

Empowerment Analysis in Patients with Acute Coronary Syndrome and Heart Failure in Hospitalization Units: A Cross-Sectional Study

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Abstract

Aim: To evaluate the empowerment of patients diagnosed with Acute Coronary Syndrome (ACS) and Heart Failure (HF) admitted to a Level III hospital.

Material and Methods: An observational cross-sectional study conducted over a sufficient period to collect the sample. The study population includes patients admitted to a Level III hospital in cardiology units, diagnosed with Heart Failure or Acute Coronary Syndrome. Inclusion criteria consist of diagnosis of Heart Failure or Acute Coronary Syndrome and consent to participate in the study. The main variable used is the CEPEC questionnaire (Chronic Patient Empowerment Questionnaire), in its shortened version with cross-cultural validation, developed by Dr. Garcimartín.

Results: The Chronic Patient Empowerment Scale (CEPEC) was used. The data indicated a total of 81 men and 39 women, with 37 patients having HF and 84 with ACS. The age range was 50 to 55 years, with more patients below 65 years. The CEPEC scale had a Cronbach's alpha of 0.764. There was a significant age difference ($p < 0.05$) between the two units under study. For each diagnosis, scale items were compared, revealing statistical differences in items P-5, P-15, and P-24.

Conclusions: The scale has proven to be valid and reliable, providing indicators of poor or inadequate patient progress. These circumstances enable the development of precise actions to enhance the situation and quality of life for hospitalized patients.

Keywords: empowerment; chronic diseases; heart failure; acute coronary syndrome; nursing; healthcare context; share experiences; managing disease; emotional issues; social spheres

Introduction

Höfer et al contributed to the assessment of the quality of life in patients with cardiac diseases, based on concepts relevant to their study and ours. The measurement of health includes not only an indication of changes in the frequency and severity of the disease but also in the patients' perception of health before and after treatments. They assert that the patient's perspective is as legitimate and valid as that of the clinician in monitoring outcomes. [1]

Discussing chronic diseases is relatively clear for healthcare professionals, but the inclusion of conditions considered chronic that influence morbidity and mortality can be more delicate. In order to provide more appropriate management and healthcare for each individual, various types of studies have been conducted. In a comprehensive literature review, it is evident that terms with significant variability are used, depending on the location, type, person, and disease.[2]

Chronic conditions could be defined as having an expected duration of at least six months, understanding that the definition of time alone is not the sole criterion for classifying a health condition as chronic.[2] Other factors include an unfavorable prognosis, consequences or sequelae impacting the quality of life, and a recurrent or worsening pattern. [2]

Studies have also been published on lifestyle-related diseases, including chronic conditions that are accompanied by changes in the patient's daily lifestyle and habits. Within lifestyle factors, the primary focus is on physical inactivity, poor nutrition, insufficient sleep, high levels of stress, substance use, and social isolation. [3]

Empowerment has been studied in numerous patients with different diseases and characteristics. The research suggests that empowerment improves the quality of life, particularly in patients with chronic heart failure, enhancing autonomy, self-esteem, satisfaction levels, and reducing healthcare costs. Due to these findings, it is recommended to use validated instruments for measuring patient empowerment. [4]

Indeed, understanding patient empowerment is considered a valuable aid for patients in managing their health effectively and achieving better outcomes. However, assessing empowerment requires specific empowerment measures, which, in the case of chronic diseases, have not been fully developed. One approach to addressing this gap is to establish systems for measuring empowerment.[5] Small et al. have developed an empowerment questionnaire that covers all the necessary aspects for patients to actively participate in their own health situations. [5]

Previously, Varekamp et al. in 2009 noted that in healthcare, empowering patients with chronic diseases aims to increase their knowledge and skills. This empowerment enables patients to define objectives and take on responsibilities for their treatment. [6] Patient empowerment is a key concept embedded in various models of

chronic care. Providing care to a chronic patient necessitates empowerment, with the patient taking responsibility for their own healthcare. This empowerment is crucial for improving health status, preventing complications, and enhancing overall quality of life.[7]

The concept of empowerment has extended to the community level. Increasing community empowerment aims to interconnect health promotion, social change, building social capital, and the distribution of power. These factors are reflected in the overall quality of health in the population.[8]

In 2019, a transcultural adaptation of Small et al.'s empowerment scale was conducted, following a clear and precise methodological process, conceptually very appropriate. The questionnaire derived from the "Empowerment of the Patient in Chronic Conditions" is semantically and conceptually equivalent to the original tool, with the acceptance of the original version's author.[9]

This brief overview of the elements that constitute the situation of patients admitted with Cardiovascular Diseases (CVD), along with the theoretical and clinical aspects of a measure of the patient's situation encompassing all circumstances influencing their quality of life, has led us to formulate the following objective: To assess the empowerment of patients diagnosed with Acute Coronary Syndrome and Heart Failure, admitted to a Level III hospital.

Materials And Methods

An observational cross-sectional study conducted over a sufficient period to collect the sample.

Study population consists of patients admitted to a Level III hospital in the cardiology units, diagnosed with Heart Failure or Acute Coronary Syndrome.

Whether a patient is admitted to one unit or the other depends on bed availability. Therefore, the medical professional deciding to admit a patient will choose one unit over the other based on the availability of free beds.

The total number of patients, based on the reference from the previous year at the same time, calculated for a 95% confidence interval and a precision of ±2, is a total of 120 patients. Given the unit characteristics, the patient ratio is 3:1, three in the second-floor unit to one in the seventh-floor unit.

Inclusion criteria for patients are a diagnosis of Heart Failure or Acute Coronary Syndrome and having given consent to participate in the study.

The variables used, primarily the CEPEC questionnaire (Chronic Patient Empowerment Questionnaire), in its shortened version with cross-cultural validation, by Dr. Garcimartín [9], It can be seen in **Table I**.

1	I continue to engage in interesting activities in my life despite my health problems.	1	2	3	4	5
2	I am capable of taking charge of my illness.	1	2	3	4	5
3	I am optimistic about my illness.	1	2	3	4	5
4	I have helped people with similar illnesses as mine to find different ways to cope with the situation.	1	2	3	4	5
5	My health problems prevent me from enjoying life.	1	2	3	4	5
6	I can decrease the impact of symptoms on my daily life.	1	2	3	4	5
7	I have shared my experience of taking charge of my illness with other people with health problems.	1	2	3	4	5
8	I know where to go to determine more about my illness.	1	2	3	4	5
9	I have plans to do enjoyable things despite my illness.	1	2	3	4	5

10	I have a sense of control over my illness.	1	2	3	4	5
11	Despite my health problems, I feel that I have a good quality of life.	1	2	3	4	5
12	I have information to handle difficulties related to my illness.	1	2	3	4	5
13	I have shared with others what I do to stay well.	1	2	3	4	5
14	I have the skills that help me feel in control of my illness.	1	2	3	4	5
15	I feel useful in my daily life despite my illness.	1	2	3	4	5
16	I can talk to my doctor if I change my mind about my treatment.	1	2	3	4	5
17	I can live a normal life despite my illness.	1	2	3	4	5
18	I feel confident in choosing with my doctor among different options related to my illness.	1	2	3	4	5
19	I feel actively engaged in life despite my health problems.	1	2	3	4	5
20	I have shared my knowledge about my illness with people who have similar conditions.	1	2	3	4	5
21	I participate in decisions that affect my health care.	1	2	3	4	5
22	I know how to handle difficulties related to my illness.	1	2	3	4	5
23	I try to make the most of my life despite my illness.	1	2	3	4	5
24	I understand my illness.	1	2	3	4	5
25	I have a positive outlook on my illness.	1	2	3	4	5
26	There are people with a similar illness who ask me for advice.	1	2	3	4	5
27	I have all the knowledge I need to take charge of my illness.	1	2	3	4	5
28	I know how to manage my health problems.	1	2	3	4	5
29	I have sufficient knowledge about my illness.	1	2	3	4	5
30	I feel that my life has purpose and meaning despite my health problems.	1	2	3	4	5

1 - Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 - Strongly Agree

Table I. Chronic Illness Empowerment Scale (CEPEC); N. Small (Garcimartín Cerezo 2018a) (Garcimartin et al. 2019) developed a scale to measure empowerment in chronic patients; In Spain, Garcimartín, P. validated the cross-cultural adaptation of Small's scale (Garcimartín et al.2019).

According to Garcimartín's data, a score on the questionnaire below 50 points indicates very low patient empowerment, while a score equal to or higher than 130 identifies good patient empowerment. The maximum score on the questionnaire is 146. Each scale item has five response options: 0-Strongly Disagree, 1-Disagree, 2-Neutral, 3-Agree, 4-Strongly Agree.

In the original scale developed by Small [5], In the original scale developed by Small, it had 47 items and three factors. In the reduced and transculturally validated scale, it has two factors and 30 questions. The dimensions are defined as follows: Factor 1: "Positive Attitude and Sense of Control" refers to changes experienced by patients in terms of self-perceptions after diagnosis and how patients reduce the impact of the disease on their lives, resulting in increased self-control. Factor 2: "Knowledge and Confidence in Decision Making" is related to patients reporting having enough knowledge and understanding to manage their condition and participate adequately in decision-making with healthcare professionals. Factor 3: "Enabling Others" refers to a set of elements related to involvement and integration with other individuals.

In the study, secondary variables related to the patient and hospitalization were collected. These variables included the patient's name, gender, age, hospital identification number (medical record number), date of admission to the hospital unit, discharge date, length of stay in the hospital, and the medical diagnosis at admission. The latter variable is related to the inclusion criteria in the study and the definition of the chronic disease condition.[5]

The age variable has been grouped into seven ranges, each covering a five-year period, with the first range being 45 to 50 years old and the last range being 70 to 75 years old.[5]

The data, measuring the variables for each patient, from both the second north hospitalization unit and the seventh north unit, were collected by the same person to ensure consistency in data collection and criteria.

Statistical Analysis:

The data were analyzed by presenting values and frequencies for all variables. Means and standard deviations were calculated for parameters with a normal distribution, while the median and interquartile range were calculated for those without a normal distribution. The chi-square test was used to assess associations in categorical variables, and paired t-tests were used for continuous variables. A multivariate factor analysis was conducted on the CEPEC questionnaire. The data were analyzed using IBM SPSS Statistics (Version 29). Missing data lead to the exclusion of the patient from the study, and according to the sample size calculation, a new patient meeting the inclusion criteria will be included.

Ethical Considerations

The Red-Cap® system is used to collect data, which includes health, biometric, and personal data such as age and gender. The data will be pseudonymized to comply with legislation. Each patient will receive an identification code. Only the Principal Investigator (PI) and authorized collaborators will have access to the data. Data ownership belongs to the PI. The data will be deposited in the institutional repository of the Health Department of the Community of Madrid. Compliance with ethical and legal requirements is ensured, including approval from the Clinical Research Ethics Committee of the Hospital Clínico San Carlos and compliance with the GDPR and Organic Law 3/2018. Participants have rights to access, rectify, oppose, and delete data, as well as data portability and processing limitation. The study protocol has been reviewed and has received a favorable report from the CEIm of the Hospital.

Results

The study was conducted from October 1 to December 31, 2022, based on the defined inclusion criteria and a 3:1 ratio in the hospitalization units of the second north and seventh north, related to the number of beds in the two hospitalization units and therefore the number of patients in each. The patient admission tree to the hospitalization units, the application of the criteria, and thus the evolution of the number in each hospitalization unit can be seen in **Figure 1**.

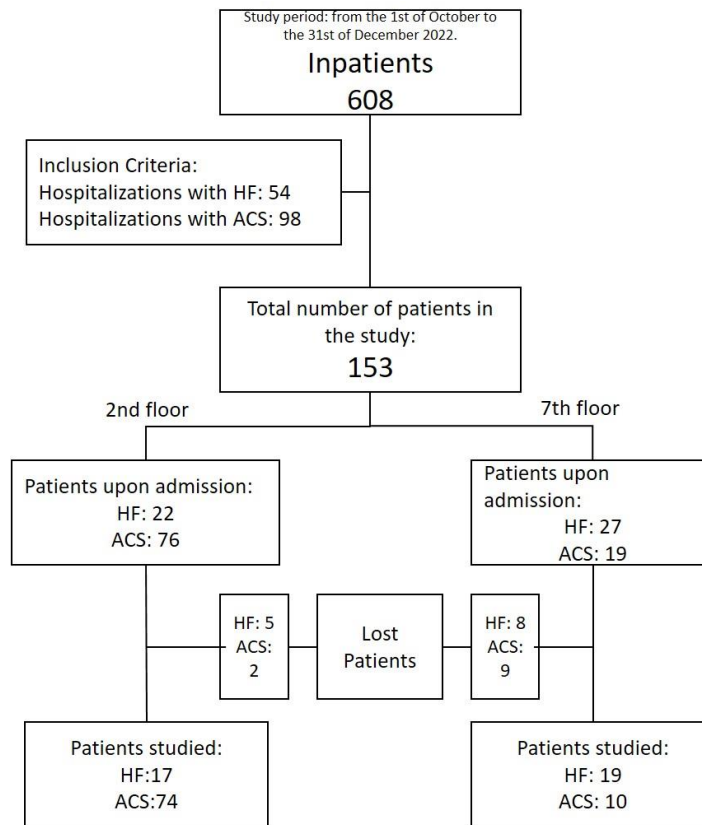


Figure I: Flowchart of patients admitted to hospital units, application of criteria, and losses among patients definitively included in the study

The data for secondary variables can be seen collectively in Table II.

Variable	Values	Quantity	Frecuency (%)
Hospital Unit	Second floor	90	75
	Seventh floor	30	25
Gender	Male	81	67,5
	Female	39	32,5
Diagnosis	Heart Failure	37	30,6
	Coronary syndrome	84	69,4
Age	45-50	9	7,6
	50-55	34	28,8
	55-60	15	12,7
	60-65	18	15,3
	65-70	22	18,6
	70-75	12	10,2
	75-80	8	6,8

Table II. - Characteristics of Sociodemographic Variables

A total of 120 patients were recruited during the last quarter of 2021, with a distribution of 90 cases (74.4%) admitted to the second north unit and 30 admitted to the seventh north unit. Of the total, 81 were male (66.9%) and 39 were female (32.2%). Regarding the admission diagnoses included in the study, 37 patients had Heart Failure (30.6%), and 84 patients (69.4%) suffered from Acute Coronary Syndrome.

The age range with the most admitted patients is 50 to 55 years, accounting for 28.9% of the total. The percentage of patients admitted

aged 65 years or younger is 64.6%, and patients aged over 65 years is 35.7%.

A factor analysis of the CEPEC scale is conducted to confirm or deny its validity and reliability. A principal component analysis is performed, resulting in a Cronbach's alpha of 0.794. The removal of each item does not substantially alter the Cronbach's alpha value, with the lowest being 0.764. The intraclass correlation of average values is 0.779 (CI: 95%, 0.716-0.833). The most significant difference obtained is the definition of

10 components, factors, whereas in the original table, there were 2. These 10 components explain 66.942% of the variance.

The mean score for the overall assessment of the scale is 77.02 empowerment points, with a standard deviation of 10.581.

In the grouping of questionnaire factors, the elements are distributed in Factor 1 with elements 2, 6, 8, 10, 12, 14, 16, 18, 21, 22, 24, 27, 28, and

29; in Factor 2 with elements 1, 3, 5, 9, 11, 15, 17, 19, 23, 25, 30; and in Factor 3 with elements 4, 7, 13, 20, 26. (see Table I for element identification)

The distribution of each element in the scale, as seen in Table I, can be observed in **Table III**.

Nº ITEM	ITEM	% higher values	% lowest values
P-1	I continue to engage in interesting activities in my life despite my health problems.	70	23,1
P-2	I am capable of taking charge of my illness.	6,6	92,6
P-3	I am optimistic about my illness.	74,3	14,8
P-4	I have helped people with similar illnesses as mine to find different ways to cope with the situation.	5	95
P-5	My health problems prevent me from enjoying life.	38,8	57
P-6	I can decrease the impact of symptoms on my daily life.	11,5	85,9
P-7	I have shared my experience of taking charge of my illness with other people with health problems.	6,7	92,5
P-8	I know where to go to determine more about my illness.	14,9	84,7
P-9	I have plans to do enjoyable things despite my illness.	82,6	13,3
P-10	I have a sense of control over my illness.	2,5	95
P-11	Despite my health problems, I feel that I have a good quality of life.	69,4	23,3
P-12	I have information to handle difficulties related to my illness.	4,9	94,2
P-13	I have shared with others what I do to stay well.	9,9	89,2
P-14	I have the skills that help me feel in control of my illness.	18,2	75,2
P-15	I feel useful in my daily life despite my illness.	82,6	13,3
P-16	I can talk to my doctor if I change my mind about my treatment.	66,1	20,7
P-17	I can live a normal life despite my illness.	70,2	23,2
P-18	I feel confident in choosing with my doctor among different options related to my illness.	57,8	31,4
P-19	I feel actively engaged in life despite my health problems.	70,2	23,9
P-20	I have shared my knowledge about my illness with people who have similar conditions.	4,1	94,2
P-21	I participate in decisions that affect my health care.	66,1	28,9
P-22	I know how to handle difficulties related to my illness.	10,8	85,9
P-23	I try to make the most of my life despite my illness.	89,3	8,3
P-24	I understand my illness.	8,3	91,7
P-25	I have a positive outlook on my illness.	75,1	17,3
P-26	There are people with a similar illness who ask me for advice.	2,5	95,8
P-27	I have all the knowledge I need to take charge of my illness.	5,8	93,4
P-28	I know how to manage my health problems.	5,8	91,7
P-29	I have sufficient knowledge about my illness.	5	95
P-30	I feel that my life has purpose and meaning despite my health problems.	93,4	5,8

Table III: distribution characteristics of the CEPEC empowerment questionnaire. The distribution of each item on the scale (values between 0 and 4, in the CRD) was grouped into the top two (3 and 4) and the bottom two (0 and 1) categories

The elements of the scale that have a low score (values between 0 and 1) and higher values (3 and 4) are grouped. In Table III, the percentage of responses after grouping into high and low ratings can be observed. The shaded elements in the low-value percentage column have a percentage equal to or greater than 70% of the patients, indicating that these elements are deficient in the studied patients.

As observed, most elements of Factor 1 and all elements of Factor 3 have a low or very low rating in the majority of patients.

The relationship between variables was analyzed using the Chi-Square test. Differences in age between the two admission units in the study were analyzed, resulting in a p-value <0.05 (Chi-square 13.695, p <0.033). There is a uniform distribution of age ranges on the 7th floor, and a higher number of patients in the age range of 51 to 65 on the 2nd floor was identified.

Differences in the distribution of patient diagnoses at admission were analyzed, identifying a higher number of patients with Acute Coronary Syndrome than patients with Heart Failure. The statistical analysis using the Chi-Square test provides a p-value <0.05 (Chi-square 13.234, p <0.033). The relationship between patient admission diagnoses and age ranges indicates significantly fewer patients admitted with Heart Failure, evenly distributed across different age ranges, with a higher number of Acute Coronary Syndrome cases in the age range of 51 to 60 years.

The comparison of sex with the diagnosis did not show a statistically significant difference between the two variables (Chi-square 2.814, p <0.093). The Fisher's exact test was also applied, given that they are dichotomous variables, and no significant association was found (p <0.072).

Each unit was compared with the items of the CEPEC scale, and statistically significant differences were found with items P-2 (p <0.026), P-5 (p <0.048), P-8 (p <0.001), P-11 (p <0.013), P-15 (p <0.026), P-27 (p <0.023), and P-29 (p <0.006). Refer to Table I to identify the scale element.

The total score of the CEPEC scale was compared between patients admitted to the two comparison units, and no statistically significant difference was found.

Admission diagnoses were analyzed with each element of the scale, revealing statistically significant differences with item P-5 (p <0.025), P-15 (p <0.004), and P-24 (p <0.045).

Sex was also compared with each item of the scale, and a statistically significant difference was found with item P-2 (p <0.027), but no other differences were observed in the remaining items.

Age ranges were compared with the items of the scale, and a difference was found in item P-30 (p <0.027). Similarly, admission diagnoses, age ranges, and sex were compared, and no statistically significant differences were found.

The combination of admission diagnosis and age ranges was compared with the items of the scale, revealing a statistically significant difference between Acute Coronary Syndrome, age range, and item P-7 (p <0.025). Similarly, a statistically significant difference was found between Acute Coronary Syndrome, age ranges, and item P-9 (p <0.049).

Discussion

For many years, there has been a focus on studying the possibility of having a tool capable of identifying the situation and progression of patients with chronic diseases and their quality of life.

The author who conducted the transcultural adaptation of the scale used[7], she stated that managing chronic conditions requires an empowered patient who actively participates and takes responsibility for

their care with the goal of improving health outcomes, preventing complications, and enhancing their quality of life.

It is necessary to analyze the coincidence and development of knowledge about chronic diseases, as there has been a significant evolution and alignment. Articles have been published that highlight the lack of clarity in the concept of chronic diseases in the primary care setting[2] Haga clic aquí para escribir texto., leading to confusion in patient monitoring. However, some authors already incorporate clinical situations related to lifestyle, such as chronic diseases, which share common risk factors[3], like physical inactivity, poor diet, insufficient sleep, high levels of stress, substance use, and social isolation.

The aspects of chronic diseases can be related to the cost of care, as indicated by the study by Conthe[7], which shows a 70% increase in this cost, mainly due to patient rehospitalizations. We can deduce that patients in our study, with heart failure and acute coronary syndrome, who are chronic patients, have impaired quality of life and may be caught in a cycle of rehospitalizations.

All these aspects must be related to therapeutic adherence. Everyone agrees that adherence is a public health issue, and its lack has a prevalence of 50% in patients with chronic diseases [11].

Starting from scientific results, both healthcare professionals and policymakers agree that empowerment is a mechanism to assist patients with chronic diseases in managing their health and achieving better outcomes[5]. Many studies have been conducted to measure empowerment and identify altered situations in patients.

Several questionnaires are developed to measure patient empowerment, utilizing different approaches or lines of development. However, they all agree on the multifactorial nature of empowerment [12] as reflected in the factors (components) of each questionnaire.

In our study, we used the transculturally adapted questionnaire developed by Garcimartín[9]. The validity obtained was 0.794; however, the author's data was 0.9. When compared to HECQ[12] they obtained a value of 0.83, and the data from the MacNew¹ questionnaire is 0.92 in the English version and 0.88 in the Spanish version.

In our case, it may be due to the fact that the main objective of the study was not to analyze the validity and reliability of the questionnaire. We started with a sample size that was not excessively large and was not assessed based on the disease leading to admission, including both patients with Heart Failure and Acute Coronary Syndrome. However, in all cases, including ours, very consistent validity data were obtained, allowing for the effective use of the questionnaire.

The factorial analysis indicates that the grouping into three factors (components) is explained by a variance ranging between 63% for Factor¹, 68% for HECQ1[2], and 67% for the one we utilized. However, the factors cover distinct domains. The MacNew questionnaire follows the original approach, resulting in factors related to the physical, emotional, and social spheres. The HECQ questionnaire defines three factors: Decision-making involvement, Interaction involvement, and Degree of control. The one we used yields the same factors as Small's extended original scale[5], namely: changes experienced by patients after diagnosis, the impact of the disease on their life, and shared decision-making. The second factor relates to the impact of the disease on their life, while the third pertains to the ability to seek information outside the healthcare context, share experiences, and strategies for managing the disease with other patients. This presentation of factors suggests that the one we used essentially separates the factors influencing a patient with a chronic disease. However, it also maintains a degree of interrelation between them, as reflected in the defined factors.

Studies have been conducted, focusing on the unique characteristic of the population: healthcare professionals with chronic diseases [6]. In these

studies, seven themes have been identified as areas where actions should be taken to empower healthcare professionals for their well-being.

Studies have been conducted on patients, focusing on partial aspects to identify their influence on quality of life, adherence, or, as in our case, empowerment. It is clear that cardiac rehabilitation provides patients with a level of knowledge, self-esteem, and self-confidence not achieved by other methods. However, specific aspects have been studied, [13] such as the incorporation of a psychoeducational intervention alongside exercise. Patients subjected to this scheme showed significant improvements. Similarly, but with differences in interventions, studies have included individual education, both hospital-based and primary care-based. Excellent results were observed in patient satisfaction, reflected in high motivation and adherence, as well as increased knowledge and self-care capacity [14]. Cardiac rehabilitation affects physical, social, and emotional dimensions, and nursing plays a role by applying tools to modify the perception of quality of life [15].

It is important to highlight psychological studies, interventions, or psychological issues related to patients with cardiovascular disease. Psychological well-being and its relationship to participation in secondary prevention actions have been examined [16]. It was observed that patients with positive relationship alterations were less likely to engage in secondary prevention programs. The effects of cognitive-behavioral therapy on morbidity and mortality in cardiovascular patients were studied, revealing that these actions decrease the risk of disease recurrence [17]. Positive psychological effects have also been studied, indicating that optimism and positive affect improve engagement in physical activity and healthy eating [18]. The influence of using coaches with patients has been investigated, showing that they have a higher likelihood of achieving clinical goals and improving analytical results of hemoglobin A1c and LDL in coach-assisted groups. [19]

Psychological aspects derived from cardiovascular disease have also been studied. Cognitive impairment in patients with coronary syndrome has been examined, defining that these patients experience mild cognitive decline, which may worsen if associated with depression or anxiety [20]. Similarly, it has been confirmed that patients with coronary syndrome presenting to the emergency department may develop symptoms of post-traumatic stress. The presence of these symptoms may lead to a heightened perception of cardiac threat [21].

Similarly, engaging in exercise has proven to be highly effective in the progression of a patient with cardiovascular disease. A study on running and its association with mortality in cardiovascular patients concluded that running even just once a week is better than not running at all [22]. The impact of physical limitations has also been studied in a similar manner. Patients with acute coronary syndrome experiencing physical limitations influence their perception of quality of life, vitality, emotional role, and social adaptation [23].

The identification of questionnaire elements and their relation to factors has a direct connection to the actions to be taken to improve the patient's situation. Various types of interventions have been identified to enhance the patient's empowerment level, including educational, cognitive-behavioral, and combined interventions [4]. Nursing staff has already utilized educational interventions that partially impact the quality of life. In a heart failure nursing consultation, 78% of patients showed improvement in risk factors, except for hyperglycemia and overweight, where the impact was less pronounced [24].

The remaining analyses, including weight, gender, and age, do not reveal differences compared to the already known data.

Methodological Biases exist: The sample size is limited for the intended purpose of the study; a preliminary sample survey should have been conducted, followed by a definitive calculation of the sample size. Other variables, as suggested by cardiology studies, should have been

incorporated, such as whether it is the patient's first admission, length of stay, among others.

Conclusion :

The CEPEC scale for patient empowerment with chronic diseases, validated by Garcimartín in 2018, has undergone further validity and reliability analysis in our context. Its validity has been confirmed with a Cronbach's alpha of 0.794.

The scale, with its factors, precisely profiles us, indicating aspects where the patient and their disease are not perceived favorably.

Conflict of Interest statement

There are no conflicts of interest among the authors of the work

Funding Statement

The study has not received any funding

Data acquisition

The data has been obtained following the data protection and patient privacy law and endorsed by the Ethics Committee for Research at the Hospital Clínico San Carlos, with the approval of the study protocol.

Statistics:

Of the authors, two have specialized training in statistics. Specifically, Professor Pacheco del Cerro, Enrique, has conducted the analysis.

Author responsibility:

Affirm that methods used in data analyses are appropriately applied within the study design. Agree to take responsibility for the statistical approach's appropriateness, conduct, and interpretation.

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