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## *Healthy lifestyle habits in relation to physical self-concept in Ecuadorian taekwondo practitioners in times of the "COVID 19" pandemic*

*Los hábitos de vida saludables en relación al autoconcepto físico en taekwondokas ecuatorianos en tiempos de la pandemia "COVID 19"*

*Hábitos de vida saudável em relação ao autoconceito físico em taekwondokas equatorianos em tempos de pandemia da "COVID 19"*

*Pablo Anthony Rendon Morales<sup>1\*</sup>  , Richard Manuel Manangón Pesantez<sup>1</sup>  ,  
Vanessa Carolina Méndez Carvajal<sup>1</sup>  , Guillermo Leonidas Puga Burgasi<sup>1</sup> *

<sup>1</sup>Central University of Ecuador. Ecuador.

\* Corresponding author: [parendon@uce.edu.ec](mailto:parendon@uce.edu.ec)

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## ABSTRACT

The practice of Taekwondo, in the confinement of the COVID19 pandemic, is related to healthy lifestyle habits and physical self-concept. In this sense, the objective of this research was determined to identify the relationships that may occur between the responses to the CAF (*Physical Self-Concept Questionnaire*) and healthy lifestyle habits of Taekwondo practitioners nationwide. An ex post facto design of a retrospective and correlational nature was implemented, where the independent variables are not susceptible to manipulation, a discretionary non-probabilistic sampling was used, which sample is made up of 423 taekwondo athletes between 12 and 58 years old. The participants completed the *Physical Self-Concept Questionnaire* (CAF) and the *Healthy Life Habits questionnaire*. The results prove the importance of Taekwondo confinement training as a contribution to a healthy life, in relation to their own perception of the participants' physical self-concept. It was concluded that the practice of taekwondo during the pandemic contributed significantly to the care and development of healthy lifestyle habits.

**Keywords:** Physical self-concept, Taekwondo, healthy lifestyle habits, COVID 19.

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## RESUMEN

La práctica de taekwondo, en el confinamiento de la pandemia del COVID 19, guarda relación con los hábitos de vida saludables y autoconcepto físico. En tal sentido, se determinó como el objetivo de esta investigación identificar las relaciones que puedan producirse entre las respuestas al CAF (*Cuestionario de Autoconcepto Físico*) y hábitos de vida saludables de los practicantes de Taekwondo a nivel nacional. Se implementó un diseño ex post facto de carácter retrospectivo y correlacional, donde las variables independientes no son susceptibles de manipulación, se utilizó un muestreo no probabilístico discrecional, cuya muestra la componen 423 deportistas de taekwondo entre 12 y 58 años. Los participantes cumplieron el *Cuestionario de Autoconcepto Físico* (CAF) y el *Cuestionario de hábitos de vida saludables*. Los resultados, comprueban la importancia de los entrenamientos en confinamiento de taekwondo como aporte de una vida saludable, en relación con su propia percepción del autoconcepto físico de los participantes. Se concluyó



que la práctica del taekwondo en época de pandemia aportó significativamente en el cuidado y desarrollo de los hábitos de vida saludables.

**Palabras clave:** autoconcepto físico, taekwondo, hábitos de vida saludables, COVID 19.

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## RESUMO

A prática do Taekwondo, no confinamento da pandemia da COVID-19, está relacionada a hábitos de vida saudáveis e ao autoconceito físico. Nesse sentido, o objetivo desta pesquisa foi identificar as relações que podem ocorrer entre as respostas ao CAF (*Questionário de Autoconceito Físico*) e os hábitos de vida saudável dos praticantes de Taekwondo em nível nacional. Foi implementado um projeto retrospectivo e correlacional ex post facto, em que as variáveis independentes não são suscetíveis de manipulação. Foi utilizada uma amostragem não probabilística discreta, com uma amostra de 423 atletas de taekwondo entre 12 e 58 anos de idade. Os participantes preencheram o *Questionário de Autoconceito Físico* (CAF) e o *Questionário de Hábitos de Estilo de Vida Saudável*. Os resultados comprovam a importância do treinamento de confinamento do taekwondo como contribuição para um estilo de vida saudável, em relação à percepção dos próprios participantes sobre seu autoconceito físico. Concluiu-se que a prática do taekwondo em tempos de pandemia contribuiu significativamente para o cuidado e o desenvolvimento de hábitos de vida saudáveis.

**Palavras-chave:** Autoconceito físico, Taekwondo, hábitos de vida saudáveis, COVID 19.

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## INTRODUCTION

Self-perception, defined as the process by which a person self-conceptualizes himself, is considered a deep and powerful human need, essential for a healthy lifestyle, good functioning and self-realization; that is, this concept is related to general well-being. Physical self-concept, on the other hand, refers to the assessment that a person has of their own body (Posso *et al.*, 2022).



As the study of the physical self-concept is understood from a hierarchical and multidimensional perspective, for Fox and Corbin (1989), it is crucial to assume that the theoretical assumptions of the general model of self-concept are also valid to explain the internal structure of each of the physical self-concepts. domains related to the internal system of physical self-concept:

- **Multidimensionality:** the self-concept cannot be understood if its multidimensional nature is ignored, and this is the first assumption, even if the structure of the physical self-concept has two meanings: on the one hand, it serves to refer to the domains for the self-concept, and on the other hand, is also used with reference to the dimensions of each of these domains.
- **Hierarchical structure:** Physical self-assessment has a function that mediates between perceived dimensions of self-concept and global self-esteem. General physical self-concept mediates between specific dimensions of sporting ability, physical condition, attractiveness, and strength; at the other extreme is the general self-concept.

These are the sub-domains that make up the physical self-concept model: physical ability, physical condition, physical attractiveness, and strength. The four-domain model is hierarchically structured as follows: self-esteem is at the top; below this, the physical self-assessment: physical self-concept; and at the base, four different subdomains: sport / sports competition, physical condition, physical attractiveness and strength. The intermediate level acts as a mediator between different subdomains and global self-esteem.

As can be seen, there is a small modification of the proposed model, sports physical competence is replaced by physical ability; however, there is a greater number of dimensions, namely: strength, physical activity, obesity, sports ability competition, resistance, coordination, health, appearance and flexibility.

On the other hand, the *Physical Self-Concept Questionnaire* (CAF) is built assuming the model of Fox and Corbin (1989) with variations in the conceptual delimitation of the four



dimensions and in the replacement of the denomination of sports competition by physical capacity.

In this line, self-concept is considered to have a crucial role in personality development, which affects personal and social functioning. Therefore, the uncertainty generated by a low self-concept will be affected when participating in socially evaluated tasks. In addition, and specifically, those people who do not perceive their physical reality as sufficient will have a sense of incompetence that can have a significant impact on the motivation to perform physical activities.

On the other hand, for García-Moya and Castillo (2019), maintaining a healthy lifestyle is a key factor in developing a positive physical self-concept. This healthy lifestyle includes the following habits: balanced and nutritious eating, regular physical activity, adequate rest, stress reduction, disease prevention, and the formation of relaxation habits. In this way, the individual develops a positive self-esteem and a positive body image, which allows greater personal satisfaction and the search for a full life. Healthy lifestyle habits and physical self-concept have a significant effect on a person's general well-being (Palomino & Cárdenas, 2020; Posso *et al.*, 2022; Palacios *et al.*, 2022), as part of healthy lifestyle habits, a good diet and a positive physical self-concept, can significantly improve the quality of life, strengthening emotional and physical well-being.

A healthy lifestyle is a way of life in which health is maintained and improved; On the other hand, Aranda and Quintal (2021) state that healthy habits are considered all the behaviors of the daily life of an individual that positively affect the physical, mental and social well-being of people and when they are modified, determine the presence of factors of risk and/or protectors of well-being, it is also important to have a healthy diet, regular physical activity, weight control, adequate rest, quit smoking and prevent infectious diseases, which indicates that healthy lifestyle habits are essential to maintain an immune system strong against diseases like COVID-19.



In relation to healthy lifestyle habits and physical activity, exercise can help reduce some of the effects of stress and anxiety associated with COVID-19; adults are recommended to do a minimum of 150 minutes of regular physical activity from moderate to intense per week. Exercise not only helps maintain good physical health, but it can also help improve mood, reduce stress and anxiety, and improve sleep. Physical exercise is also important for mental health by reducing stress. and anxiety.

It should be considered that in the COVID 19 pandemic, in Ecuador, as in many parts of the world, confinement was limited and the Taekwondo gyms were left empty, but the practice of Taekwondo was not left aside for this reason, classes were developed online, as the main alternative, led to new strategies in teaching and practice, which leads to the study population of this research.

According to a study by Baek & Park (2017), Taekwondo is an excellent way to improve physical self-concept. The results showed that taekwondo exercises improved participants' perception of physical ability and body image. In the study, the researchers found that participants who practiced Taekwondo experienced significant improvements in their physical self-esteem. These findings suggest that taekwondo is a beneficial activity for improving physical self-concept.

Taekwondo participants were found to experience a significant improvement in their perception of themselves. The commitment to the sport helped to develop a better sense of self-esteem, as well as self-confidence and self-evaluation (Lim & Kim, 2012). The results of the study provide evidence that Taekwondo contributes to a better self-perception in terms of physical self-concept.

It was shown that taekwondo can positively improve the physical self-concept and healthy lifestyle habits of children (Caglar *et al.*, 2016), the benefits of taekwondo in the formation of physical self-concept and healthy habits were analyzed, as well as the positive effects on health, well-being and personal development, which results in a strong correlation between physical self-concept, healthy lifestyle habits and taekwondo (TKD).





In this article, it was addressed how Taekwondo contributed to improving physical self-concept, healthy lifestyle habits and how this discipline could help practitioners to face the Covid-19 pandemic; it has a marked prospective character, which bases the objective of this research translated into: identifying the relationship between responses to the CAF (*Physical Self-Concept Questionnaire*) and healthy lifestyle habits (sex, Taekwondo practice, body mass index).

## MATERIALS AND METHODS

The study was descriptive-correlational with an exploratory orientation, which is a technique used to explore the relationship between variables. This technique sought to describe and correlate the data collected to find relationships and trends between physical self-concept and healthy lifestyle habits. A discretionary non-probabilistic sampling was used, a total of 423 Taekwondo practitioners participated nationwide, with ages ranging from 12 to 58 years; 153 women with a mean age of 19.25 years ( $\sigma = 10.50$ ) and 270 men whose mean age was 26.49 years ( $\sigma = 14.37$ ) were divided according to gender.

The administration of the questionnaires took approximately 20 minutes. The Google Forms application was used, which helped apply it online due to the social distancing of the COVID 19 pandemic. Informed consent was obtained for minors from their representatives and another for elderly, in which it was indicated the objectives, procedure, benefits, risks and contacts of this research; It should be noted that all respondents were assured of anonymity, in order to minimize the probability of the social desirability effect.

The instrument used is the *Physical Self-Concept Questionnaire* (CAF), which gathers psychometric properties and confirms the robustness of the hypothesized model; regarding the internal structure (dimensions) of the physical self-concept; made up of 36 items (6 items for each scale), written in descriptive terms, designed to measure the following dimensions of physical self-concept:

1. Physical ability. Perception of the qualities and abilities for the practice of sports; capacity to learn sports; personal security and predisposition to sports.





2. Physical condition. Physical form; endurance and energy; confidence in fitness
3. Physical attractiveness. Perception of one's own physical appearance: security and satisfaction for one's own image.
4. Strength. Look and/or feel strong, with the capacity to lift weight, with confidence in exercises that require strength and with a predisposition to perform said exercises.
5. General physical self-concept. Opinion and positive sensations (happiness, satisfaction, pride and confidence) in the physical.
6. General self-concept. Satisfaction with oneself and with life in general.

As an alternative response to each item, five options were offered on a Likert-type scale, where 1- Strongly disagree / 2- Disagree / 3- Indifferent / 4- Agree / 5- Strongly agree, in such a way that a higher score would correspond to a higher physical self-concept.

The reliability coefficients (Cronbach's alpha) of each of its scales are the following: Physical ability  $\sigma=0.8052$ ; Physical condition  $\sigma=0.8684$ ; Physical attractiveness  $\sigma=0.8872$ ; Strength  $\sigma=0.8486$ ; General physical self-concept  $\sigma=0.8591$ ; and General self-concept  $\sigma=0.7843$ . To assess healthy lifestyle habits, a 7-question questionnaire was drafted, from gender, weight, height, perception of their healthy habits, taekwondo practice. The reliability coefficients (Cronbach's alpha) were verified, with a result of  $\sigma=0.8052$ .

To analyze the data, the SPSS computer system, version 25, was used, independent comparisons of means were made, using the T-test (tables I to III), as well as an analysis of variance (ANOVA) for the variable "Body mass index" (Table 4).

## **RESULTS AND DISCUSSION**

Table 1 divides the participants in this research into two large groups:

Women (N=153; 36 %) and Men (N=270; 64 %). The scores in the subscales of the CAF condition, attractiveness, strength, general physical self-concept, general self-concept in



relation to sex indicate that the means are the same, there are no significant differences in the means, except in ability, which we can say that there are significant differences between men and women in relation to bilateral significance.

These results agree with the study by Aravena *et al.* (2021) where the authors demonstrated that there are significant differences between men and women in relation to the ability in taekwondo (Table 1).

*Table 1.- CAF scores and sex*

CAF scales	Sex	No.	Mean	$\sigma$	t	Sig. (bilateral)
<b>Ability</b>	Women	153	18.2	2,999	3,576	0,000
	Man	270	17.03	3.37	3,694	0,000
<b>Condition</b>	Women	153	19.03	3,009	1,214	0.225
	Man	270	18.62	3,479	1,264	0.207
<b>Attractive</b>	Women	153	19.93	3,598	1.58	0.115
	Man	270	19.35	3,706	1,593	0.112
<b>Strength</b>	Women	153	20.01	3,546	0.708	0.479
	Man	270	19.74	3,796	0.722	0.471
<b>General Self physical concept</b>	Women	153	17.61	3,089	0.277	0.782
	Man	270	17.53	2,978	0.275	0.784
<b>General self-concept</b>	Women	153	16.84	4.02	1,124	0.262
	Man	270	16.42	3,506	1,083	0.280

In Table 2, it was found that (N=162; 38 %) athletes responded that they do not have healthy lifestyle habits and (N=261; 62 %) have healthy lifestyle habits. The analysis of the means indicates that the p value is less than 0.05, there are significant differences between the physical self-concept with their healthy lifestyle habits, in all the CAF scales, both in the NO and YES responses, supporting the research concerning that physical self-concept, healthy lifestyle habits and taekwondo are three concepts that are related to each other and that can help improve a person's health and well-being (González, 2017) (Table 2).



**Table 2.** - Measurement of physical self-concept and personal perception of healthy lifestyle habits

CAF scales	Healthy habits	No.	Mean	$\sigma$	t	Sig. (bilateral)
<b>Ability</b>	NO	162	16.67	3,606	0.283	0,000
	YEAH	261	17.94	2,974	-3,948	0,000
<b>Condition</b>	NO	162	17.48	3,569	-6,578	0,000
	YEAH	261	19.56	2,885	-6,262	0,000
<b>Attractive</b>	NO	162	18.57	4,447	-4,445	0,000
	YEAH	261	20.17	2,946	-4,056	0,000
<b>Strength</b>	NO	162	18.78	4,241	-4,748	0,000
	YEAH	261	20.49	3,164	-4,441	0,000
<b>General Self physical concept</b>	NO	162	16.91	3,755	-3,557	0,000
	YEAH	261	17.97	2,365	-3,213	0.010
<b>General self-concept</b>	NO	162	16.89	4,371	1,378	0.030
	YEAH	261	16.38	3,209	1,284	0.020

Table 3 shows two groups, one with people who practice taekwondo (N=393; 8 %) and another with those ones who do not practice it (N=30; 92 %), a p value less than 0.05 is observed, indicating that there are significant differences in the answers NO and YES, with a high significance of 0.000 in all the scales, which indicates the clear relationship of the perception of their physical self-concept when practicing taekwondo, in the scales of physical attractiveness and strength, a significance bordering on a p value is presented. of 0.040 and 0.030 almost to the limit, the results reflect the importance of the practice of taekwondo and the perception of physical self-concept. This information is consistent with the study by Díaz *et al.* (2019), who carried out an analysis of the literature, where they define the influence that the practice of taekwondo has on good physical self-concept (Table 3).



**Table 3. - Physical self-concept and taekwondo practice**

CAF scales	He is currently practicing Taekwondo	No.	Half	$\sigma$	t	Sig. (bilateral)
<b>Ability</b>	NO	30	16.7	2,654	-1,305	0,000
	YEAH	393	17.51	3,325	-1,582	0,000
<b>Condition</b>	NO	30	17.6	1993	-2004	0,000
	YEAH	393	18.85	3,384	-3,122	0,000
<b>Attractive</b>	NO	30	20	2,181	0.68	0.040
	YEAH	393	19.53	3,763	1,073	0.030
<b>Force</b>	NO	30	19.5	1,137	-0.516	0,000
	YEAH	393	19.86	3,831	-1,278	0,000
<b>General Self physical concept</b>	NO	30	16.7	2,136	-1,625	0,000
	YEAH	393	17.63	3,064	-2,207	0,000
<b>General self-concept</b>	NO	30	16.8	4,012	0.346	0,000
	YEAH	393	16.56	3,681	0.321	0.010

In table 4, the response data to the CAF are crossed with the body mass index, the question offered six options, Obesity III with 2 people (0.47%), Obesity II with 7 people (1.65 %), Obesity I with 24 people (5.67 %), Overweight with 121 people (28.60 %), Normal 177 people (41.8 %), Underweight 92 people (22.28 %). The comparison of the results averages agree with the habits of healthy life, where it is manifested that the study is important by presenting a high bilateral significance, in all the CAF scales, which indicate the importance of relating the self-concept with the body mass index for this study, supporting the results with the research of Méndez- Urresta *et al.* (2023), the results of their research point to the need to promote healthy habits with Taekwondo to contribute to the general well-being of adolescents (Table 4).



**Table 4. - Physical self-concept and body mass index**

CAF scales	BMI	No.	Half	$\sigma$	F	Next.
<b>Ability</b>	Obesity III	2	16.5	0.707	3,006	0.011
	Obesity II	7	18.71	2,928		
	Obesity I	24	16.58	2,717		
	Overweight	121	17.81	2,905		
	Normal	177	16.89	3,566		
	Under weight	92	18.23	3.19		
	Total	423	17.45	3,286		
<b>Condition</b>	Obesity III	2	21	0	6,597	0,000
	Obesity II	7	18.43	2,507		
	Obesity I	24	18.83	1,949		
	Overweight	121	18.7	2,897		
	Normal	177	17.98	3,777		
	Under weight	92	20.32	2,701		
	Total	423	18.77	3,319		
<b>Attractive</b>	Obesity III	2	22	0	9,151	0,000
	Obesity II	7	23.14	1,952		
	Obesity I	24	18.96	2,528		
	Overweight	121	19.5	2,781		
	Normal	177	18.59	4,243		
	Under weight	92	21.33	3,085		
	Total	423	19.56	3,674		
<b>Strength</b>	Obesity III	2	18.5	0.707	4,823	0,000
	Obesity II	7	22.71	0.488		
	Obesity I	24	19.92	1,666		
	Overweight	121	19.94	3,147		
	Normal	177	19.02	4,167		
	Under weight	92	21.05	3,581		
	Total	423	19.84	3,705		
<b>General Self physical concept</b>	Obesity III	2	18	0	4,051	0.001



	Obesity II	7	19.71	2,928		
	Obesity I	24	17.13	3,083		
	Overweight	121	18.21	2.63		
	Normal	177	16.9	3.44		
	Under weight	92	17.92	2,288		
	Total	423	17.56	3,015		
<b>General self-concept</b>	Obesity III	2	14	0	2,572	0.026
	Obesity II	7	20.57	4,392		
	Obesity I	24	17.58	2,685		
	Overweight	121	16.74	3,098		
	Normal	177	16.41	4,046		
	Under weight	92	16.16	3,769		
	Total	423	16.57	3,701		

## CONCLUSIONS

The results indicate that there are significant differences between men and women in their physical self-concept, which does not occur in the ability scale, the variable of healthy lifestyle habits, the practice of taekwondo, and BMI, show a high impact on perception of the participants physical self-concept, understanding that this study indicates that during the Covid-19 pandemic, the practice of Taekwondo takes on a deeper meaning.

This martial arts discipline allows its practitioners to raise their physical self-concept and improve their quality of life, by helping them face the situation of confinement, uncertainty and isolation. Training via streaming is an alternative for practicing exercises with the same energy level and the same number of sessions.

This research showed that the practice of taekwondo, during the COVID 19 pandemic, has a positive influence on a healthy physical self-concept and can be key to the socio-emotional



development of the subject, however, the pandemic complicated interaction and freedom of movement, that are part of an effective practice of martial arts such as Taekwondo.

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***Conflict of interests:***

The authors declare not to have any interest conflicts.

***Authors' contribution:***

The authors have participated in the writing of the work and analysis of the documents



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