Archivos Peruanos de Cardiología y Cirugía Cardiovascular
Arch Peru Cardiol Cir Cardiovasc. 2026;7(2): 99-107. doi: 10.47487/apcyccv.v7i2.634.

Original article

Patient-reported outcomes in very elderly patients after transcatheter aortic valve implantation

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Received: April 8, 2026.
Accepted: June 8, 2026.
Online: June 16, 2026.

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Funding
Self-funded.

Conflicts of interest
None.

Cite as
Gil Folgar ML, Grande Ratti MF, Perman G, Seropian IM, Garmendia CM, Smietniansky M, et al. Patient-reported outcomes in very elderly patients after transcatheter aortic valve implantation. Arch Peru Cardiol Cir Cardiovasc. 2026;7(2):99-197. doi: 10.47487/apcyccv.v7i2.634.

ABSTRACT

Objectives. To evaluate patient-reported outcomes (PROMs) in patients undergoing transcatheter aortic valve implantation (TAVI) for symptomatic severe aortic stenosis by comparing health-related quality of life before the procedure and at 12 months of follow-up in a real-world clinical practice setting. **Materials and methods.** An observational study was conducted, including 120 consecutive patients treated within an integrated healthcare network who underwent surgery between April 2021 and March 2024. Quality of life was assessed using the EQ-5D-5L questionnaire and the EQ-VAS visual analog scale. Descriptive analyses and paired comparisons were performed, with $p<0.05$ considered statistically significant. **Results.** The mean age was 83 ± 5 years; 62% were women. The EQ-VAS showed a significant increase (65.7 ± 21.8 vs. 74.3 ± 15.2; p=0.003). At baseline, the most affected dimensions were mobility, pain/discomfort, and anxiety/depression. At follow-up, a significant improvement was observed in anxiety/depression (47.5% vs. 29.2%; p=0.003). No significant changes were observed in the other dimensions. No differences were observed in the EQ-5D-5L. **Conclusions.** In elderly patients undergoing TAVI, a significant improvement in emotional well-being and global health perception was observed at one year, with functional stability in other dimensions. These findings reinforce the importance of incorporating PROMs into the comprehensive assessment and TAVI indication for older adults.

Keywords: Transcatheter Aortic Valve Implantation; Aortic Valve Stenosis; Quality of Life; Patient Reported Outcome Measures; Argentina (Source: MeSH-NLM).

RESUMEN

Resultados reportados por pacientes muy mayores tras implante valvular aórtico percutáneo

Objetivos. Evaluar los resultados informados por los pacientes (PROMs) sometidos a implante valvular aórtico percutáneo (TAVI) por estenosis aórtica severa sintomática, mediante la comparación de la calidad de vida relacionada con la salud antes del procedimiento y a los 12 meses de seguimiento, en un contexto de práctica clínica real. **Materiales y métodos.** Estudio observacional que incluyó 120 pacientes consecutivos atendidos en una red integrada de servicios de salud, intervenidos entre abril de 2021 y marzo de 2024. La calidad de vida se evaluó con el cuestionario EQ-5D-5L y la escala visual analógica (EQ-VAS). Se realizaron análisis descriptivos y comparaciones pareadas, considerando significativo $p<0,05$. **Resultados.** La edad media fue de 83 ± 5 años; 62% mujeres. La mediana de internación fue de 2 días; 12,5% presentó alguna complicación. La EQ-VAS mostró un incremento significativo (65,7 ± 21,8 vs. 74,3 ± 15,2; p=0,003). En la evaluación basal, las dimensiones más afectadas fueron movilidad, dolor/malestar y ansiedad/depresión. Al seguimiento, se observó mejoría significativa en ansiedad/depresión (47,5% vs. 29,2%; p=0,003). No se evidenciaron cambios significativos en las demás dimensiones ni en el EQ-5D-5L. **Conclusiones.** En pacientes añosos sometidos a TAVI, se observó mejoría significativa en el bienestar emocional y en la percepción global de salud al año, con estabilidad funcional en otras dimensiones. Estos hallazgos refuerzan la importancia de incorporar PROMs en la evaluación integral y la indicación de TAVI en pacientes añosos.

Palabras clave: Reemplazo de la Válvula Aórtica Transcatéter; Estenosis de la Válvula Aórtica; Calidad de Vida; Medición de Resultados Informados por el Paciente; Argentina (Fuente: DeCS-BIREME)

Introduction

Population ageing is associated with sustained increases in life expectancy and, concurrently, a higher prevalence of aortic stenosis (AS) as a degenerative valvular disease, particularly among older age groups [1,2]. This demographic shift has created a growing therapeutic challenge, especially in octogenarians, for whom conventional surgical aortic valve replacement (SAVR) is often not feasible because of high operative risk and the presence of multiple comorbidities. In this context, transcatheter aortic valve implantation (TAVI) has emerged as an innovative and effective therapeutic alternative for patients with severe AS who are considered inoperable or at high risk for conventional surgery [3].

Despite the high mortality associated with severe symptomatic AS in patients deemed inoperable, it is estimated that more than 50% of individuals assessed do not ultimately undergo an intervention, highlighting a substantial gap between treatment indication and its effective implementation [4,5]. This gap is attributable not only to clinical considerations but also to socioeconomic factors, including health coverage, high treatment costs, and inequalities in access to care. In Latin America, this issue has been explicitly examined in Argentina [6], where the tension between the clinical benefits of technological advances and the need to contain healthcare expenditure has been highlighted. Consequently, TAVI in Argentina is primarily accepted for patients considered inoperable, whereas evidence from economic evaluations in patients at other levels of surgical risk remains limited and uncertain [7,8].

However, from a value-based healthcare perspective, an important knowledge gap remains in the comprehensive assessment of TAVI, particularly with regard to patients' preferences and perspectives. Available evidence has predominantly focused on conventional clinical outcomes, such as mortality and major complications [9]. In this context, the systematic incorporation of patient-reported outcome measures (PROMs) is essential to capture dimensions of health that are not always reflected in clinical indicators, including functional capacity, symptom burden, quality of life, and emotional well-being [10]. Reporting descriptive statistics for these outcomes can help identify which health domains are most affected by AS and the extent to which they change after the intervention. Furthermore, the longitudinal collection of PROMs through repeated assessments enables changes over time to be examined, providing key information for estimating the actual benefits of TAVI from the patient's perspective and supporting a more efficient allocation of resources within a value-based framework [11].

Although international evidence has shown improvements in PROMs following TAVI [12,13], the generalisability of these findings to local settings remains limited. This limitation underscores the need to generate and analyse context-specific data that reflect the characteristics of the population, healthcare system, and available resources in the region. Accordingly, this study aimed to assess PROMs in individuals with AS undergoing TAVI using measurements obtained before and after the intervention. Specifically, we sought to quantify changes across different dimensions of health and to generate local evidence from a real-world clinical practice setting.

Materials and methods

Study design and population

We conducted a prospective, single-centre cohort study that included adults diagnosed with severe AS who were assessed by a multidisciplinary Heart Team, considered eligible for TAVI, and subsequently underwent the procedure. Consecutive patients enrolled in the Hospital Italiano de Buenos Aires prepaid healthcare plan (Plan de Salud) who agreed to participate in the institutional registry were included between April 2021 and March 2024.

Sample size estimation

No formal sample size calculation was performed. All patients who met the eligibility criteria during the study period were consecutively included. The sample size was therefore determined by convenience, on the basis of the number of eligible patients available in the institutional registry.

Variables and data collection

Data were collected using the REDCap electronic platform (Research Electronic Data Capture; Vanderbilt University, Nashville, TN, USA; version 15.5.8), which is designed for the secure collection and management of clinical research data. Data collection was undertaken by healthcare professionals from the DRIPP programme (Determinación de Riesgos para Prácticas y Procedimientos en el Adulto Mayor [Risk Assessment for Practices and Procedures in Older Adults]) [14,15], who had previously received training in the standardised use of the platform and assessment instruments.

Demographic variables (e.g., sex and age), clinical variables (e.g., comorbidities), biochemical variables (e.g., laboratory findings), and imaging data were recorded during the preprocedural assessment. Health-related quality of life was assessed using the EQ-5D-5L instrument [16], administered at two timepoints: before the procedure, during the initial Heart Team assessment, and after the procedure, at 12 months of follow-up from the date of TAVI. At follow-up, the instrument was administered either in person or by telephone, in accordance with the licence obtained for academic use (tracking ID number: 45617). The EQ-5D-5L assesses five dimensions of health: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension has five response levels: no problems, slight problems, moderate problems, severe problems, and unable to perform or extreme problems. The EQ visual analogue scale (EQ-VAS) uses a vertical visual analogue scale with endpoints labelled "the

best health you can imagine" and "the worst health you can imagine". It provides a quantitative measure of the patient's self-rated overall health on a continuous scale ranging from 0 to 100 [17]. Adverse clinical events were defined and classified in accordance with the Valve Academic Research Consortium-3 (VARC-3) criteria [18].

Statistical analysis

All analyses were performed using Stata version 16.0 (StataCorp, College Station, TX, USA). For descriptive analyses, continuous variables were summarised as mean and standard deviation (SD) or median and interquartile range (IQR), as appropriate according to their distribution. Categorical variables were reported as absolute frequencies and percentages.

For the analysis of the EQ-5D-5L questionnaire, each of its five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) was analysed separately. To facilitate clinical interpretation, responses for each dimension were dichotomised as "no problems" (level 1) and "any problems" (levels 2-5). Because the extent of missing data varied across dimensions and assessment timepoints, comparisons between baseline and 12-month follow-up were conducted using Pearson's chi-squared test, treating observations at each timepoint as independent groups in an unpaired analysis.

As a sensitivity analysis, a paired analysis was conducted among the subgroup of patients with complete data at both timepoints. In this analysis, the EQ-5D-5L dimensions were treated as ordinal variables and compared using the Wilcoxon signed-rank test, with results reported as medians and IQRs. This analysis assessed within-person changes between the two assessments and whether the median of these changes differed significantly from zero. A two-sided p-value of less than 0.05 was considered statistically significant.

Self-rated overall health was assessed using the EQ-VAS. Because data availability differed between the preprocedural and postprocedural assessments, comparisons were conducted as unpaired analyses using the independent-samples Student's t test. Analyses stratified by sex and age group were also performed.

Ethical aspects

This study was conducted in accordance with the ethical principles and regulatory requirements governing research involving human participants at both national and international levels. The study protocol was approved by the institutional research ethics committee (CEPI no. 6347). All participants provided written informed consent before enrolment.

Table 1. Baseline characteristics at the preprocedural assessment, including a comparative analysis of patients included in (N = 46) versus excluded from (N = 74) the paired analysis.

	N = 120 patients	Paired analysis (N = 46)	Non-paired analysis (N = 74)	p-value
Age, years; mean ± SD	82.99 ± 5.11	82.80 (5.34)	83.10 (5.01)	0.753
Female sex, n (%)	75 (62.5%)	29 (63.04%)	46 (62.16%)	0.923
Hypertension, n (%)	91 (75.83%)	43 (93.48%)	48 (87.27%)	0.298
Overweight or obesity (BMI ≥25 kg/m^2), n (%)	89 (74.2%)	37 (80.43%)	52 (70.27%)	0.216
Dyslipidaemia, n (%)	67 (55.83%)	28 (60.87%)	18 (39.13%)	0.288
NYHA functional class III-IV dyspnoea, n (%)	45 (37.5%)	14 (30.43%)	31 (58.49%)	0.022
Diabetes mellitus, n (%)	15 (12.5%)	11 (23.91%)	4 (7.27%)	0.019
COPD, n (%)	14 (11.7%)	7 (15.22%)	7 (12.73%)	0.718
Charlson Comorbidity Index*, mean (SD)	1.45 ± 1.38	1.43 (1.42)	1.47 (1.37)	0.884
Basic activities of daily living, mean (SD)	5.5 ± 0.63	5.45 (0.65)	5.52 (0.62)	0.556
Instrumental activities of daily living, mean (SD)	6.76 ± 1.81	7.04 (1.47)	6.59 (1.98)	0.188
Frailty according to the Edmonton Frail Scale (≥7 points), n (%)	37 (30.8%)	11 (23.91%)	26 (35.14%)	0.196
Frailty according to the Fried frailty phenotype (≥3 points), n (%)	44 (36.7%)	17 (36.96%)	27 (36.49%)	0.959
Anatomical constraints**, n (%)	8 (6.7%)	6 (13.04%)	2 (2.70%)	0.001
Valve selected				
Balloon-expandable (SAPIEN, Myval)	21 (17.5%)	N/A	N/A	N/A
Self-expanding (Evolut. ACURATE neo2, Navitor)	99 (82.5%)			

*Comorbidity was assessed using the original version of the Charlson Comorbidity Index, without adjustment for age [31].
** This does not represent a contraindication; rather, it indicates the use of a balloon-expandable valve because of aortic calcification or coronary anatomy.
SD: standard deviation. BMI: body mass index. NYHA: New York Heart Association. COPD: chronic obstructive pulmonary disease. NA: not applicable.

Results

During the study period, 120 patients were included. Of these, 62.5% were women, and the mean age was 82.99 years (SD: 5.11; range: 71-93). Regarding comorbidities, 75.83% (n = 91) had hypertension, 55.83% (n = 67) had dyslipidaemia, and 12.50% (n = 15) had diabetes mellitus. The remaining baseline characteristics are presented in **Table 1**. Overall, patients included in the paired analysis and those excluded from it were broadly similar in terms of age, sex, frailty, comorbidity burden, and baseline functional status. However, patients included in the paired analysis had a lower prevalence of New York Heart Association functional class III-IV dyspnoea (30.43% vs. 58.49%; p = 0.022), a higher prevalence of diabetes mellitus (23.91% vs. 7.27%; p = 0.019), and a greater prevalence of anatomical constraints (13.04% vs. 2.70%; p = 0.001).

Regarding the type of prosthesis implanted, self-expanding valves were used in most cases (82.5%), whereas balloon-expandable valves accounted for 17.5% of cases. The median length of hospital stay was 2 days (IQR: 1-3). Overall, 12.5% of patients (n = 15) experienced at least one postoperative complication. Events included in this composite outcome comprised eight vascular complications, nine cases of renal failure, and three strokes; individual patients could experience more than one type of event. Moreover, six patients required permanent pacemaker implantation. A total of 18 deaths occurred during follow-up; only two events occurred in the subgroup included in the paired analysis (24.32% vs. 4.35% among excluded patients; p = 0.004).

Of the 120 patients included, EQ-5D-5L data were available for 75.8% (91 of 120) at baseline and 59.1% (71 of 120) at the 12-month follow-up assessment **(Figure 1)**. **Figure 2** shows the relative frequency distribution of responses to the EQ-5D-5L across dimensions and severity levels at the preprocedural and postprocedural assessments. At baseline, a greater proportion of patients reported no problems with self-care and usual activities, whereas clinically relevant proportions reported moderate problems with mobility, pain/discomfort, and anxiety/depression. At 12 months after TAVI, the distribution of severity levels changed across dimensions, although problems persisted, particularly in the mobility and pain/discomfort dimensions.

When EQ-5D-5L responses were dichotomised as "no problems" for level 1 and "any problems" for levels 2-5, the proportion of patients reporting problems decreased in all dimensions, although these differences were not statistically significant, except for anxiety/depression. In this dimension, the proportion reporting any problems decreased significantly from 47.5% before TAVI to 29.2% after TAVI (p = 0.003). Results for each individual dimension are presented in **Table 2**.

The mean EQ-VAS score increased from 65.67 (SD: 21.81) at the preprocedural assessment to 74.31 (SD: 15.25) at the postprocedural assessment. This difference was statistically significant (p = 0.003), with a mean increase of 8.64 points. **Table 3** shows consistent increases across subgroups defined by sex and age.

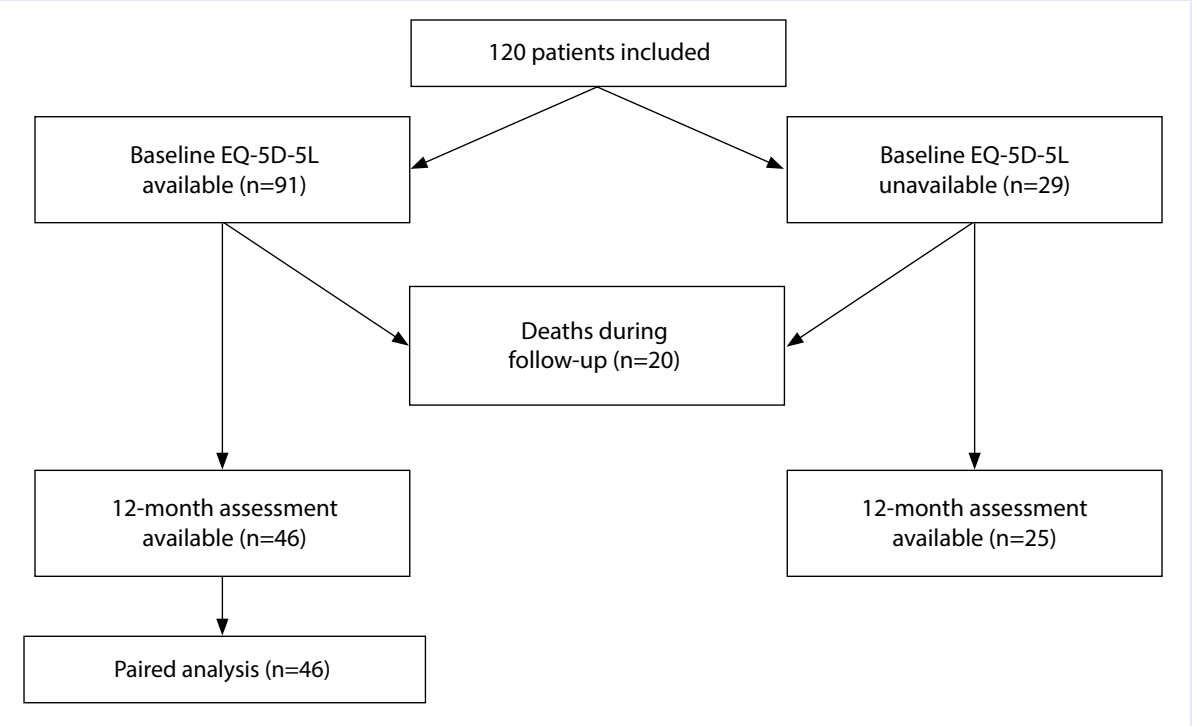

Figure 1. Flow diagram.

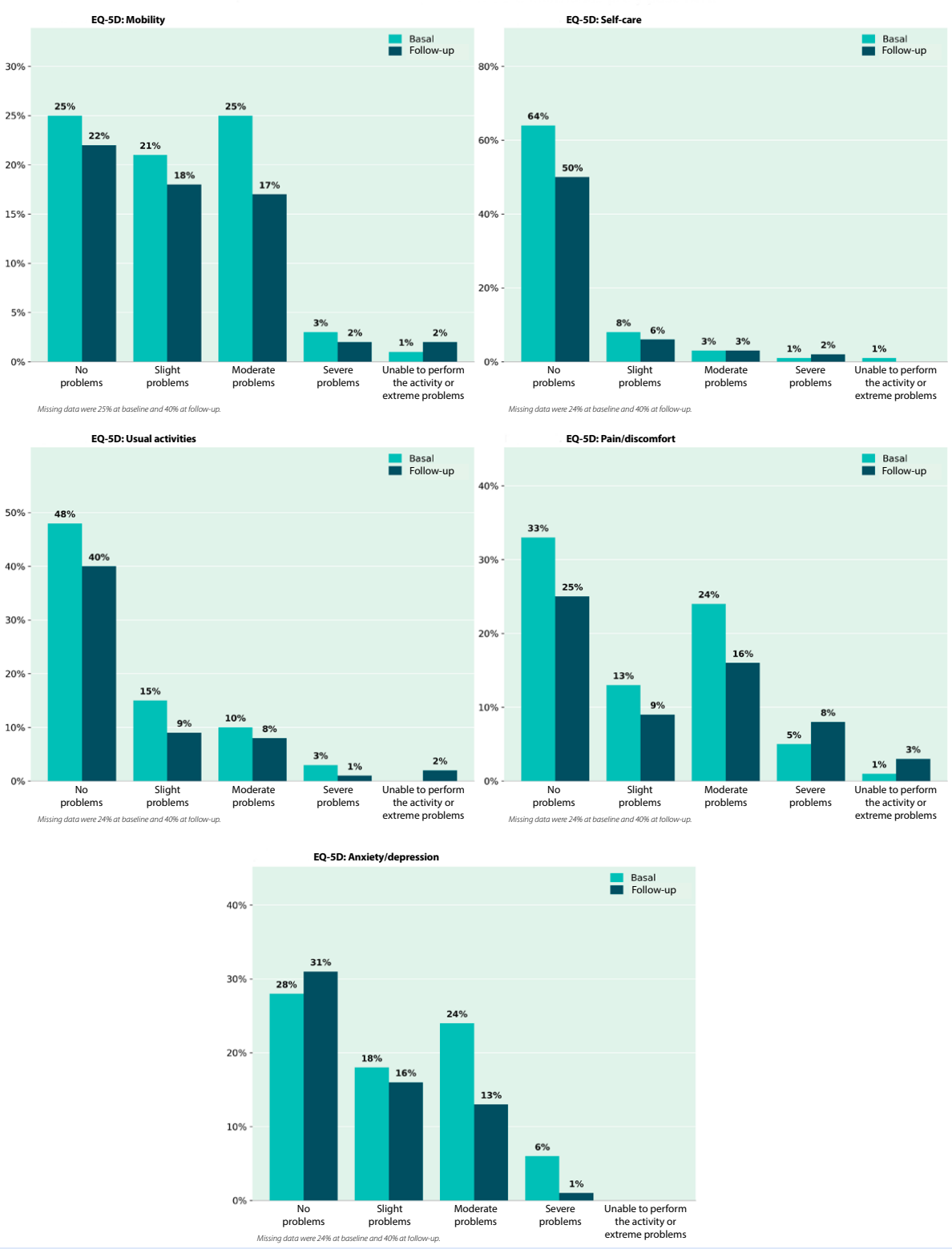

Figure 2. EuroQol EQ-5D-5L score across the five dimensions before and after TAVI (N = 120).

Table 2. EQ-5D-5L report using a dichotomised variable (at least one health-related quality-of-life problem)*

	Before (N=120) †	After (N=120) †	p-value**
Mobility, n (%)	60 (50.0%)	46 (38.3%)	0.069
Self-care, n (%)	14 (11.7%)	12 (10.0%)	0.679
Usual activities, n (%)	34 (28.3%)	24 (20.0%)	0.131
Pain/discomfort, n (%)	52 (43.3%)	42 (35.0%)	0.186
Anxiety/depression, n (%)	57 (47.5%)	35 (29.2%)	0.003

* Operationalisation: "No problems" for level 1 and "Any problems" for levels 2, 3, 4, and 5.
** Because the presence of missing data varied across dimensions, comparisons between pre- and post-TAVI measurements were performed using Pearson's chi-squared test, treating the data as independent groups (unpaired analysis).
† The EQ-5D-5L was available for 75.8% (91/120) of patients at baseline and for 59.1% (71/120) during follow-up.

Only 46 patients (38.3%) had complete EQ-5D-5L data at both assessment timepoints. Of these, 34 (73.9%; 95% CI: 59.7-84.4) showed an improvement in at least one dimension. For each dimension, a change score was calculated as the difference between the follow-up and baseline values (Δ = follow-up - baseline). Thus, a negative value indicated improvement, a value of zero indicated no change, and a positive value indicated deterioration. As shown in **Table 4**, the paired analysis showed no significant changes between baseline and the 12-month postprocedural assessment for most EQ-5D-5L dimensions. Median scores remained unchanged for mobility, self-care, usual activities, and pain/discomfort. However, a statistically significant improvement was observed in the anxiety/depression dimension, with a shift towards lower severity levels at follow-up (p = 0.007).

Discussion

In this cohort of older patients undergoing TAVI, the assessment of patient-reported outcomes using the EQ-5D-5L showed a significant improvement in the anxiety/depression dimension during postoperative follow-up, accompanied by an increase in self-rated overall health status as measured by the EQ-VAS, despite the stability observed in the other dimensions of the instrument. It should be noted that the minimal clinically important difference for the EQ-VAS is approximately 7-10 points, although this varies according to the population and condition under study.

With regard to the existing literature, the PARTNER study [19] assessed health-related quality of life using the Kansas City

Table 3. EQ-VAS report.

	Before (N=88)	After (N=70)	p-value ††
Overall, mean (SD	65.67 (21.81)	74.31 (15.25)	0.003
Stratified analysis			
Men	68.13 (23.34) (N=36)	79.56 (12.05) (N=23)	0.013
Women	63.96 (20.74) (N=52)	71.74 (16.09) (N=47)	0.036
≥80 years	68.96 (20.90) (N=66)	76.79 (14.53) (N=54)	0.015
<80 years	55.77 (21.93) (N=22)	65.93 (15.07) (N=16)	0.090

†† Because data availability differed between pre- and post-TAVI measurements, the EQ-VAS analysis was performed as a comparison between independent groups (unpaired analysis), using Student's t test for independent samples.

Table 4. Comparison between baseline assessment and follow-up for each EQ-5D-5L dimension, using paired data (N = 46).

	Before (N=46)	After (N=46)	p-value (^^)
Mobility	2 (1-3)	2 (1-3)	0.403
Self-care	1 (1-1)	1 (1-1)	0.377
Usual activities	1 (1-2)	1 (1-2)	0.336
Pain/discomfort	2 (1-3)	2 (1-3)	0.203
Anxiety/depression	2 (1-3)	1 (1-2)	0.007

Data are reported as medians with the 25th–75th percentiles (possible range, 1: best; 5: worst) for each of the five dimensions.
(^^) Comparisons between baseline assessment and follow-up were performed using the non-parametric Wilcoxon signed-rank test for paired data, which is appropriate for ordinal variables or continuous variables with non-normal distributions. For each patient, the analysis evaluates the difference between both measurements and determines whether the median of these differences is significantly different from zero.

Cardiomyopathy Questionnaire-Overall Summary score (KCCQ-OS), reporting mean scores of 86.2 among 503 patients assigned to undergo TAVI and 85.9 among 497 patients assigned to surgery. These findings suggest that both TAVI and surgery provide sustained and comparable long-term benefits in terms of functional status and quality of life, consistent with our findings showing an association between TAVI and improvements in selected components of perceived quality of life. Similarly, Kleiman *et al.* [20] analysed 1,584 patients from the SURTAVI study, of whom 805 underwent TAVI and 779 underwent surgery, and assessed quality of life using the KCCQ at baseline, at 30 days, and annually thereafter for up to 5 years. Patients undergoing TAVI experienced a more rapid recovery, with a significantly greater improvement in quality of life during the first month after the procedure. However, at 1 year of follow-up, both groups showed substantial and virtually identical improvements in health status compared with baseline, with increases of approximately 20 points in the overall KCCQ score [20].

Several studies have sought to validate frailty as a prognostic tool, as well as surrogate measures of frailty [21-23]. In a retrospective study, changes in the quality-of-life PROM measured using the KCCQ-12 before and after TAVI were independently associated with long-term survival, whereas minimal changes or a low baseline score predicted higher late mortality after the procedure [24]. By contrast, in cardiac surgery, the EuroSCORE II risk score, which does not include quality of life, frailty, or PROMs, showed the greatest discriminatory ability for predicting short-term mortality, outperforming the frailty index when assessed in isolation [25]. Nevertheless, several studies have shown an association between frailty and clinical events after TAVI [22,26,27]. Among these, one study assessed the effect of baseline frailty on quality of life, measured using the KCCQ, with follow-up of up to 3 years [28]. Approximately one in six patients undergoing TAVI was frail; however, the magnitude of improvement in quality of life after the procedure was comparable to that observed in non-frail patients [28]. Consistently, a prospective cohort study assessing frailty in octogenarians at 6 months after TAVI found that frail patients, who had the lowest self-rated health scores at baseline, experienced the greatest physical and mental improvements after the intervention. These findings reinforce the view that baseline frailty is a dynamic condition that does not necessarily reflect quality of life or self-perceived health status [29]. In our cohort, one-third of patients were frail (30.8% according to the Edmonton Frail Scale and 36.7% according to the Fried frailty phenotype), supporting the need for a multidimensional assessment that includes frailty while also incorporating quality-of-life assessment tools. Baseline frailty should therefore not be regarded as an exclusion criterion, but rather as a potentially modifiable state following TAVI.

The population included in this study was characterised by very advanced age and a high burden of concomitant cardiovascular comorbidities, which is representative of routine clinical practice among geriatric patients selected for this procedure in our setting. Previous studies assessing PROMs in patients undergoing TAVI [10-13] included populations with a mean age of 79-80 years, whereas the mean age in our population was 83 years, making this the oldest cohort reported.

The increasing adoption of TAVI as a standard treatment is primarily related to its positive effect on postoperative quality of life, even among populations traditionally considered more vulnerable. In this context, the stability observed in our cohort in dimensions such as mobility, self-care, usual activities, and pain/discomfort could be interpreted as a clinically relevant outcome, because it suggests that the procedure was not associated with patient-perceived functional deterioration. Moreover, given the advanced age of the study population and the fact that patients were assessed 1 year after TAVI, a natural decline in scores might have been expected because of ageing itself, independently of AS. Symptoms of AS, including dyspnoea, angina, and syncope, are usually progressive over the short term and result in functional decline, reducing patients' mobility and ability to perform daily activities. By contrast, the significant improvement observed in the anxiety/depression dimension, both in the dichotomised assessment and in the paired analysis, suggests a positive effect of TAVI on emotional well-being. Notably, this domain showed consistent changes across different analytical approaches, strengthening

the robustness of this finding. This improvement could be explained by several factors, including the resolution or alleviation of previous symptoms, reduced uncertainty associated with the disease, and the perception of having successfully undergone TAVI.

Similarly, the significant increase observed in the EQ-VAS indicates an improvement in self-rated overall health, even in the absence of relevant changes in several specific EQ-5D-5L dimensions. This divergence between the global assessment and the individual domains has been previously described [13,30] and highlights that an overall perception of health can capture benefits that are not always reflected in each dimension separately, particularly among populations with chronic functional limitations.

Our study has several limitations. First, the relatively small sample size might have limited the ability to detect subtle changes in some dimensions. Second, follow-up was limited to 12 months because of the high morbidity and mortality of this very old population, preventing assessment of longer-term changes in quality of life. Third, the substantial proportion of missing data, 25-40% for the EQ-5D-5L and 27-42% for the EQ-VAS, entails a high potential for selection bias and survival bias. Preoperative assessments were not obtained for some patients because the instrument was implemented gradually, a process that naturally requires an adaptation period. Other patients did not attend scheduled appointments and could not be contacted despite repeated telephone calls, which limited completion of the postoperative EQ-5D-5L assessment. Additionally, 20 patients (16.6%) died during the follow-up period. Finally, the absence of a control group precludes establishing a direct causal relationship between the intervention and the observed changes. Although the study had a longitudinal design, incomplete quality-of-life measurements prevented the use of longitudinal mixed-effects models or generalised estimating equations. Consequently, the findings and observed changes should be interpreted cautiously, because the longitudinal structure of the data could not be fully used.

Conversely, one of the main strengths of this study is that it provides real-world evidence from a Latin American and regional healthcare setting, reflecting routine clinical practice in a very old population that is commonly underrepresented in experimental studies. The absence of a formal sample size calculation means that the study might have lacked sufficient statistical power to detect small or moderate differences in some outcomes; therefore, the findings should be interpreted as exploratory. The systematic assessment of quality of life captured patients' subjective experiences beyond traditional clinical outcomes. Although missing data were recorded, this reflects the progressive implementation of value-based measures in our setting and highlights the importance of placing quality of life at the centre of outcome assessment and clinical decision-making.

In conclusion, these findings provide relevant evidence on the subjective experiences of geriatric patients during the postoperative period and reinforce the need to systematically integrate frailty assessment and patient-reported outcomes into decision-making and the assessment of clinical outcomes in older adults.

Author contributions

MLGF: methodology, software, formal analysis, writing—original draft, writing—review and editing, and visualisation. **MFGR:** methodology, software, formal analysis, writing—original draft, writing—review and editing, visualisation, supervision, and project administration. **GP:** conceptualisation, methodology, writing—original draft, writing—review and editing, visualisation, supervision, and project administration. **IMS:** conceptualisation, data curation, validation, formal analysis, writing—original draft, writing—review and editing, and visualisation. **CMG:** data curation, validation, formal analysis, writing—original draft, writing—review and editing, and visualisation. **MS and MER:** investigation and writing—review and editing. **CRA and MCP:** conceptualisation, methodology, writing—original draft, writing—review and editing, supervision, and project administration.

Acknowledgments

We thank María Lourdes Posadas Martínez, from the Department of Research, for her contribution to the development of the study concept and preparation of the protocol submitted to the ethics committee, in her capacity as a methodological adviser. We also thank Sebastián Piñel, from the Department of Cardiology, for his contribution to the development of the study concept, preparation of the protocol, and development of the REDCap database. Finally, we thank Mariela Andrea del Rosario Cal, from the Department of Geriatrics, for her collaboration in data collection and her dedication to patient care.

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