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# The Effect of Yoga on The Quality of Life of Individuals Who Started the Practice Due to Chronic Pain

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## Abstract

**Introduction:** Characterized as the pain which persists beyond the cure time of the tissues (three or more months), chronic pain is a debilitating disease with big biological, psychological, economic and social impacts that often result in a poor quality of life.

**Objectives:** To evaluate the effects of yoga practice in the quality of life of individuals with chronic pain.

**Methods:** transversal analytical study. Carried out through the months of September and October of 2022 in the city of Igrejinha/RS. The participants are individuals who practice yoga and have or have had chronic pain. After being given a detailed description of the survey, the identifying information was collected and the evaluation forms/questionnaires were answered, the Visual Analogue Scale (VAS) and the Short Form - 36 questionnaire.

**Results:** an inversely proportional correlation of the pain related to the physical aspect, the emotional aspect and the social aspect was noticed. In other words, higher scores in said areas showed lower pain reports. No correlation was noticed in the other areas.

**Conclusion:** Practicing yoga revealed to have a positive influence in the quality of life of individuals with chronic pain in the physical, emotional and social aspects.

**Keywords:** Yoga; Quality of life; Chronic pain

## Introduction

Chronic pain is a relevant condition that affects millions of people and comprises multiple components, including sensory, emotional, cognitive and behavioral, being a serious public health problem, in addition to considerable morbidity and mortality [1]. It may result from a minor injury, i.e. a progression of acute pain, or it may have an insidious onset, making it difficult to associate it with a distinct event. It is defined as pain that lasts beyond the usual

tissue healing time, usually 12 weeks (3 months), and can lead to disability, anxiety and depression, sleep disorders, poor quality of life and health expenses [2].

Given the diversity of chronic pain syndromes, its exact prevalence is difficult to measure. Evidences suggest that increasing age is associated with an increase in the prevalence of chronic pain, as women are more prone than men and individuals living in lower



socioeconomic conditions have shown not only greater prevalence, but also greater severity [3].

According to the WHO [4], the concept of quality of life is “an individual’s perception of their position in life, in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns.” It is a broad definition that encompasses the complexity of the construct and correlates the environment with physical and psychological aspects, degree of independence, social relationships and personal beliefs [5]. Previous studies indicate that the decrease in quality of life is often associated with the prevalence of psychosomatic and motor function disorders, as well as impaired social performance. Physical activity is a decisive factor in quality of life [6].

Yoga is an ancient practice that originates from Indian philosophy and seeks to improve the physical and mental health of individuals through postures, breathing and meditation. The term is derived from the Sanskrit word *yuj*, which in English means “union”, symbolizing the combination of body, mind and spirit. The use of yoga by health professionals, including physiotherapy professionals, has been shown to be a possible and effective practice, as it adds positively to functional results. The practice can favor individuals with physical limitations, improving balance and gait, muscle strength and flexibility, and reducing pain, for example. Yoga has also been shown to ease symptoms of anxiety, depression and trauma [7-9].

## Methods

The study was of the cross-sectional analytical type, carried out between September and October 2022 in the municipality of Igrejinha/RS. This research was in accordance with the guidelines of resolution 466/12 of the National Health Council and was approved by the Ethics and Research Committee of the Lutheran University of Brazil (ULBRA), under opinion No. 4,940,711. Individuals of both genders, aged 18 years or older, who have or had had chronic pain, and who had been practicing yoga for more than 6 months, were included. Exclusion criteria were individuals who did not agree with the TCLE, did not complete the questionnaires completely, who made frequent use of analgesics and anti-inflammatories and had musculoskeletal autoimmune diseases. After receiving a detailed description of the research, all participants signed the Free and Informed Consent Form (TCLE). Identification data was collected and, afterwards, the evaluation form/questionnaire, the Visual Analog Scale and the Short Form – 36 questionnaire were answered.

The identification data sheet completed by the participants contained the following data: name, age, sex, gender, color, profession, education. The questionnaire comprised closed and

open questions, namely: time of yoga practice, if you perform another physical exercise, the motivations for the practice, if there was an indication, where the pain is and for how long, and if there was a decrease in the condition algic According to Marconi; Lakatos [10], the questionnaire is a “data collection instrument, consisting of an ordered series of questions, which must be answered in writing and without the presence of the interviewer”. The closed questions of the questionnaire were of the following types: a) categorical (yes and no); b) multiple choices and; c) questions with multiple answer alternatives. Also, open questions with blank space for the respondent to express their position [11]. Then, the participants responded to the VAS, which helps in measuring the intensity of pain, marking its degree, with 0 meaning total absence of pain and 10 the maximum level of pain bearable by the patient. It is also used to verify the patient’s evolution during treatment and even at each visit, in a more reliable way [12].

To measure quality of life, the Short Form-36 quality of life questionnaire was used, consisting of 36 questions. The SF-36 is divided into eight parts of questions: functional capacity with 10 topics, physical aspects with 4 topics, pain with 2 topics, general health with 5 topics, vitality with 4 topics, social aspects with 2 topics, emotional aspects with 3 topics and finally, mental health with 5 topics and two summary measures – Physical component and Mental component. Higher scores indicate better health status and lower scores indicate worse health status [13].

## Statistical Analysis

The type of distribution of the variables was analyzed using the Shapiro-Wilk test. Due to the high number of variables with non-normal distribution, it was decided to use non-parametric measures and tests for all variables. Ordinal variables with numerical and scalar descriptors are described based on the median, interquartile range (AIQ) and maximum and minimum values. The description of categorical variables and ordinal variables with non-numeric descriptors was carried out using absolute (n) and relative (%) frequencies.

The inferential analysis was performed using Kendall’s correlation and the Mann-Whitney test. The value of  $p < 0.05$  was adopted as a statistical significance criterion. Analyzes were performed using Jamovi 2.3 software.

## Results

An inversely proportional correlation of the pain related to the physical aspect, the emotional aspect and the social aspect was noticed. In other words, higher scores in said areas showed lower pain reports. No correlation was noticed in the other areas [Table 1-3].

**Table 1:** Gender prevalence of yoga practitioners.

Sex	counts	% do Total	% accumulated
F	15	88.20%	88.2%
M	2	11.80%	100.0%

**Table 2:** Individuals' age group, practice time, degree of pain (VAS) and scores of the 8 domains evaluated by the SF-36.

	Mediana	AIQ	Minimum	Maximum	Shapiro-Wilk	
					W	p
Age	47	20	27	84	931	225
Time of Practice (Years)	5	6	1	20	807	3
EVE	5	5	0	9	952	496
Functional Capacity	80	30	50	100	889	45
Limitation by Physical Aspects	100	25	0	100	603	<.001
Pain	57.5	20	45	100	910	101
General Health Status	70	10	35	90	882	35
Vitality	70	25	40	95	958	588
Social Aspects	75	37.5	25	100	868	20
Emotional Aspects	66.7	100	0	100	776	<.001
Mental Health	72	28	36	96	943	354

**Table 3:** Other modalities of physical exercise that practitioners perform.

Other Physical Exercise	counts	% do Total	% accumulated
walk	3	17.60%	17.60%
functional	2	11.80%	29.40%
bodybuilding	4	23.50%	52.90%
pilates	1	5.90%	58.80%
No	4	23.50%	82.40%
dance and bodybuilding	1	5.90%	88.20%
volleyball/walking	1	5.90%	94.10%
physiotherapy/bodybuilding	1	5.90%	100.00%

**Table 4:** Correlations between pain (VAS) and SF-36.

		Time of Practice (Years)	EVA	Functional Capacity	Limitation by Physical Aspects	DOR	General Health Status	Vitality	Social Aspects	Emotional Aspects	Mental Health
Time of Practice (Years)	Tau-B de Kendall	—									
	p-values	—									
EVA	Tau-B de Kendall	-0.155	—								
	p-values	0.385	—								
Functional Capacity	Tau-B de Kendall	0.139	-0.275	—							
	p-values	0.435	0.123	—							
Limitation by Physical Aspects	Tau-B de Kendall	0.168	-0.518	0.416	—						
	p-values	0.347	0.004	0.002	—						
DOR	Tau-B de Kendall	0.151	-0.0039	0.592	0.641	—					
	p-values	0.397	0.0029	<.001	<.001	—					
General Health Status	Tau-B de Kendall	-0.051	-0.005	0.008	0.151	-0.052	—				

	p-values	0.775	0.777	0.962	0.396	0.771	—				
Vitality	Tau-B de Kendall	0.174	-0.261	0.541	0.451	0.698	-0.102	—			
	p-values	0.331	0.143	0.002	0.011	<.001	0.567	—			
Social Aspects	Tau-B de Kendall	0.259	-0.537	0.359	0.723	0.053	-0.009	0.535	—		
	p-values	0.147	0.003	0.044	<.001	0.002	0.96	0.003	—		
Emotional Aspects	Tau-B de Kendall	0.338	-0.514	0.236	0.371	0.353	-0.009	0.042	0.639	—	
	p-values	0.058	0.004	0.187	0.037	0.048	0.958	0.019	<.001	—	
Mental Health	Tau-B de Kendall	0.198	-0.297	0.022	0.593	0.41	0.008	0.562	0.611	0.455	—
	p-values	0.268	0.096	0.218	<.001	0.022	0.964	0.002	<.001	0.011	—

## Discussion

Many studies indicate that several factors influence chronic pain in the general population, these factors involve biopsychosocial aspects, which describe pain and disability as a multidimensional and dynamic integration between physiological, psychological and social factors that influence each other [14]. The results of studies by Andrade and Chen [15] pointed to the need for policies and prevention programs adapted with attention to vulnerable groups. In this regard, current guidelines have proposed that pain management should involve patient education, supervised exercise, and therapy. However, the most common treatment reported among those with back pain in Brazil was medication (45%). Only 28% of adults with back pain reported exercise and even fewer, 13%, engaged in physical therapy.

In the current study, a predominance of female practitioners was observed, as reported in the research by Costa-Júnior et al. [16], in which there is a perception of gender and health issues that would favor women in terms of body care and with the prevention of diseases, dialogues about the diagnosis of the disease, ease of care and adherence to treatment. This idea of the female body as more vulnerable appeared as one of the justifications for women's greater health care. Which would justify its higher number in most studies. In this way, the work of Mizuno et al. [17], analyzed the perceptions of adult and elderly women about changes in health conditions, attitudes and behaviors related to the practice of Hatha Yoga. Ten women aged between 54 and 72 years participated in this qualitative, descriptive research. A focus group session was held with topics related to the practice of yoga, physical, health and illness, social and psycho-emotional conditions. The results indicated that the program provided women with the learning and incorporation of asanas, making them more aware and autonomous in taking care of their physical health. Understanding the philosophical concepts of yoga was reflected in coping with personal situations and problems, in family and social relationships, in addition to providing a new look at themselves in relation to self-care and individuality.

Regarding the participants' age group and pain, whose mean age was 47 years old and showed good quality of life scores, it was observed that as age increases, the degree of pain decreases in yoga

practitioners. Similar to the research by Wettsein et al. [18], which investigated the association of chronological age with disability and well-being among patients with chronic low back pain. In these analyses, 228 patients with nonspecific chronic low back pain were included, whose age ranged from 41 to 82 years. Outcomes were pain intensity, pain disability, and quality of life measures (physical and mental health; well-being: anxiety, depression, perceived control over life, affective distress). The study's findings are in line with the "wellness paradox", which asserted that although older individuals may face cognitive and physical declines, as well as other experiences of loss and an increased risk of disability, their well-being being is not necessarily lower compared to younger individuals, implying that objective versus subjective criteria of quality of life and of "successful aging" can be notably divergent.

In the association of chronic pain and physical aspect, an inverse relationship was observed, this may be related to the fact that most participants also perform other physical activities in addition to yoga. This result was similar to the work by An et al. [19], who observed that the amount of physical activity was more important than the type of physical activity and was significantly related to better life satisfaction and happiness in young, middle-aged adults. -age and seniors. In addition, another

review on quality of life by Phuphanich et al. [20], shows that in the practice of yoga, improvements in function, QoL and pain level were perceived for chronic pain conditions. Pointing out that the practice can serve as an effective adjunctive treatment of many medical and psychiatric conditions. The American College of Physicians has strongly recommended the initial treatment of chronic low back pain with exercise, multidisciplinary rehabilitation, mindfulness-based stress reduction, tai chi, yoga, motor control relaxation, or progressive relaxation.

Chronic pain and depression are closely correlated in terms of occurrence and development and are capable of mutually promoting their own severity progression. Which explains the inverse association observed in this study, pain in relation to the emotional aspect. As shown in the study by Sheng et al. [21], clinical studies revealed that chronic pain, as a state of stress, often induced depression and that up to 85% of patients with chronic pain are affected by severe depression. Showing worse prognosis compared

to those with chronic pain only.

Knowing this, the studies by Saeed et al. [22] brought recommendations with grade B of evidence for the use of yoga as an adjuvant treatment in cases of depression, anxiety and panic disorders. However, the results varied according to the style of yoga. Exercise-based practice was not effective in reducing depressive symptoms, but integrative styles with greater emphasis on meditation and breath control were effective. Yoga and meditation have become widely accepted as non-pharmacological modalities for reducing stress and anxiety, as well as improving overall health. Meditation has been shown to improve attention and self-awareness in many populations, according to research by Lemay et al. [23].

the social context significantly affects the processing and experience of pain. In this sense, the inverse relationship between chronic pain and the social aspect was also observed in yoga practitioners and corroborates the study by Hadi et al. [24], in which patients with chronic pain had worse QoL compared to the general population and patients with limiting illnesses. The condition restricts their physical activity, compromising their ability to work, play with their children, enjoy a good relationship with their spouses, carry out day-to-day tasks and enjoy a good night's sleep. Which can sometimes lead to anger, frustration and depression. When depressed, patients felt more pain and less motivation to engage in any physical activity. It becomes a vicious circle that is difficult to break.

According to studies by Gray and McCormack [25], a systematic review of evidence-based guidelines (which included a relevant recommendation) and six individual guidelines included recommendations for yoga as one of the treatments for chronic pain. The guidelines were vague regarding the duration, frequency and type of yoga recommended due to limited evidence to inform these parameters, being necessary, according to them, additional randomized and controlled clinical trials of high methodological quality that clearly report the details of the intervention protocols and comparators may allow for updated versions of the guidelines to provide greater specificity.

## Conclusion

The practice of yoga has shown to have a positive influence on the quality of life of individuals with chronic pain in the physical, emotional and social aspects. In the other areas, no correlation was observed.

## Conflict of Interests

None.

## Acknowledgment

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