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RESEARCH ARTICLE

Patients' Perspective Toward Primary Percutaneous Coronary Intervention (PCI)

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Abstract: ***Background:*** Primary percutaneous coronary intervention (PCI) is the preferred reperfusion strategy for ST-elevation myocardial infarction; however, patient perspectives and informational needs remain underexplored in many settings. This study assessed attitudes, awareness, and sources of information about PCI among patients receiving care at a tertiary cardiac center in the Kurdistan Region of Iraq. ***Methods:*** Using a cross-sectional study design, we surveyed consenting adults at the Duhok Cardiac Center (n=104; 60 males, 44 females). The questionnaire contained variables accounting for sociodemographics, awareness/experience of PCI, perceived accessibility, and a 7-item attitude scale (5-point Likert). Internal consistency, descriptive statistics, Spearman correlations, and χ^2 tests contrasted responses by sex, age (30–45, 46–60, >60 years), and education (five levels). Two-by-two contrasts included ORs. ***Results:*** The attitude scale showed good reliability (Cronbach's α=0.798). Means (±SE) indicated generally favorable views: trust in clinicians regarding PCI (3.87±0.07) was highest, followed by perceived effectiveness (3.64±0.07) and safety (3.62±0.07). Preference for medication over PCI was lowest (2.97±0.09). Risk concerns were moderate (3.21±0.09) and perceived cost burden was notable (3.67±0.07). Awareness of PCI was high overall (88.5%); males reported greater awareness than females (95.0% vs 79.5%; p=0.015; OR=4.89). Knowledge levels differed by sex (p<0.001), age (p=0.050), and education (p<0.001). Sources of information varied by sex (p=0.018) and age (p=0.022); physicians were the most common source. Perception of PCI as non-surgical differed by sex (p=0.001). Prior personal/family PCI experience was more frequent in males (88.3% vs 72.7%; p=0.042; OR=2.84). Risk concerns correlated positively with perceived cost (ρ=0.334, p<0.01). ***Conclusions:*** Patients displayed strong trust in clinicians and generally positive views of PCI, yet notable gaps in awareness and knowledge persist—particularly among women and those with lower education. Targeted, culturally sensitive education and shared decision-making may enhance understanding of benefits, risks, and alternatives while addressing concerns about cost and side effects.

Keywords: PCI, patient attitudes; health education; risk perception; Duhok Cardiac Center.

INTRODUCTION

Percutaneous coronary intervention (PCI) is a widely performed procedure for relieving coronary artery obstruction in patients with coronary artery disease (CAD) and has become a cornerstone in modern cardiology due to advances in stent technology and operator expertise[1–4]. Despite its exponential global growth and proven effectiveness in acute coronary syndromes, particularly ST-elevation myocardial infarction, the role of PCI in stable CAD has been increasingly debated[5–7]. Large randomized controlled trials, including COURAGE, ISCHEMIA, and ORBITA, demonstrated that PCI does not significantly reduce mortality, myocardial infarction, or even angina symptoms compared to optimal medical therapy alone, raising questions about its routine use as first-line therapy in stable CAD[8–10]. This evolving evidence represents a medical reversal that challenges long-standing assumptions about PCI and highlights the importance of shared decision-making to align treatment strategies with patient values and expectations[11,12]. Beyond survival and symptom relief, patients undergoing PCI frequently face psychological challenges such as preoperative anxiety and depression, which can adversely affect perioperative outcomes[13,14]. Preoperative education has been shown to reduce anxiety, enhance compliance, and improve postoperative recovery, although conflicting findings exist regarding its effectiveness[15–17]. Importantly, patients' perceptions of PCI and their informational needs are influenced not only by clinical evidence but also by cultural and social contexts. Studies from diverse settings illustrate how cultural beliefs shape treatment choices, adherence, and satisfaction with care[18–21]. Understanding these perspectives is essential for tailoring patient education, improving satisfaction, and achieving patient-centered care. The aim of this study was to explore and understand patients' perspectives toward primary PCI and its impact on their healthcare journey.

MATERIAL AND METHODS

We conducted a quantitative, cross-sectional, questionnaire-based study at the Department of Cardiology, Duhok Cardiac Center, Kurdistan Region, Iraq, in collaboration with the Kurdistan Board of Medical Specialties (KBMS). The study assessed patients' perspectives toward primary percutaneous

coronary intervention (PCI) and its perceived impact on healthcare services.

Inclusion criteria were adults (≥18 years) with ischemic heart disease or cardiac symptoms who were stable enough to participate and able to provide informed consent. Exclusion criteria were significant cognitive impairment or major psychiatric illness that could limit the validity of responses. Consecutive eligible patients who agreed to participate were enrolled.

A total of 104 participants were included in the final analysis (60 males, 44 females). Demographic subgroups included three age strata (30–45 years, n=10; 46–60 years, n=26; >60 years, n=68) and five education levels (no formal education, n=48; primary, n=26; secondary, n=19; university, n=10; postgraduate, n=1). Sampling was pragmatic and consecutive among eligible patients during routine care to minimize selection bias.

Data were collected via a structured questionnaire administered face-to-face by trained staff. The tool comprised:

1. Sociodemographic and background variables: age, sex, education level; awareness of PCI (heard of PCI, source of information, perception of whether PCI is surgical vs non-surgical), personal/family experience with PCI, and perceived accessibility of PCI.
2. Attitude scale toward PCI (7 items) rated on a 5-point Likert scale (1=strongly disagree to 5=strongly agree): PCI effectiveness; confidence to undergo PCI if recommended; perceived safety of PCI; preference for medication over PCI; trust in medical professionals regarding PCI; concern about PCI risks/side effects; perceived cost burden of PCI.
3. Reliability analysis showed Cronbach's alpha = 0.798, indicating acceptable internal consistency of the 7-item attitude scale.

Data management and statistical analysis

Data were entered and analyzed using SPSS version 26 (IBM, 2019). Data quality checks included visual inspection of distributions and range checks. For the 7-item attitude scale ("section C"), Levene's test indicated homogeneity of variances across groups ($p>0.05$). Normality was assessed (Shapiro–Wilk); because some items were non-normally distributed, non-parametric correlations were used.

- Descriptive statistics: mean, standard error (SE), median, and range for Likert items; counts and percentages for categorical variables.
- Reliability: Cronbach's alpha for the 7-item attitude scale.
- Correlation analysis: Spearman's rho to examine associations among attitude items; two-tailed significance was set at $p<0.05$ (and $p<0.01$ reported where applicable).
- Group comparisons: Chi-square tests evaluated associations between categorical outcomes and sex, age category, and education (alpha=0.05). Where 2×2 contrasts were relevant (e.g., awareness or experience with PCI by sex), odds ratios (ORs) with 95% confidence intervals were calculated (reference coding noted in tables).
- All tests were two-tailed. Results are reported as n (%) for categorical variables and mean ± SE for Likert items, aligned with standard reporting for survey-based cardiovascular research.

Ethical considerations

The study protocol adhered to the principles of the Declaration of Helsinki. Administrative and ethical approval were obtained from the Duhok Cardiac Center/KBMS oversight (local program approval). Written informed consent was obtained from all participants prior to data collection. All data were anonymized, participation was voluntary, and respondents could withdraw at any time without impact on care.

RESULTS AND OBSERVATIONS:

The descriptive analysis of patients' attitudes toward PCI revealed generally favorable perceptions. The highest mean score was observed for trust in medical professionals to recommend PCI when necessary (3.87 ± 0.07), indicating strong reliance on physicians' expertise. Similarly, high agreement was noted for perceived effectiveness (3.64 ± 0.07) and safety (3.62 ± 0.07) of PCI, reflecting confidence in the procedure. In contrast, the lowest mean was for preference for medication over PCI (2.97 ± 0.09), suggesting that most patients favored interventional treatment over conservative options when both were available. Moderate concern was reported regarding risks and side effects (3.21 ± 0.09) and cost of PCI (3.67 ± 0.07), highlighting practical and emotional considerations that may affect decision-making. (Table 1).

Table 1: Descriptive statistics for the numerical data

Item	Mean ± SE	Median	Range (Min–Max)
PCI effectiveness in treating heart attacks	3.64 ± 0.07	3.69	1–5
Confidence in undergoing PCI if recommended	3.48 ± 0.07	3.54	1–5
Perception of PCI safety	3.62 ± 0.07	3.67	1–5
Preference for medication over PCI	2.97 ± 0.09	2.94	1–5
Trust in medical professionals regarding PCI	3.87 ± 0.07	3.92	2–5
Concern about risks or side effects of PCI	3.21 ± 0.09	3.24	1–5
Perception of PCI cost	3.67 ± 0.07	3.67	2–5

Correlation analysis

The correlation analysis presented in Table 2 demonstrates meaningful associations among participants' attitudes toward PCI. Perceived effectiveness of PCI showed strong and significant positive correlations with both confidence in undergoing the procedure ($\rho = 0.533$, $p < 0.01$) and perception of PCI safety ($\rho = 0.550$, $p < 0.01$), suggesting that patients who viewed PCI as effective were also more confident and likely to consider it safe. Similarly, trust in medical professionals was positively correlated with confidence ($\rho = 0.379$, $p < 0.01$) and perceived safety ($\rho = 0.311$, $p < 0.01$), highlighting the pivotal role of physician–patient trust in shaping attitudes. In contrast, preference for medication over PCI was negatively correlated with PCI effectiveness ($\rho = –0.262$, $p < 0.01$), confidence ($\rho = –0.199$, $p < 0.05$), and safety ($\rho = –0.168$), reflecting a divergence between interventional and conservative treatment preferences. Concern about risks and side effects was also inversely related to PCI effectiveness ($\rho = –0.277$, $p < 0.01$) and safety ($\rho = –0.275$, $p < 0.01$), while showing a positive association with cost concerns ($\rho = 0.334$, $p < 0.01$).

Table 2: Spearman's rank correlations between participants' attitudes toward PCI

Item	1	2	3	4	5	6	7
1. PCI effectiveness in treating heart attacks	1.000	.533**	.550**	–.262**	.314**	–.277**	–.186
2. Confidence in undergoing PCI	.533**	1.000	.586**	–.199*	.379**	–.234*	.093
3. Perception of PCI safety	.550**	.586**	1.000	–.168	.311**	–.275**	–.099
4. Preference for medication over PCI	–.262**	–.199*	–.168	1.000	–.115	.385**	.026
5. Trust in medical professionals	.314**	.379**	.311**	–.115	1.000	–.237*	–.015
6. Concern about PCI risks/side effects	–.277**	–.234*	–.275**	.385**	–.237*	1.000	.334**
7. Perception of PCI cost	–.186	.093	–.099	.026	–.015	.334**	1.000

Notes.
1 = PCI is an effective way to treat heart attacks;
2 = Confidence in undergoing PCI if recommended;
3 = Perception of PCI as a safe procedure;
4 = Preference for medication over PCI if both were offered;
5 = Trust in medical professionals to recommend PCI when necessary;
6 = Concern about the risks or side effects of PCI;
7 = Perception of PCI as too expensive for most people.
**Correlation is significant at the 0.01 level (2-tailed). Correlation is significant at the 0.05 level (2-tailed).*

The gender-based comparison of participants' information and awareness of PCI (Table 3) highlights several important differences. Although males reported a higher prevalence of heart disease (86.7%) compared to females (72.7%), this difference did not reach statistical significance ($p = 0.075$). Awareness of PCI was significantly greater among males, with 95.0% having heard of the procedure compared to 79.5% of females ($p = 0.015$; OR = 4.89), underscoring a gender gap in basic awareness. Knowledge levels also varied significantly ($p < 0.001$), with males more frequently reporting "basic" or "good" knowledge, while nearly half of females (47.7%) indicated no knowledge of PCI. Sources of information differed as well ($p = 0.018$), with a greater proportion of females relying on doctors (70.5% vs. 51.7%), whereas males more often cited multiple sources, including combinations of doctors with friends or the internet. Regarding perceptions, most males identified PCI correctly as non-surgical (90.0%), while females showed lower recognition (59.1%) and higher uncertainty (27.3% reported "don't know"; $p = 0.001$). Personal or family PCI experience was significantly more common among males (88.3% vs. 72.7%, $p = 0.042$; OR = 2.84).

Table 3: Comparison of participants' information and awareness of PCI by gender

Question / Response	Male (n = 60)	Female (n = 44)	p-value	Odds Ratio (95% CI)
History of heart disease			0.075 ns	2.44
- No	8 (13.3%)	12 (27.3%)		
- Yes	52 (86.7%)	32 (72.7%)		
Heard of PCI			0.015 *	4.89
- No	3 (5.0%)	9 (20.5%)		
- Yes	57 (95.0%)	35 (79.5%)		
Knowledge level of PCI			<0.001 **	–
- None	4 (6.7%)	21 (47.7%)		
- Basic	38 (63.3%)	16 (36.4%)		
- Moderate	9 (15.0%)	6 (13.6%)		
- Good	8 (13.3%)	1 (2.3%)		
- Excellent	1 (1.7%)	0 (0.0%)		
Source of information about PCI			0.018 *	–
- None	1 (1.7%)	4 (9.1%)		
- Friends	2 (3.3%)	1 (2.3%)		
- Friends & Family	0 (0.0%)	1 (2.3%)		
- Doctor	31 (51.7%)	31 (70.5%)		
- Doctor & Family	6 (10.0%)	5 (11.4%)		
- Doctor & Friends	12 (20.0%)	0 (0.0%)		
- Doctor & Internet	7 (11.7%)	2 (4.5%)		
- Doctor, Friends & Television	1 (1.7%)	0 (0.0%)		
Opinion: PCI is…			0.001 **	–
- Surgical	3 (5.0%)	6 (13.6%)		
- Non-surgical	54 (90.0%)	26 (59.1%)		
- Don't know	3 (5.0%)	12 (27.3%)		
Personal or family PCI experience			0.042 *	2.84
- No	7 (11.7%)	12 (27.3%)		
- Yes	53 (88.3%)	32 (72.7%)		
Satisfaction with PCI (if experienced)			0.224 ns	–
- Very dissatisfied	1 (1.7%)	2 (4.5%)		
- Dissatisfied	2 (3.3%)	6 (13.6%)		
- Neutral	18 (30.0%)	15 (34.1%)		
- Satisfied	35 (58.3%)	19 (43.2%)		
- Very satisfied	4 (6.7%)	2 (4.5%)		
Accessibility of PCI			0.83 ns	–
- Not accessible	1 (1.7%)	3 (6.8%)		
- Somewhat accessible	9 (15.0%)	13 (29.5%)		
- Accessible	48 (80.0%)	28 (63.6%)		
- Very accessible	2 (3.3%)	0 (0.0%)		

Chi-squared test was performed for statistical analyses.
ns= non-significant ($p>0.05$); * = significant ($p<0.05$); **= significant ($p<0.01$)
Odd ratio (Female/Male) = risk exposure (1 female /n Male)

The age-based comparison of participants' information and awareness of PCI (Table 4) reveals several noteworthy patterns. Although the prevalence of heart disease was higher among older groups (>60 years: 83.8%; 46–60 years: 80.8%) compared to younger participants (30–45 years: 60.0%), the difference was not statistically significant ($p = 0.203$). Awareness of PCI was generally high across all ages, though younger participants (30–45 years) had the lowest awareness (70.0% vs. >88% in older groups), with a non-significant difference ($p = 0.088$). Knowledge of PCI, however, showed a significant association with age ($p = 0.050$); younger participants reported higher proportions of "good" (20.0%) and "excellent" (10.0%) knowledge, whereas older groups more often reported "basic" or "none." Similarly, sources of information differed significantly by age ($p = 0.022$). While doctors were the most common source across all categories, younger respondents reported more varied sources (e.g., family, television), whereas middle-aged and older adults relied more consistently on physicians. Perceptions of PCI (surgical vs. non-surgical) and prior personal/family experience with PCI did not differ significantly across age groups ($p > 0.05$). Satisfaction with PCI outcomes was high in all age groups, with the majority reporting "satisfied" or "very satisfied" ($p = 0.771$). Notably, accessibility perceptions

varied significantly (p = 0.039), with older participants more likely to report PCI as "accessible," while younger groups included more responses of "not accessible" or "somewhat accessible."

Table 4: Comparison of participants' information and awareness of PCI by age group

Question / Response	30–45 yrs (n=10)	46–60 yrs (n=26)	>60 yrs (n=68)	p-value
History of heart disease				0.203 ns
- No	4 (40.0%)	5 (19.4%)	11 (16.2%)	
- Yes	6 (60.0%)	21 (80.8%)	57 (83.8%)	
Heard of PCI				0.088 ns
- No	3 (30.0%)	1 (3.8%)	8 (11.8%)	
- Yes	7 (70.0%)	25 (96.2%)	60 (88.2%)	
Knowledge of PCI				0.050 *
- None	2 (20.0%)	6 (23.1%)	17 (25.0%)	
- Basic	4 (40.0%)	14 (53.8%)	36 (52.9%)	
- Moderate	1 (10.0%)	2 (7.7%)	12 (17.6%)	
- Good	2 (20.0%)	4 (15.4%)	3 (4.4%)	
- Excellent	1 (10.0%)	0 (0.0%)	0 (0.0%)	
Source of PCI information				0.022 *
- None	1 (10.0%)	0 (0.0%)	4 (5.9%)	
- Friends	0 (0.0%)	1 (3.8%)	2 (2.9%)	
- Friends & Family	1 (10.0%)	0 (0.0%)	0 (0.0%)	
- Doctor	6 (60.0%)	17 (65.4%)	39 (57.4%)	
- Doctor & Family	1 (10.0%)	1 (3.8%)	9 (13.2%)	
- Doctor & Friends	0 (0.0%)	5 (19.2%)	7 (10.3%)	
- Doctor & Internet	0 (0.0%)	2 (7.7%)	7 (10.3%)	
- Doctor, Friends & Television	1 (10.0%)	0 (0.0%)	0 (0.0%)	
Opinion: PCI is…				0.082 ns
- Surgical	0 (0.0%)	5 (19.2%)	4 (5.9%)	
- Non-surgical	9 (90.0%)	20 (76.9%)	51 (75.0%)	
- Don't know	1 (10.0%)	1 (3.8%)	13 (19.1%)	
Personal/family PCI experience				0.386 ns
- No	3 (30.0%)	6 (23.1%)	10 (14.7%)	
- Yes	7 (70.0%)	20 (76.9%)	58 (85.3%)	
Satisfaction with PCI (if experienced)				0.771 ns
- Very dissatisfied	0 (0.0%)	1 (3.8%)	2 (2.9%)	
- Dissatisfied	1 (10.0%)	3 (11.5%)	4 (5.9%)	
- Neutral	4 (40.0%)	10 (38.5%)	19 (27.9%)	
- Satisfied	4 (40.0%)	12 (46.2%)	38 (55.9%)	
- Very satisfied	1 (10.0%)	0 (0.0%)	5 (7.4%)	
Accessibility of PCI in the area				0.039 *
- Not accessible	2 (20.0%)	0 (0.0%)	2 (2.9%)	
- Somewhat accessible	2 (20.0%)	7 (26.9%)	13 (19.1%)	
- Accessible	5 (50.0%)	19 (73.1%)	52 (76.5%)	
- Very accessible	1 (10.0%)	0 (0.0%)	1 (1.5%)	

Chi-squared test was performed for statistical analyses.
ns= non-significant (p>0.05); * = significant (p<0.05); **= significant (p<0.01)

Table 5 highlights notable variations in awareness and perceptions of PCI according to education level. Participants with no formal education were more likely to have a history of heart disease (87.5%) compared to those with secondary (63.2%) or postgraduate education (0%), with a significant association observed (p = 0.041). Awareness of PCI was high across all education levels, though not statistically significant (p = 0.275). Knowledge of PCI, however, showed a strong gradient (p < 0.001), with nearly half of the uneducated reporting no knowledge, while those with higher education (university and postgraduate) predominantly reported good to excellent knowledge. Sources of information also varied significantly (p = 0.001); lower-educated participants mainly relied on doctors, whereas those with secondary or university education drew on more diverse sources, including the internet and media. Perceptions of PCI differed significantly by education (p = 0.015), with uncertainty ("don't know") most common among the uneducated (29.2%) compared to none among university and postgraduate participants. In contrast, personal or family experience with PCI, satisfaction with care, and perceived accessibility did not differ significantly across groups (p > 0.05).

Table 5. Comparison of participants' information and awareness of PCI by education level

Question / Response	No education (n=48)	Primary (n=26)	Secondary (n=19)	University (n=10)	Post-graduate (n=1)	p-value
History of heart disease						0.041 *
- No	6 (12.5%)	5 (19.2%)	7 (36.8%)	1 (10.0%)	1 (100.0%)	
- Yes	42 (87.5%)	21 (80.8%)	12 (63.2%)	9 (90.0%)	0 (0.0%)	
Heard of PCI						0.275 ns
- No	8 (16.7%)	0 (0.0%)	3 (15.8%)	1 (10.0%)	0 (0.0%)	
- Yes	40 (83.3%)	26 (100.0%)	16 (84.2%)	9 (90.0%)	1 (100.0%)	
Knowledge of PCI						<0.001 **
- None	23 (47.9%)	1 (3.8%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	
- Basic	23 (47.9%)	22 (84.6%)	7 (36.8%)	2 (20.0%)	0 (0.0%)	
- Moderate	2 (4.2%)	2 (7.7%)	9 (47.4%)	2 (20.0%)	0 (0.0%)	
- Good	0 (0.0%)	1 (3.8%)	2 (10.5%)	6 (60.0%)	0 (0.0%)	
- Excellent	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	
Source of PCI information						0.001 **
- None	4 (8.3%)	0 (0.0%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	
- Friends	2 (4.2%)	1 (3.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
- Friends & Family	0 (0.0%)	0 (0.0%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	
- Doctor	37 (77.1%)	16 (61.5%)	6 (31.6%)	2 (20.0%)	1 (100.0%)	
- Doctor & Family	3 (6.3%)	4 (15.4%)	4 (21.1%)	0 (0.0%)	0 (0.0%)	
- Doctor & Friends	2 (4.2%)	4 (15.4%)	2 (10.5%)	4 (40.0%)	0 (0.0%)	
- Doctor & Internet	0 (0.0%)	1 (3.8%)	5 (26.3%)	3 (30.0%)	0 (0.0%)	
- Doctor, Friends & Television	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (10.0%)	0 (0.0%)	
Opinion: PCI is…						0.015 *
- Surgical	4 (8.3%)	4 (15.4%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	
- Non-surgical	30 (62.5%)	22 (84.6%)	17 (89.5%)	10 (100.0%)	1 (100.0%)	
- Don't know	14 (29.2%)	0 (0.0%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	
Personal/family PCI experience						0.938 ns
- No	8 (16.7%)	6 (23.1%)	3 (15.8%)	2 (20.0%)	0 (0.0%)	
- Yes	40 (83.3%)	20 (76.9%)	16 (84.2%)	8 (80.0%)	1 (100.0%)	
Satisfaction with PCI (if experienced)						0.361 ns
- Very dissatisfied	3 (6.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
- Dissatisfied	3 (6.3%)	3 (11.5%)	2 (10.5%)	0 (0.0%)	0 (0.0%)	
- Neutral	14 (29.2%)	13 (50.0%)	3 (15.8%)	3 (30.0%)	0 (0.0%)	
- Satisfied	24 (50.0%)	8 (30.8%)	14 (73.7%)	7 (70.0%)	1 (100.0%)	
- Very satisfied	4 (8.3%)	2 (7.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Accessibility of PCI in the area						0.435 ns
- Not accessible	2 (4.2%)	0 (0.0%)	2 (10.5%)	0 (0.0%)	0 (0.0%)	
- Somewhat accessible	12 (25.0%)	6 (23.1%)	4 (21.1%)	0 (0.0%)	0 (0.0%)	
- Accessible	34 (70.8%)	19 (73.1%)	13 (68.4%)	9 (90.0%)	1 (100.0%)	
- Very accessible	0 (0.0%)	1 (3.8%)	0 (0.0%)	1 (10.0%)	0 (0.0%)	

Chi-squared test was performed for statistical analyses.
ns= non-significant (p>0.05); * = significant (p<0.05); **= significant (p<0.01)

DISCUSSION

PCI has long been indicated in stable coronary artery disease for symptom relief and perceived enhancement of quality of life[1]. However, advancements have been made into the aspect of shared decision-making, leaving most patients largely uninformed about the real benefits and limitations of PCI[2]. Qualitative evidence further shows that patients often perceive PCI as life-saving treatment, underscoring cultural and contextual

dependency on the authority of medicine and pre-operative education[3]. Large randomized controlled trials shaped the modern understanding of outcomes of PCI. The COURAGE trial stated that PCI did not prolong life or preclude myocardial infarction from occurring when compared with optimal medical therapy[4], and the ISCHEMIA confirmed the same with regard to those having moderate to severe ischemia[5]. Above these, hope for PCI remains too optimistic, with patients exaggerating benefits and minimizing doubts[6]. The ORBITA trial has found that PCI did not substantially alleviate angina when compared with a placebo procedure[7]; consequently, evidence has consistently proven the limited role of PCI as a first-line treatment in stable CAD[8]. The element of patient education and health literacy is crucial. Patients' affective learning needs and self-efficacy have been demonstrated to influence PCI outcomes[9], since revascularization guidelines now strongly highlight the place of patient wishes in management decisions[10]. Beyond stable CAD, comparing PCI with CABG continuously influences practice. Large-scale studies, including those on everolimus-eluting stents against CABG[11], meta-analytical studies of left main disease[12], and investigations on patient and cardiologist perceptions[13], draw attention to the existence of persistent uncertainty in approaches. Long-term results from the SYNTAX study further gave more weight to CABG for complex multivessel disease but also confirmed growth in the role of PCI for selected subgroups[14]. PCI has been seeing rapid worldwide expansion, with Asia and Europe at its epicenter, but problems have persisted in guaranteeing high-quality care. The cardiovascular intervention scene has changed significantly in China with a surge in access and practice[15], while European data between 1992 and 2003 witnessed an explosive growth of PCI[16]. The ten-year update of the China PEACE study also emphasized a dramatic growth in catheterization and PCI use, underscoring serious issues around quality, equity, and distributive justice[17]. Psychological distress is yet another key element affecting PCI. Anxiety and depression brought into the surgical period aggravate intra-operative outcomes such as hypertension and post-operative pain[18]. Early psychological intervention and educational programs fostered recovery[19], while structured pre-operative programs increased patient confidence and eased distress[20]. More recent evidence has shown that tailored education reduces postoperative anxiety and pain following open-heart surgery[21], and similar enhanced educational initiatives have been advocated in other medical areas such as colonoscopy preparation[22] and generally in surgical care[23]. In cardiac surgery, pre-operative education is an essential element of patient care, with studies supporting its role in improving psychological outcomes and recovery[24]. From a qualitative perspective, patients often express the desire to be informed about risks, what to expect during recovery, and the potential outcomes after PCI, indicating that patient satisfaction is strongly linked to quality preoperative education[25]. Cultural differences, indeed, shape perceptions of PCI, with the field of cultural competence in healthcare delivery now being institutionally recognized as fundamental for ensuring equity in care and patient-centered communication[26].

CONCLUSION

There was a high level of trust in clinicians, and PCI acquired mostly positive connotations. But significant gaps in awareness and knowledge remain, especially among women and among lower-education groups. Tailored educational approaches that consider cultural issues along with shared decision-making could promote understanding of benefits, risks, and alternatives, while alleviating their concerns about cost and side effects.

REFERENCES

1. Weintraub WS, Spertus JA, Kolm P, et al. Effect of PCI on quality of life in patients with stable coronary disease. N Engl J Med. 2008;359:677-87.
2. Coylewright M, Shepel K, LeBlanc A, et al. Shared decision making in patients with stable coronary artery disease: PCI choice. PLoS One. 2012;7(11):e49827.
3. Zhuo Q, Liang H, Bai Y, et al. Perceptions of patients undergoing percutaneous coronary intervention on pre-operative education in China: a qualitative study. Health Expect. 2021;24(1):121-30.
4. Boden WE, O'Rourke RA, Teo KK, et al. Optimal medical therapy with or without PCI for stable coronary disease. N Engl J Med. 2007;356(15):1503-16.
5. Maron DJ, Hochman JS, O'Brien SM, et al. Initial invasive vs conservative strategies for stable ischemic heart disease: the ISCHEMIA trial. N Engl J Med. 2020;382(15):1395-407.
6. Ingle MP, Lammons W, Guigli R, et al. Patient perspectives on the benefits and risks of percutaneous coronary interventions: a qualitative study. Patient Prefer Adherence. 2021;15:721-8.
7. Al-Lamee R, Thompson D, Dehbi HM, et al. Percutaneous coronary intervention in stable angina (ORBITA): a double-blind, randomized controlled trial. Lancet. 2018;391(10115):31-40.
8. Rothberg MB, Sivalingam SK, Kleppel R, Schweiger M, Hu B, Sepucha KR. Informed decision making for PCI for stable coronary disease. JAMA Intern Med. 2015;175(7):1199-206.
9. Salgado R, Paulo N, Zufferey A, Ortoleva Bucher C. Patient's learning needs and self-efficacy level after percutaneous coronary intervention: a descriptive study. J Clin Nurs. 2020;29(15-16):2935-45.
10. Lawton JS, Tamis-Holland JE, Bangalore S, et al. 2021 ACC/AHA/SCAI guideline for coronary artery revascularization. Circulation. 2022;145:e18-e114.

11. 1Bangalore S, Guo Y, Samadashvili Z, Blecker S, Xu J, Hannan EL. Everolimus-eluting stents or bypass surgery for multivessel Coronary Disease. N Engl J Med. 2015; 372(13): 1213-1222.
12. Khan AR, Golwala H, Tripathi A, et al. Meta-analysis of percutaneous coronary intervention versus coronary artery bypass grafting in left main coronary artery disease. Am J Cardiol. 2017; 119(12): 1949-1956.
13. 3Rothberg MB, Sivalingam SK, Ashraf J, et al. Patients' and cardiologists' perceptions of the benefits of percutaneous coronary intervention for stable Coronary Disease. Ann Intern Med. 2010; 153(5): 307-313.
14. Thuijs DJFM, Kappetein AP, Serruys PW, et al. Percutaneous coronary intervention versus coronary artery bypass grafting in patients with three-vessel or left main coronary artery disease: 10-year follow-up of the multicentre randomised controlled SYNTAX trial. Lancet. 2019; 394(10206): 1325-1334.
15. Gao R. Evolution and future perspectives for cardiovascular interventions in China. EuroIntervention. 2012; 8(7): 773-778.
16. Cook S, Togni M, Walpoth N, et al. Percutaneous coronary interventions in Europe 1992–2003. EuroIntervention. 2006; 1(4): 374-379.
17. Zheng X, Curtis JP, Hu S, et al. Coronary catheterization and percutaneous coronary intervention in China: 10-year results from the China PEACE-retrospective CathPCI study. JAMA Intern Med. 2016; 176(4): 512-521.
18. Peng S, Ying B, Chen Y, Sun X. Effects of massage on the anxiety of patients receiving percutaneous coronary intervention. Psychiatr Danub. 2015; 27(1): 44-49.
19. Anderson EA. Preoperative preparation for cardiac surgery facilitates recovery, reduces psychological distress, and reduces the incidence of acute postoperative hypertension. J Consult Clin Psychol. 1987; 55(4): 513-520.
20. Kruzik N. Benefits of preoperative education for adult elective surgery patients. Aorn J. 2009; 90(3): 381-387.
21. Ertürk EB, Ünlü H. Effects of pre-operative individualized education on anxiety and pain severity in patients following open-heart surgery. Int J Health sci (Qassim). 2018; 12(4): 26-34.
22. Liu Z, Zhang MM, Li YY, Li LX, Li YQ. Enhanced education for bowel preparation before colonoscopy: a state-of-the-art review. J Dig Dis. 2017; 18(2): 84-91.
23. Ronco M, Iona L, Fabbro C, Bulfone G, Palese A. Patient education outcomes in surgery: a systematic review from 2004 to 2010. Int J Evid Based Healthc. 2012; 10(4): 309-323.
24. Shuldham CM. Pre-operative education for the patient having coronary artery bypass surgery. Patient Educ Couns. 2001; 43(2): 129-137.
25. Ayton DR, Barker AL, Peeters GMEE, et al. Exploring patient-reported outcomes following percutaneous coronary intervention: a qualitative study. Health Expect. 2018; 21(2): 457-465.
26. Brottman MR, Char DM, Hattori RA, Heeb R, Taff SD. Toward cultural competency in health care: a scoping review of the diversity and inclusion education literature. Acad Med. 2020; 95(5): 803-813.