 ± 11,7 anos. Como instrumentos foram utilizados o *Exercise Motivations Inventory* (EMI-2) e o WHOQOL-Bref. Os dados foram analisados por meio dos testes de Kolmogorov-Smirnov, homogeneidade das variâncias de Levene, teste t independente, e correlação de Pearson ($p < 0,05$).
Resultados: as mulheres mais velhas são mais motivadas para a prática de exercício para a reabilitação da saúde. As mais jovens apresentaram escore superior no domínio físico de QDV. Verificou-se correlação significativa, positiva e fraca do domínio físico com controle de peso ($r = 0,24$), aparência ($r = 0,33$), correlação fraca e negativa do domínio físico com a reabilitação da saúde ($r = -0,33$), correlação positiva e fraca do domínio social com condicionamento físico ($r = 0,23$), e correlação positiva e fraca do escore geral de QDV com o controle do peso ($r = 0,23$).
Conclusão: O principal fator motivacional para a prática de exercícios físicos foi a prevenção de doenças, especialmente no grupo de mulheres mais velhas. As mulheres mais jovens apresentaram melhor percepção do domínio físico de QDV e correlações entre alguns domínios da QDV e da motivação foram observados.

INTRODUCTION

Physical exercise is understood as a planned and systematized activity based on a specific objective to maintain or improve one or more components of physical fitness based on elements such as frequency, intensity, and duration[1]. The academic community points out that the practice of physical exercise brings psychological, cognitive, and physiological benefits, such as reducing stress levels, consolidating memories, controlling body weight, improving cardiorespiratory capacity and skeletal muscle, among others[2-4].

However, even with so many benefits, there is still a prevalence of physical inactivity in the population, especially in women[5]. In Brazil, 45% of the population still does not meet the minimum recommendation of daily physical activity for health. This percentage is higher in women due to work demands, family obligations, body dissatisfaction and low self-efficacy for the practice of physical activities, lack of company, motivation, among other factors[6-8].

Thus, to engage and stay in a physical exercise program, the practitioner must have motivation in addition to medical indications or health and aesthetic needs. This psychological factor has been addressed in studies of the Theory of Self-Determination[9], which indicates that to feel motivated, it is necessary to meet basic psychological needs for competence, autonomy, and relationship, needing to rely on intrinsic and extrinsic factors.

When related to the practice of physical exercise, motivation goes through physiological, psychological, social, affiliation, power, achievement, incentives, rewards, and difficulties factors that complement different factors, such as disease prevention, physical conditioning, weight control, appearance, stress control, entertainment, health rehabilitation, competition, and social recognition[10]. Thus, the motivation to practice physical exercise is reflected in the quality of life (QOL) since it involves self-esteem, social, family, psychological, and personal well-being, economic power, acquisition, and autonomy in the day's tasks, and can be improved through regular physical exercise[11,12].

According to Abreu and Dias[13], the regular practice of physical exercise has beneficial effects, either on the individual or in the community. It reduces individual risk factors, increases the person's participation in society, being a beneficial activity for physical, psychological, and social health, and improving QOL.

Even though QOL is widely researched, it is still relevant, considering the increase in life expectancy. The QOL describes not only a person's health status but also aspects related to the general environment. This subjective concept involves the perception of pleasant and unpleasant sensations felt by the individuals in their reality[14], including people's motivation to adopt healthy habits[15].

For the World Health Organization (WHO), QOL can be considered as to how an individual perceives his position in life and culture. Therefore, he becomes aware of his satisfaction, expectations, living standards, concerns, and motivations[16].

Some studies have already analyzed the relationship of the reasons for the practice of physical exercise[17-21]. However, there are few reports found that associate this relationship with the QOL of women. In this sense, the objective of this study was to identify the motivational factors for the practice of physical exercises and relate them to the QOL of women.

METHODS

This is a quantitative, cross-sectional, descriptive study carried out in an exclusive gym for women, in Cianorte, Paraná, Brazil, from May to June 2017. The study was previously approved by the Research Ethics Committee of the Universidade Paranaense - UNIPAR, from Umuarama-PR, under the number 1753725/2016.

Participants

The participants of this cross-sectional study were

48 women, between 19 and 59 years old, who practice exercise in gyms. We selected the sample in a non-probabilistic manner. Women who agreed to participate and met the inclusion criteria voluntarily signed an informed consent form. We included in the study gymnastics practitioners at the gym, exclusively for women, for at least six months, and with a minimum age of 18 years old.

Instruments

The information related to the reasons for the practice of physical exercise was obtained by applying the Exercise Motivations Inventory (EMI-2)[22], translated, adapted, and validated for the Brazilian population[22]. This is an instrument composed of 44 items, incorporated into ten motivating factors, representing a broad aspect of reasons for the practice of physical exercise, determined as "a priori" and legitimized through confirmatory factor analysis resources: fun/well-being, stress control, social recognition, affiliation, competition, health rehabilitation, disease prevention, body weight control, physical appearance, and physical condition. The items are answered using a 6-point Likert scale (0 = "nothing true" to 5 = "totally true"), headed by the statement "Personally, I practice (or could practice) physical exercise". In its outline, the participant who stood in front of the 44 items that make up the document, the EMI-2 allows to identify, dimension, and classify factors of intrinsic and extrinsic motivation for the practice of physical exercise[22]. The higher the score, the greater the individual's motivation to practice the exercise on that factor. Cronbach's alpha of the instrument was α = 0.84, indicating strong data reliability.

We assessed QOL using the World Health Organization's Quality of Life Group (WHOQOL) instrument, abbreviated version. This instrument comprises 26 questions divided into four domains: physical, psychological, social relations, and the environment[23]. The domains are represented by questions formulated for a Likert-type response scale, with an intensity scale, whose response scores vary between 1 and 5. The final scores for each domain are calculated using a syntax, which considers the answers to each question that makes up the domain, resulting in final scores on a scale from 5 to 20[23]. The closer to 20, the better the QOL in the assessed domain. Cronbach's alpha of the instrument was α = 0.77, indicating strong data reliability.

Procedures

Before completing the questionnaires, a brief instruction was given to the participants containing information regarding the research objectives, the target audience, and the estimated time to complete the questionnaire (approximately 15 minutes).

The questionnaires were applied individually and in a private location in the gym. The participants were instructed to complete, and during questionnaire application, the researchers were available to clarify possible doubts.

Data analysis

Data analysis was performed using descriptive and inferential statistics. We used the Kolmogorov-Smirnov normality test and the Levene homogeneity test of variances for the preliminary analysis of the data. As the data presented a normal distribution, the mean and standard deviation were used to characterize the results. The independent t-test compared the motivating factors and the QOL according to the age group. Cohen's d (1992) was calculated to check the size of the effect, adopting the following cutoff points: d = 0.20 represents a small effect size; d = 0.50 average; and d = 0.80 large. Pearson's correlation coefficient investigated the relationship between motivation factors and the QOL domain. All analyzes were conducted using the SPSS software (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.), adopting a significance level of $p < 0.05$.

RESULTS

The average age of the 48 women was 39.4 ± 11.7 years old. Table 1 shows the descriptive values of the sample. The averages in ascending order of the observed motivating factors were: disease prevention (4.41 ± 0.08), fun (3.86 ± 0.91), physical conditioning (3.84 ± 1.03), control of the stress (3.40 ± 1.15), weight control (3.30 ± 1.49), appearance (3.14 ± 1.22), health rehabilitation (2.35 ± 1.51), competition (1.42 ± 1.41) and social recognition (0.90 ± 1.12). Regarding QOL, the mean in increasing order of the domains was: physical domain (16.36 ± 2.30), psychological domain (16.27 ± 2.34), social domain (15.79 ± 1.75), and environmental domain (14.72 ± 2.19).

When comparing the motivating factors and the QOL domains according to the age group (Table 2), there were higher values of health rehabilitation scores (1.10 ± 1.25 vs. 2.08 ± 1.44; p = 0.016) in older women (over 39.4 years), and higher score in the physical domain of QOL (17.06 ± 2.09 vs. 15.78; p = 0.048) in younger women (up to 39, 14 years old). The size of the effect of the differences was considered large (d> 0.50).

When correlating the motivating factors and the QOL domain (Table 3), there was a significant (p <0.050) positive and weak correlation of the physical domain with weight control (r = 0.24), appearance (r = 0, 33), the weak and negative correlation of the physical domain with health rehabilitation (r = -0.33), and positive and weak correlation of the social domain with physical conditioning (r = 0.23).

DISCUSSION

This study aimed to identify the motivational factors for the practice of physical exercises and relate them to women's QOL. As main findings, we highlight the prevention of diseases as the main motivational factor for physical exercises. Also, older women reported greater motivation due to health rehabilitation, whereas younger women had a better perception of the physical

Table 1 — Descriptive values (minimum, maximum, mean, standard deviation, asymmetry, and kurtosis) of all variables.

Variable	Minimum	Maximum	M (SD)	Asymmetry	Kurtosis
Motivation Factors					
Prevention of diseases	1.17	5.00	4.41 (0.80)	-2.03	4.97
Physical Conditioning	0.75	5.00	3.84 (1.03)	-0.79	0.24
Weight control	0.00	5.00	3.30 (1.49)	-0.52	-0.80
Appearance	0.00	5.00	3.14 (1.22)	-0.72	0.32
Stress management	0.00	5.00	3.40 (1.15)	-0.82	0.87
Fun	1.17	5.00	3.86 (0.91)	-0.60	0.16
Health Rehabilitation	0.00	5.00	2.35 (1.51)	0.28	-0.76
Competition	0.00	5.00	1.42 (1.41)	0.55	-0.18
Social recognition	0.00	5.00	0.90 (1.12)	1.69	3.07
Domains of Quality of Life					
Physical Domain	10.86	20.00	16.36 (2.30)	-0.70	-0.19
Social Domain	10.67	18.67	15.79 (1.95)	-0.43	-0.30
Psychological Domain	9.33	20.00	16.27 (2.34)	-0.42	0.36
Environmental Domain	9.50	18.50	14.72 (2.19)	-0.38	-0.26

M = mean; SD = standard deviation

Table 2 — Comparison of the motivating factors and the domains of quality of life of women according to the age group.

Variables	Age group - mean (SD)		p*	d
	≤ 39.4 years old (n = 22)	**> 39.4 years old (n = 26)**		
Motivation Factors				
Prevention of diseases	4.46 (0.67)	4.37 (0.90)	0.677	0.11
Physical Conditioning	4.04 (0.91)	3.68 (1.11)	0.230	0.35
Weight control	3.68 (1.30)	2.99 (1.59)	0.111	0.47
Appearance	3.46 (0.95)	2.87 (1.37)	0.097	0.50
Stress management	3.43 (0.94)	3.38 (1.31)	**0.889**	**0.04**
Fun	3.96 (0.81)	3.77 (0.99)	0.482	0.21
Health Rehabilitation	2.14 (1.26)	2.52 (1.69)	0.389	0.25
Competition	1.10 (1.25)	2.08 (1.44)	**0.016**†	**0.72**
Social recognition	1.41 (1.56)	1.43 (1.31)	**0.976**	**0.01**
Domains of Quality of Life	0.65 (0.91)	1.11 (1.26)	**0.165**	**0.41**
Physical Domain				
Social Domain	17.06 (2.09)	15.78 (2.35)	**0.048**†	**0.57**
Psychological Domain	15.96 (1.97)	15.64 (1.95)	**0.566**	**0.16**
Environmental Domain	16.54 (2.24)	16.05 (2.45)	**0.474**	**0.20**
Motivation Factors	14.77 (1.98)	14.69 (2.39)	**0.901**	**0.03**

* Independent t-test. † Significant difference - $p < 0.05$. SD = standard deviation; d = effect size.

domain of QOL. Positive correlations were found between the physical domain and weight and appearance control and the general QOL score with weight control; negative correlations were observed between physical domain and rehabilitation and between social domain and physical conditioning.

The main motivational factor for bodybuilding practice was to prevent diseases. We found similar data in a study by Gonçalves and Alchieri[18] in which most of the 309 people demonstrated to practice physical exercise for health reasons, especially among women. We observed similar results in the studies by Balbinotti and Capozzoli[17] and Santos and Knijnij[24]. Even with similar findings, we noted that motivation is regulated by environmental and personal factors and is characterized as an intentional action directed towards a certain goal[25]. Studies have suggested that motivation is directly associated with adherence and permanence in

Table 3 — Correlation between the motivating factors for exercise and the domains of quality of life of women.

Variables	Motivation Factors										QOL domains			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Motivation factors														
1. Presence of Disease	-	0.67*	0.44*	0.46*	0.58*	0.60*	0.26*	0.40*	0.20	0.20	-0.05	0.14	0.01	-0.09
2. Physical Conditioning		-	0.36*	0.53*	0.44*	0.62*	0.31*	0.42*	0.39*	0.43*	0.12	**0.23***	0.21	0.16
3. Weight Control			-	0.60*	0.41*	0.34*	**0.22**	**0.07**	**0.21**	**0.10**	**0.24***	**-0.02**	**-0.06**	**0.11**
4. Appearance				-	0.53*	0.52*	0.51*	0.31*	0.24*	0.37*	**0.33***	0.16	0.16	0.08
5. Stress Control					-	0.62*	0.46*	0.32*	0.34*	0.25*	0.01	0.07	-0.03	-0.11
6. Fun						-	0.58*	0.30*	0.50*	0.45*	0.12	0.14	0.05	0.10
7. Affiliation							-	0.39*	0.50*	0.59*	0.14	0.06	0.05	0.09
8. Health Rehabilitation								-	0.41*	0.60*	**-0.33***	0.04	0.06	0.01
9. Competition									-	0.66*	0.01	0.10	0.12	0.01
10. Social Recognition										-	-0.04	0.05	0.13	0.09
Domains of Quality of Life														
11. Physical Domain											-	0.55*	0.47*	0.59*
12. Social Domain												-	0.55*	0.66*
13. Psychological Domain													-	0.60*
14. Environmental Domain														-

* Significant correlation ($p < 0.05$) - Pearson's correlation

the practice of physical exercises[26,27] and that it is related to the well-being of the participants for providing the experimentation of psychological benefits through the practice of exercises[28,29]. The pleasure provided by physical exercise can develop greater persistence, confidence, reduced stress, and satisfaction with the practice[30], so professionals must evaluate and understand this phenomenon to keep the student physically engaged and active.

Factors such as accumulated experiences throughout life and individual differences are linked to motivation, which can also be classified as extrinsic or intrinsic. Extrinsic motivation is formed by activities that seek to achieve something external, such as money or status, and, in general, if not controlled, can generate a state of greater tension and higher levels of stress and anxiety. On the other hand, intrinsic motivation has a strong relationship with people and the thought that everything is a consequence of involvement and commitment, linked to more stable and lasting behaviors[31]. Understanding the psychological aspects involved in the choice of physical activities and understanding the motivational factors that influence the maintenance of activities is essential for health and sports professionals since classes/activities can be planned to focus on student expectations[32].

In this study, disease prevention, followed by fun and physical conditioning, were the three main factors listed. The literature shows that in Crossfit® practitioners, for example, factors such as pleasure and challenge are considered essential, while bodybuilding practitioners point to health as the primary motivation for exercising[33]. In street runners, the influence of family/friends, health, challenge, and the practice of some physical activity were the main highlighted motivations[34]. Another study conducted with adults (18 to 40 years old) found that sociability and competitiveness were not so relevant for Pilates®/yoga and physical conditioning practitioners, and aesthetics was a major motivational factor for individuals who practiced physical conditioning than those dancing and wrestling[35]. Considering these aspects, it is valid to understand that physical exercise can be considered an intervening factor in the practitioners' motivational and well-being aspect[35,36].

This study was carried out with adult women who practice gymnastics in a gym. As we stated above, the type of physical exercise influences several motivational aspects. If the exercise has a more competitive and challenging characteristic, such as Crossfit®, it is more logical that practitioners are more motivated to practice it due to issues related to competitiveness.

Compared to younger women, in this study, older women reported greater motivation to practice physical exercises due to health rehabilitation. This finding is in line with other reports in the literature[35]. The aging process generates several physical and physiological changes, such as decreased muscle mass and strength, flexibility, balance, and physical fitness in general, which can increase the risk of health problems in general[37]. Therefore, it is common for older women to seek physical exercise to rehabilitate an existing disease.

On the other hand, younger women had a better perception of the physical domain of QOL. Younger women seek the practice of exercise to improve the perception of the physical aspect. Such findings align with the literature, demonstrating that younger women are always looking for physical care through regular exercise, diet, and aesthetic procedures to improve their perception of this specific domain[38].

Although this study included only women, gender can also trigger differences in motivational factors related to physical exercise. A study in corridors conducted by Truccolo et al.[29] found that, for women, the most important factors were physical fitness and health (88.2%), enjoying being outdoors (82.4%), and improving self-esteem (64.7%) while feeling less anxiety (67.7%), improving physical fitness/health (64.5%) and reducing stress (58.1%) were the most mentioned by men.

The lack of motivation to practice physical exercises can be one of the leading causes of dropping out[39]. The sociability dimension is related to the time of practice and, consequently, to attendance, showing that the longer individuals practice physical exercises, the more motivated they are due to the social aspect of the practice[35].

We observed a linear association of the physical domain with weight and appearance control and the general score with weight control (Table 3). Such findings allow the understanding that the perception about the physical seems to favor the weight control and appearance of the women who practice physical exercise. The evidence presented here can be explained because the care of physical appearance allows women to adopt greater care in the practice of exercise, balanced diet, aesthetic care, with direct implications for the perception of the physical and the general perception of QOL[40-41].

In this sense, as the perception of the physical and general QOL increases, these domains of motivation tend to be enhanced. Thus, the findings found in this investigation corroborate those found in the literature, demonstrating that the physical domain and general QOL are a precursor in the development of motivation in women practicing exercise[40-41].

Despite the contributions to the literature regarding motivation and QOL in women who practice physical exercise, the study has some limitations that need to be pointed out. First, the small size of the self-selected sample and the geographical restriction limits the external validity of the study and do not allow generalization of the results. Another limitation was the cross-sectional design of the study, which does not enable the establishment of cause-effect relationships between the variables and the number of instruments used in the assessment of motivation and QOL, making it difficult to compare the results.

CONCLUSION

The physical and general QOL domains seem to be intervening factors in women's motivation to practice physical exercise. Also, we highlight that the main motivational factor for the practice of physical exercise in women was the prevention of diseases, especially in

older women. Younger women had a better perception of the physical QOL domain. From a practical point of view, the findings of this investigation contribute to assist in the understanding of how physical exercise can interfere in the practitioner's psychological attributes, specifically in the motivation and in the QOL of women. Thus, these results can assist exercise professionals in intervention with this population and prescription of training and retention of their respective practices.

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