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Initial findings with the PATient experience in the CATH Lab (PATCATH) patient-reported experience metric

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In recent years, increasing attention has been given to capturing, evaluating, and improving the patient experience in the cardiac catheterisation laboratory. To this end, the European PATient Experience in the CATHeterisation Laboratory (PATCATH) questionnaire **(Supplementary Figure 1)** was developed[1]. This is a novel tool, produced by the Patient Initiatives Committee of the European Association of Percutaneous Cardiovascular Interventions (EAPCI), aiming to assess the patient's experience of cardiac catheterisation. We report the initial experiences of using the tool in a high-volume tertiary referral centre.

The questionnaire was developed by the EAPCI in association with the European Society of Cardiology Patient Forum and divided into 3 domains, assessing experience before, during and after coronary angiography or intervention. Responses were recorded on a scale of strongly agree, agree, disagree, or strongly disagree. The questionnaires were distributed to patients attending the catheterisation lab for angiography or percutaneous coronary intervention (PCI) during the time period of the pilot study. A research nurse distributed the questionnaire and explained the rationale for the study but did not assist the patient with completion of the questionnaire. Participation was anonymous and voluntary. Information on patients who declined to fill out the questionnaire was not available. All questionnaires that were completed were analysed, even if they were only partially filled.

A total of 100 responses from patients in the catheterisation laboratory undergoing either elective or inpatient coronary angiography or PCI were received. A total of 52% of patients were grouped in the higher age category (≥66 years), most were male, and most underwent a diagnostic coronary angiogram **(Supplementary Table 1)**. Of note, 21% of respondents included were >75 years old. The response rate for individual questions was on average 94.7±0.1%. Patient response indicated a high level of satisfaction with the experience before the procedure: 98.6% of patients strongly agreed or agreed with statements confirming that they were aware why the procedure was recommended and felt supported whilst awaiting it **(Figure 1A)**. Furthermore, 98.5% strongly agreed or agreed with statements affirming a positive sense of comfort and safety during the procedure, with clear communication from the operator **(Figure 1B)**. After the procedure, 59.8% reported a positive experience, with issues identified

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in comprehending necessary lifestyle changes (60%), the benefits of a rehabilitation program (46%), the rationale behind medication recommended (58%) and treatment duration (53%) **(Figure 1C)**.

Patient-reported experience measures are a key element of the transition from volume-based to value-based cardiac care. Our initial pilot experience with the PATCATH tool was positive. Although response rates varied by specific question, the non-response rate was not greater than 30% for any individual question.

Some limitations of our study should be considered. Due to the pilot nature of the study, the survey was distributed by a research nurse. We cannot discount that this may have introduced bias in responses and may have resulted in a higher than usual participation

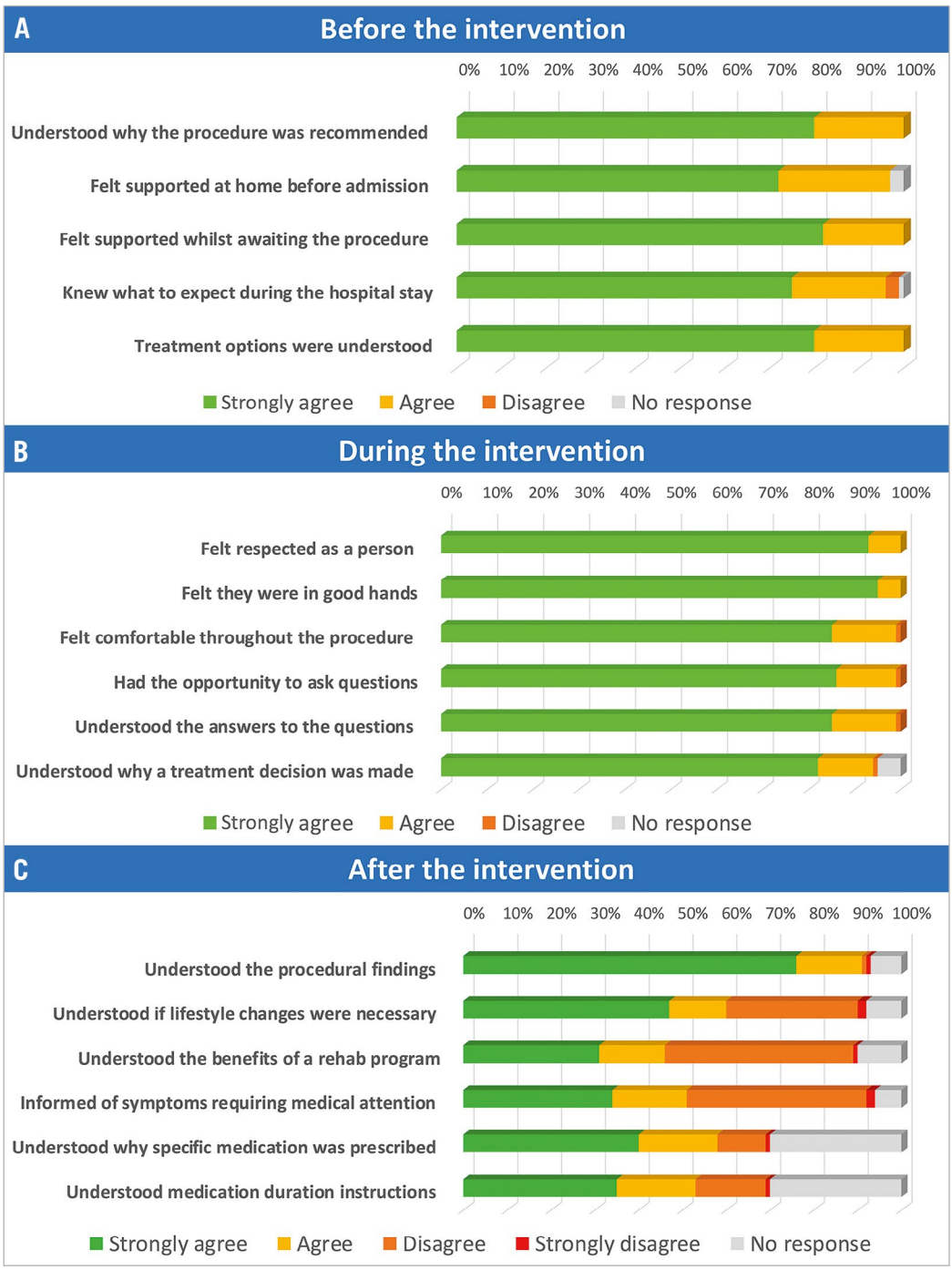

Figure 1. *Patients' responses to the PATCATH questionnaire. A) Before the procedure. Assessment of the patient's understanding of the procedural indication, support whilst awaiting the procedure, and expectations of the hospital stay. B) During the procedure. Assessment of the patient's experience of the procedure, in particular, their sense of safety, comfort and ability to understand the findings communicated during the procedure. C) After the procedure. Assessment of the aftercare instructions, in particular, the diagnosis, advice on lifestyle findings, benefits of a rehabilitation programme, and choice and duration of pharmacological treatment.*

rate. The fact that the questionnaire was administered shortly after the procedure might be a limitation. Administration at a later point may be preferable, although the value of an immediate evaluation for the experience would be missed, and the potential impact on the response rate should be considered. Our surveys were administered on paper, but an electronic form might further improve response rates and would allow capture of the completion time. In general, patient satisfaction was very high, which, although reassuring, suggests that further calibration of the tool might prove useful. Responses in relation to postprocedural care showed a higher degree of uncertainty. This may be due to information overload, where the patient is provided with so much information all at once that it is difficult to absorb and retain, or due to incorrect assumptions about the patient's pre-existing level of knowledge. It may also be that some questions in the post-procedure domain are not relevant to all patients, e.g., those without findings of obstructive coronary artery disease. The impact of the local practice of routine administration of low-dose benzodiazepine (intravenous midazolam) at the time of the procedure should also be considered, although most questionnaires were administered just prior to discharge, when the residual effects of periprocedural sedation were likely minimal.

The results of this analysis suggest that a novel tool to assess patient satisfaction in patients undergoing coronary angiography and intervention was easy to administer and generally well understood. Higher uncertainty in the post-procedure domain suggests that further calibration of the tool may be helpful.

Guest editor

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References

1. Cardiology ESC. EAPCI Patient Initiatives Committee resources. https://www.escardio.org/Sub-specialty-communities/European-Association-of-Percutaneous-Cardiovascular-Interventions-(EAPCI)/Advocacy/european-patient-initiatives-committee-resources. Last accessed: 01 July 2023.

Supplementary data

Supplementary Table 1. Patient baseline characteristics.

Supplementary Figure 1. PATCATH patient questionnaire form.

The supplementary data are published online at: https://eurointervention.pcronline.com/doi/10.4244/EIJ-D-23-00051

Supplementary data

Supplementary Table 1. Patient baseline characteristics.

Baseline characteristics % (n)	<66 years (N=48)	≥66 years (N=52)
Male gender	77.1 (37)	69.2 (36)
Interventional procedure		
Angiogram	83.3 (40)	76.9 (40)
Percutaneous coronary intervention	16.7 (8)	23.1 (12)

EAPCI

European Patient Experience in the Catheterization Laboratory (PATCATH) Questionnaire

This questionnaire has been developed by the patients and doctors working together with the European Association of Percutaneous Cardiovascular Interventions, a branch of the European Society of Cardiology. It is designed to evaluate your experience as a patient undergoing a cardiac catheterization to diagnose (angiography) or treat (angioplasty) coronary artery disease. The data collected is intended to be used to evaluate and improve the quality of care received by you and other patients in the future. This survey is organized by your physician/hospital, and no data will be collected by the European Association of Percutaneous Cardiovascular Interventions, a branch of the European Society of Cardiology. Please contact your doctor with any question you may have.

Instructions: For each statement, please select the response you think most closely represents your experience

Country:	
Hospital name/institution:	
Patient gender:	☐ Male ☐ Female
Patient age:	☐ < 45 ☐ 45-65 ☐ 66-74 ☐ >75

Part A: Before the intervention

	Strongly disagree	Disagree	Agree	Strongly agree
1. I understood why the doctor recommended the angiography/angioplasty procedure				
2. I felt supported while waiting at home to be admitted for the angiography/angioplasty				
3. I felt supported while in the hospital waiting for the angiography/angioplasty				
4. I understood what to expect during the hospital stay, from admission until discharge				
5. I understood the possible treatment options that were explained to me before the procedure and was aware that they would be confirmed at the time of the procedure				

EAPCI PREM Cath/PCI (PATCATH 5.0)	V5 dated June 2021	ORIGINAL VERSION ENGLISH	Developed by EAPCI Patient Initiative Committee 2018-2020 and 2020-2022

ESC European Society of Cardiology

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Part B: During the intervention

	Strongly disagree	Disagree	Agree	Strongly agree
1. I felt respected as a person				
2. I felt that I was in good hands				
3. I felt comfortable throughout the procedure				
4. I had the opportunity to ask questions				
5. I understood the answers to my questions				
6. I understood that a treatment decision was made during the procedure and why				

Part C: After the intervention

	Strongly disagree	Disagree	Agree	Strongly agree
1. I understood what the main findings of the examination were				
2. I understood whether or not lifestyle changes were necessary				
3. I understood how a rehabilitation programme could help my recovery				
4. I was made aware of future signs and symptoms which require urgent medical attention				
5. I understand the reasons why I have been prescribed specific medication after the procedure				
6. I am aware of the length of time that I should take these medication				

Entered by (Name):	
Entered on (Date):	

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Supplementary Figure 1. PATCATH patient questionnaire form.
The questionnaire is divided into 3 domains assessing experience before, during and after coronary angiography or intervention. Responses were recorded on a scale of strongly agree, agree, disagree, or strongly disagree**.**