

# Covid-19 and the impact on quality of life

Tatiana Aldas Palacios<sup>1</sup>, Lisbeth Josefina Reales Chacon<sup>2</sup>, Andrea Villarroel Quispe Elizabeth<sup>3</sup>, Gabriela Estefanía Robalino Morales<sup>4</sup>, Jorge Humberto Cárdenas Medina<sup>5</sup>

<sup>1</sup>Student of physiotherapy. Universidad Técnica de Ambato, ORCID: [0000-0002-3192-7277](https://orcid.org/0000-0002-3192-7277)

<sup>2</sup>Physiotherapy Professor. Technical University of Ambato, ORCID: <https://orcid.org/0000-0002-4242-3429>

<sup>3</sup>Physiotherapy Professor. Technical University of Ambato, <https://orcid.org/0000-0002-4310-1341>

<sup>4</sup>Physiotherapy Professor. Technical University of Ambato, ORCID: <https://orcid.org/0000-0002-9301-3411>

<sup>5</sup>Physiotherapy Professor. Technical University of Ambato, ORCID: <https://orcid.org/0000-0002-9381-0330>

## Abstract

**Introduction:** Covid-19 is a new respiratory disease that is the cause of an acute infection characterized by a progressive epidemiological picture. On the other hand, it will depend on the stage of the disease in which the patient is and the presence of physiological sequelae or acquired comorbidities, being these factors responsible for altering the quality of life and its relationship in the health field, affecting not only the physiological level but also other alterations such as the physical and mental state and the subjective impression of the state of the disease in the patient. **Objective:** To determine the quality of life of post Covid-19 patients. **Materials and methods:** A descriptive, cross-sectional study was carried out with a sample of 24 patients who signed the informed consent prior to the application of the evaluation. A section with sociodemographic variables was included and the Saint George questionnaire was applied for quality of life. Finally, the data analysis was compiled in Excel and SPSS software. **Results:** It was found that 83.3% of the post-covid-19 patients had a "good" quality of life health; the most impaired dimension was "Impact," with a mean of  $24.3 \pm 9.90$ , standing out from the other categories. Similarly, it was shown that 21% of the population was diagnosed with diseases after acquiring the virus, but they fall within a range of "good" quality of life without limitations in the dimensions of the questionnaire. **Conclusion:** Quality of life can become an important factor in the study of health. However, the percentage of the study population does not fall within a poor quality of life. However, it is essential to mention the correlation between Covid-19 and the sociodemographic variables associated with a negative effect on the quality of life according to the Saint George questionnaire evaluation and the degree of the disease in the patient.

**Keywords:** Saint George questionnaire, quality of life, SARS Cov-2 (Covid-19).

## Resumen

**Introducción:** El covid-19 es una nueva enfermedad respiratoria que es causante de una infección aguda caracterizada por un cuadro epidemiológico progresivo. Por otra parte, dependerá del estadio de la enfermedad en la que se encuentra el paciente y la presencia de secuelas fisiológicas o comorbilidades adquiridas, siendo estos factores los responsables de alterar la calidad de vida y su relación en el ámbito salud afectando no solo a nivel fisiológico si no que esta estará ligada a otras alteraciones como el estado físico, mental y la impresión subjetiva del estado de la enfermedad en el paciente. **Objetivo:** Determinar la calidad de vida de los pacientes post Covid-19. **Materiales y métodos:** Se realizó un estudio descriptivo, transversal, con una muestra de 24 pacientes los cuales firmaron el consentimiento informado previo a la aplicación de la evaluación. En ella se adjuntó una sección con variables sociodemográficas y para la calidad de vida se aplicó el cuestionario Saint George. Al finalizar, el análisis de datos se recopiló en la base de datos de Excel y software SPSS. **Resultados** Se encontró que los pacientes post covid-19 presenta una calidad de vida en relación a la salud "buena" en un-83,3%, la dimensión más perjudicada fue el "Impacto" con una media de  $24,3 \pm 9,90$  sobresaliendo de las otras categorías. De igual forma, se demostró que dentro de la población el 21% se diagnostico con enfermedades posterior de haber adquirido el virus, pero se adentran dentro de un rango de "buena" calidad de vida sin limitaciones en las dimensiones del cuestionario. **Conclusión:** La calidad de vida puede llegar a ser un factor importante de estudio en la salud, sin embargo, el porcentaje de la población de estudio no se enmarca dentro de una calidad de vida mala. Sin embargo, es imprescindible mencionar la correlación del Covid-19 y las variables sociodemográficas asociadas a un efecto negativo en la calidad vida según la evaluación del cuestionario Saint George y el grado de la enfermedad en el paciente.

**Palabraclave:** Cuestionario Saint George, calidad de vida, SARS cOV-2 (Covid 19).

## 1. Introduction

SARS-Cov-2 is a new type of disease of the coronavirus family that causes an acute infection associated with a picture of respiratory symptoms that humans can acquire and certain types of animals. It was the first outbreak in the

city of Wuhan, China, in 2019, the transmission is estimated to be human-to-human by diffuse particles and contaminated surfaces. The pandemic is developing very rapidly and with it, the number of deaths is increasing, globally reaching 5.52 million deaths and 320 million confirmed cases with case fatality rates of 1%-3% of the population.

The epidemiological picture of the infection is associated with decreased respiratory capacity, fever, cough, mucous secretion, hypoxemia, myalgia and dyspnea, which are the most frequent and persistent factors after acquiring the disease. However, 80% of patients develop mild symptoms and do not require hospital care, 15% present a severe state of the disease and in many cases, oxygen is administered and only 5% require a critical phase and intensive care, affecting mainly the elderly population and those patients with chronic comorbidities, all these data and clinical pictures act differently in asymptomatic patients who are only carriers of the virus.

Currently, surveillance measures and social isolation have been used to control the number of infections. Thus, from social confinement arises the need to study the consequences of the virus and the changes in respiratory alterations on the quality of life being responsible for the deterioration of physical and mental health and the impact of the disease on the patient.

Assessing the quality of life in post-covid-19 individuals has been defined as the opportunity to understand the real impact of the disease on the perception of health. On the other hand, it is worth mentioning that physiological factor greatly impacts the affectation of quality of life, but other sociodemographic factors are also detrimental to health.

Objective: To determine the quality of life of post Covid-19 patients.

## 2. Materials and Methods

### Design

A cross-sectional, descriptive, qualitative cohort study was conducted, characteristics that shape the quality of life in patients diagnosed with Covid-19 at an estimated time, with a defined sample.

On the other hand, this study is descriptive and deductive, focused on interpreting the study phenomenon and establishing conclusions based on the results obtained by the application instrument on quality of life. Furthermore, it will be of bibliographic-documentary modality, so the search for information will be obtained from the online scientific database. citation

### Population and sample

The population consisted of 24 participants attending the Rehab-vital Physical Rehabilitation Center who were active at the time of the study and the users who presented proof of having acquired the COVID-19 virus were selected. Those patients who agreed to participate were given an introductory part of the subject and the objectives of the research, after which they were given informed consent and proceeded to apply the Saint George questionnaire. Each patient will obtain a physical Word format where each questionnaire

question is detailed, which will be evaluated during the visit to the rehabilitation center. The estimated time for the application is 15-20 min.

### Data collection instruments or techniques

A structured section of the individual application was used, which included sociodemographic variables that allow the identification of general data and aspects related to the disease of the participants; likewise, the Saint George quality of life scale designed by Jones et al. was included; it is a schematic instrument to assess the quality of life concerning the impact on health, daily life and activity in the patient with respiratory pathology. On the other hand, it presents values that demonstrate consistency in the instrument; within the items, it presents reliability values ( $> 0.7$ ) for each subscale and ( $0.9$ ) for the entire questionnaire and also includes alpha coefficient values greater than  $0.8$  for greater efficacy. (29)

The St George scale consists of three dimensions: symptoms (presented due to pulmonary pathology), activities (circumstances that cause or are limited by dyspnea) and impact (social and psychological functioning that may alter the patient's lifestyle ), for a total of 50 questions, this instrument allows assessing quality of life from 0-100 where higher scores indicate a greater alteration of it.

The inclusion criteria were patients with the virus and in the post-Covid-19 stage, with an age range between 18 and 80 years of both sexes and freely accepted to participate in the study; in addition, these patients have presented a positive test of having acquired the disease.

### Ethical considerations

All patients signed the Informed Consent Form in compliance with professional standards. The data obtained were for the exclusive use of the researcher and academics, thus complying with the principle of confidentiality.

## 3. Results

### Sociodemographic characteristics

Of a total of 24 patients in the post-covid-19 stage from the Rehab-vital Physical Rehabilitation Center with an age range between 18 and 80 years and an average age of 52.4 years; 25.0% claimed to be retired, 16.7% work in the health area and university students respectively, 37.5% perform another type of occupational activity.

8.4% had a history of personal pathological diseases such as hypertension and hydrocephalus; 21% were diagnosed with pathologies after having acquired Covid-19: Gastritis, Guillain barre, Hepatitis-D, Herpes zoster and Hypertension/prediabetes, equivalent to 4.2% each; likewise, 19 patients reported not having acquired or presented any disease (Table 1).

**Table 1: Associations between sociodemographic variables and quality of life.**

Quality of life		Good		Regular		Mala	
		FREQ	%	FREQ	%	FREQ	%
Age	18- 30	7		2		0	
	31-40	3		1		0	
	41-50	4		0		0	
	51-60	4		1		0	
	61-70	0		0		0	
	71-80	2		0		0	
Sex	Men	9		1		0	
	Women	11		3		0	
Occupation	Health area	2		1		0	
	Housewife	1		1		0	
	University students	4		0		0	
	Retirees	6		1		0	
	Others	7		1		0	
APP	Hydrocephalus	1		0		0	
	Hypertension	1		0		0	
Post Covid-19 disease	Gastritis	1		0		0	
	Guillain Barre	1		0		0	
	Hepatitis -D	1		0		0	
	Herpes Zoster	1		0		0	
	Hypertension	1		1		0	
	None	19		0		0	

#### APP: Personal pathological history.

83.33% of the patients surveyed showed a "Good" quality of life, with women occupying the highest percentage, and 16.6% showed a "Fair" quality of life; no values were found in the "Poo" dimension for health in the St. George questionnaire. According to the dimensions within the St. George questionnaire, higher values were obtained in the "Impact" category, with  $24.33 \pm 9.90$  concerning the other categories to be evaluated.

#### Associations between sociodemographic variables and quality of life

Concerning these determinants, 35% of those in the age range of 18-30 years had a "Good" quality of life, but within this age range, there were also values for a "Fair" quality of life for the other age ranges. Forty percent of the population in the average age range presented fewer quality of life problems.

The female sex, with 45.8%, has a better quality of life than the male sex in the "Good" quality of life category. The female sex has a "Regula" quality of life (12.5%) and only 4.16% of the male sex in this category.

According to the determinant occupation and its relationship to quality of life, retired people have a good quality of life compared to other occupations. Of the total population, 16.64% have a "Regular" quality of life according to their occupation.

8.3% of the population had a history of personal pathological diseases, falling into the "good" quality of life category. On the other hand, 16.66% of the population were diagnosed with sequelae of comorbidities after acquiring the virus, as mentioned above, despite this they presented minor limitations in the quality of life and only

4.16% are under the guideline of a "regular" quality of life corresponding to the pathology of hypertension/diabetes.

#### 4. Discussion

In a study developed by Guzmán E, they presented similar concordances with the research since the age group with the highest prevalence was between 18-28 years of age, with a mean age of  $23.78 \pm 24.03$ . (1) These data are similar to those found in this study, where the patients surveyed comprised young adults with 37.5% with a predominance of the age range between 18 and 30.

For sex, it was found that the highest prevalence is in women with 54.2% and 45.8% in men, coinciding with studies such as the one carried out by Padilla A et al., which shows that 59% belong to the female sex and only 41% to the male sex (35) that is to say that there is a higher prevalence of Covid-19 in women.

Regarding personal pathological antecedents, 8.4% of the population presented diseases such as hypertension and hydrocephalus. Zeina Akiki's research on "Validation of the St. George's respiratory questionnaire and risk factors affecting quality of life" states that the most common diseases were hypercholesterolemia, diabetes, hypertension and hypertension (23) establishes that the most common diseases were: hypercholesterolemia, diabetes, hypertension and heart/renal diseases are the personal comorbidities responsible for negatively influencing the quality of life concerning health.

According to data from an article in the journal Science (36), people diagnosed with the Covid-19 virus tend to have a higher incidence of serious comorbidities. In this article mentioned heart

failure, blood clots, blood vessel problems, pneumonia, stroke, seizures, and Guillain-Barré syndrome; it can also increase the risk of developing Parkinson's disease and Alzheimer's and musculoskeletal disorders. What is reflected in this study is that women had a greater tendency to acquire such diseases as gastritis, Guillain Barre, hepatitis -D, and herpes Zoster; on the other hand, 4.16% corresponds to the male sex with Hypertension/Diabetes.

Regarding the general quality of life of the population, it is framed as an average of 21.53. In contrast, another study, which mentions the quality of life in patients with COPD, shows an average of 42.5. Even so, there is great controversy due to the type of respiratory pathology that the patient presents to determine the real value of the quality of life status.

As for the dimensions of the St George questionnaire, according to Rivadeneira M., in his research on Ecuadorians with chronic obstructive pulmonary disease (COPD), activity stands out as the most affected dimension with a mean of 59.43, followed by symptoms (48.34) and impact (31) respectively. (37) In this study, the impact was found to be the dimension most affected, with a mean of 24.33; followed by symptoms with 22.06 and activity with 16.25. Consequently, we can show that the Impact dimension is affected more than the other dimensions.

### Conflict of Interest

The authors declare that there are no conflicts of interest.

### References

1. Guzmán-Muñoz E C-CYL-CCVJC--RM. Impacto de un contexto de pandemia sobre la calidad de vida de adultos jóvenes. *Revista Cubana de Medicina Militar*. 2021 Oct 17;50(2).
2. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A Novel Coronavirus from Patients with Pneumonia in China, 2019. *New England Journal of Medicine*. 2020 Feb 20;382(8).
3. Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *Journal of Travel Medicine*. 2020 Mar 13;27(2).
4. Organización Panamericana de la Salud / Organización Mundial de la Salud. Actualización epidemiológica: Enfermedad por Coronavirus (COVID-19) [Internet]. Washington, D.C; 2021. Available from: <https://bit.ly/3kDwe33>
5. Ministerio de Salud Pública. Actualización de casos de coronavirus en Ecuador [Internet]. 2021 [cited 2021 Nov 8]. Available from: <https://www.salud.gob.ec/actualizacion-de-casos-de-coronavirus-en-ecuador/>
6. Organización Panamericana de la Salud /

Organización Mundial de la Salud. Actualización COVID-19. 2021. p. 1–53.

7. Servicio Nacional de Gestión de Riesgo y Emergencia. Informe de Situaciones No. 79-Covid-19 Ecuador [Internet]. Ecuador; 2021. p. 1–10. Available from: <https://www.gestionderiesgos.gob.ec/resoluciones-coe/>

8. Taboada M, Rodríguez N, Díaz-Vieito M, Domínguez MJ, Casal A, Riveiro V, et al. Calidad de vida y síntomas persistentes tras hospitalización por COVID-19. Estudio observacional prospectivo comparando pacientes con o sin ingreso en UCI. *Revista Española de Anestesiología y Reanimación*. 2021 Jun;

9. Carod Artal FJ. Síndrome post-COVID-19: epidemiología, criterios diagnósticos y mecanismos patogénicos implicados. *Revista de Neurología*. 2021;72(11):384.

10. Bakry, M. M. . (2022). Distribution Of Phenacoccus Solenopsis Infesting Okra Plants: Evidence for Improving a Pest Scouting Method. *Journal Of Advanced Zoology*, 43(1), 56–72. Retrieved from <http://jazindia.com/index.php/jaz/article/view/114>

11. Qu G, Zhen Q, Wang W, Fan S, Wu Q, Zhang C, et al. Health-related quality of life of COVID-19 patients after discharge: A multicenter follow-up study. *Journal of Clinical Nursing*. 2021 Jun 17;30(11–12).

12. Anis S Mokhtar\*, Nurhayo Asib, A. R. R. . R. M. A. . (2022). Development of Saponin based Nano emulsion formulations from Phaleria macrocarpa to Control Aphis gossypii. *Journal Of Advanced Zoology*, 43(1), 43–55. Retrieved from <http://jazindia.com/index.php/jaz/article/view/113n>