

Patient Satisfaction Questionnaire after Transcatheter Aortic Valve Replacement

Shikhar Agarwal MD MPH¹, Imran Baig, MD¹, Amir Eslami, DO², Tanawan Riangwiat, MD^{1*}

¹Cardiology Department, Geisinger Medical Center, Danville, PA

²Internal Medicine Department, Geisinger Medical Center, Danville, PA

***Corresponding author:** Tanawan Riangwiat, Cardiology Department, Geisinger Medical Center, Danville, PA.

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Abstract

Health-related quality of life (HRQoL) is a multi-dimensional concept that includes domains related to physical, mental, emotional, and social functioning. Kansas City Cardiomyopathy Questionnaire (KCCQ) is typically utilized to assess the HRQoL after TAVR (1).

Key words: Patient satisfaction; quality of life; questionnaire; transcatheter aortic valve replacement.

Running Head: Patient satisfaction questionnaire after TAVR

Abbreviations:

HRQoL: Health-related quality of life

IQR: Interquartile range

KCCQ: Kansas City Cardiomyopathy Questionnaire

SD: Standard deviation

TAVR: Transcatheter aortic valve replacement

TASQ: The Toronto Aortic Stenosis Quality of Life

Letter

Health-related quality of life (HRQoL) is a multi-dimensional concept that includes domains related to physical, mental, emotional, and social functioning. Kansas City Cardiomyopathy Questionnaire (KCCQ) is typically utilized to assess the HRQoL after TAVR (1). In our experience, this questionnaire is rather difficult for elderly patients to comprehend and

respond to. In addition, we feel that the patient satisfaction represents the perception of HRQoL in patient's life and may be more appropriate at gauging health-related benefits post-TAVR. The aims of this study were to correlate the patient satisfaction questionnaire with the current KCCQ among patients undergoing TAVR and to evaluate change in satisfaction post TAVR (1 week to 1 month).

All patients undergoing TAVR that survived to hospital discharge were prospectively enrolled in this study after obtaining informed consent. The satisfaction questionnaire (Figure 1) was administered at 1-week (range 7-10 days) and 1-month after TAVR (range 28-36 days).

The satisfaction questionnaire consisted of seven simple questions with simple responses. The total score could range from 7 to 33, with higher scores indicating higher satisfaction. The total score on the questionnaire was calculated by adding the points from each question. We included a categorical question, specific to TAVR – "Would you have this TAVR procedure again?"

The Satisfaction Questionnaire Post TAVR

1. How much has your shortness of breath improved after the procedure?

- a. Significantly (4)
- b. Somewhat improved (3)
- c. Worsened (2)
- d. Unchanged (1)

2. On average, how frequently can perform activities of enjoyment/daily living without significant symptoms?

- a. Every day (5)
- b. Most days (>3 days) (4)
- c. Some days (< or equal to 3 days) (3)
- d. Infrequently (once per week) (2)
- e. Unable to perform ADL's consistently (1)

3. On average, how many days per week do you have chest pain or discomfort that limits your activity

- a. Every day (5)
- b. Most days (>3 days) (4)
- c. Some days (< or equal to 3 days) (3)
- d. Infrequently (once per week) (2)
- e. None at all (1)

4. How would you rate your current satisfaction with ability to perform desires/activities at your discretion?

- a. Highly satisfied (Able to perform all activities without limitation) (5)
- b. Satisfied (Able to perform most activities without difficulty) (4)
- c. Not satisfied (Can perform activities but with non-limiting symptoms) (3)
- d. Dissatisfied (Have limitations in my desires due to physical symptoms) (2)
- e. Very dissatisfied (I have had to change the way I live life due to symptoms) (1)

5. My family would rate my current quality of life as:

- a. Excellent (5)
- b. Good (4)
- c. Fair (3)
- d. Poor (2)
- e. Debilitated (1)

6. On average, how many days per week do you feel limited by fatigue/lack of energy

- a. Every day (5)
- b. Most days (>3 days) (4)
- c. Some days (< or equal to 3 days) (3)
- d. Infrequently (once per week) (2)
- e. None at all (1)

7. Would you have this TAVR procedure again?

- a. Definitely (4)
- b. Possibly (3)
- c. Less likely (2)
- d. Definitely Not (1)

Figure 1: The satisfaction questionnaire post TAVR consisted of seven simple questions with simple responses.

A total of 118 patients, including 63 males and 55 females, were included between May 2018 and June 2019. Mean (SD) age was 82.1 (8.4) years. Edwards Sapien S3 valve was used in 88 patients, while Medtronic CoreValve was used in 30 patients. Of all patients, 95 patients completed the survey at both 1-week and 1-month follow-up. At 1-week, the proportion of patients indicating that they would definitely have

TAVR again was 49.5%, which increased to 68.4% at 1-month follow up ($p < 0.001$). Median (IQR) total satisfaction score increased from 24 (22-26) at 1-week to 26 (24-29) at 1-month ($p < 0.001$ using Wilcoxon sign rank test). Using pairwise correlation, we observed a moderate degree of correlation between 1-month satisfaction scores and the 1-month KCCQ scores in our cohort (correlation coefficient: 0.51, $p < 0.001$) (**Figure 2**).

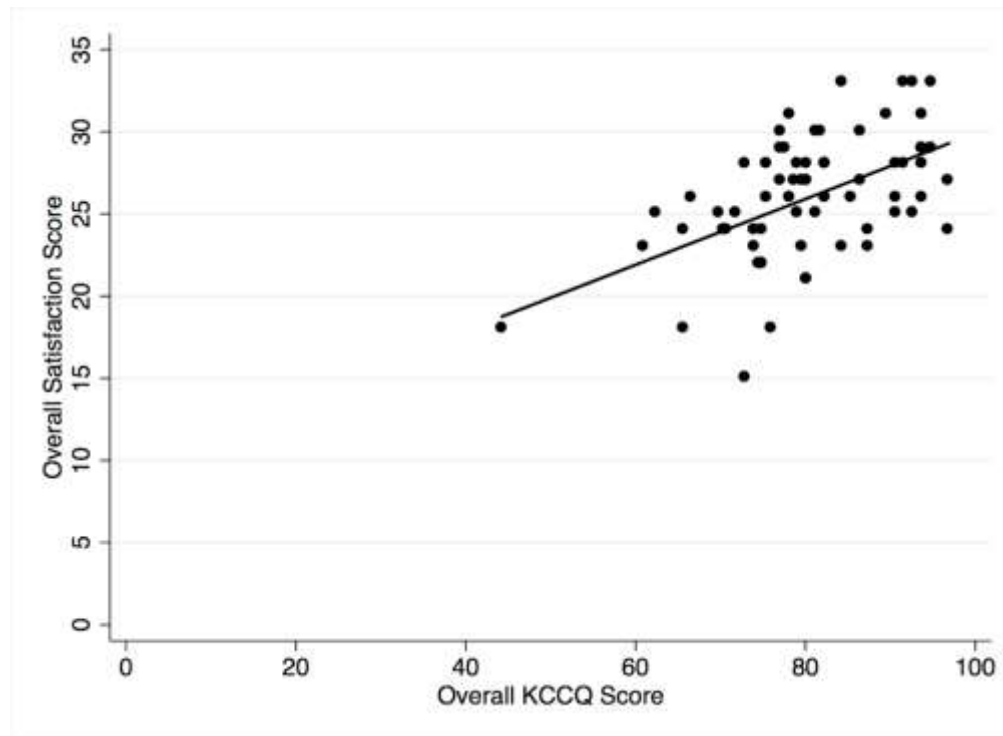


Figure 2: Pairwise correlation between 1-month satisfaction scores and the 1-month KCCQ scores in our cohort (correlation coefficient: 0.51, $p < 0.001$).

In this prospective study, we assessed a simple 7-question survey specifically for elderly patients undergoing TAVR at a moderate volume referral center. Based on our experience with the KCCQ, we have realized a need for a simple questionnaire to assess satisfaction consistently in this population. One can surmise that HRQoL assessed using KCCQ may not be completely applicable to the TAVR cohort due to intrinsic differences between the heart failure patients and the TAVR patients. This was evident with only a moderate degree of correlation observed between the two scoring systems. Even though the correlation existed and was statistically significant in a positive direction, it was moderate at best. The Toronto Aortic Stenosis Quality of Life (TASQ) Questionnaire was a newly developed 16-item questionnaire specific for severe aortic stenosis patients. Its validation on patients undergoing TAVR was under investigation by Frank et al [2]. This could be another alternative tool to evaluate clinical outcome post TAVR. Despite this, majority of the patients have enough benefit to consider TAVR worthwhile. According to a meta-analysis of 20 studies, functional capacity as well as HRQoL improved substantially following TAVR, despite evolution in patient selection criteria over time [3]. In addition, there was a continued improvement in patient satisfaction noted from one week to one month after that TAVR procedure. According to the Transcatheter Valve Therapy (TVT) registry, 38.9% of patients after TAVR between 2011-2015 had “poor outcome” defined as death, poor HRQoL or decline in

HRQoL [4]. The outcomes have improved over time likely because of improvement in patient selection, device technology and operator experience and advancement in peri-procedural care [4]. Our study had important limitations to consider. The study only had short-term follow-up result but it lacked of long-term evaluation such as at 6-month follow-up after TAVR. The number of patients in our study was relatively small though we included all the patients during the study period. Additionally, there were only 7 questions in the questionnaire, which might not be able to explore all domain of quality of life. However, our questionnaire was designed to be simple and easy to understand for elderly patients. Lastly, we didn't include other HRQoL questionnaires such as EuroQoL-5 Dimension and 36-Item Short Form Survey in our study.

In conclusion, in this prospective study from a referral TAVR center, we have assessed a simple 7-question survey evaluating patient satisfaction at 1-week and 1-month after TAVR, which may be applicable to a wide variety of settings nationally and internationally.

Conflicts of interest

The authors report no conflicts of interest and no targeted funding.

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