

Person-Centered Care in a Tertiary Hospital Through Patient's Eyes: A Cross-Sectional Study

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Background: The current trend in healthcare systems around the world is moving towards a person (or patient)-centered care (PCC) model. While some healthcare organizations have only recently embraced the PCC approach, there is no evidence of person-centered care in Saudi hospitals. This study aimed to assess patients' perspectives on the climate of person-centered care and its associated factors in a tertiary hospital in Saudi Arabia.

Methods: A cross-sectional study design was conducted in 16 inpatient departments at a tertiary hospital in Riyadh, Saudi Arabia. The validated version of the Person-centered Climate Questionnaire-Patient (PCQ-P) was distributed to 300 adult patients admitted to the hospital for more than 48 hours. The patients were interviewed face-to-face, using the PCQ-P. Descriptive and inferential statistical analysis were performed using SPSS (version 22; IBM, NY, USA).

Results: A total of 300 questionnaires were completed. More than half (53%) were females; 39.7% aged 21–40 years; 72.7% married; 49% hold a high school diploma; and 67.4% unemployed. For route of admission into hospital, 39.8% of the respondents were admitted as elective or outpatient appointments, and 45% had been admitted for less than a week. Most patients (84.3%) reported that they preferred to be treated in a governmental hospital. Inpatients' overall mean PCQ-P score was 73 ± 9.988 out of 85. Results suggested significant associations between patient characteristics and their perspectives on person-centered care, such as age ($P=0.005$), gender ($P<0.001$), nationality ($P=0.026$), area of residency ($P=0.001$), route to admission ($P=0.002$), length of stay ($P=0.003$), and hospital preference ($P=0.010$).

Conclusion: Overall, patients' perspective on person-centered care seems positive. Patient and hospital characteristics could play an important role in shaping patients' perceptions of the climate of person-centered care domains.

Keywords: person-centered care, patients' perspective, hospital, PCQ-P – Arabic version

Background

Many healthcare systems have gradually shifted toward person-centered care approach. In the report entitled “Crossing the quality chasm”, the Institute of Medicine (IOM) drew up six proposals reinforcing the notion that healthcare should be safe, effective, person-centered, timely, efficient, and equitable.¹ Recently, McCormack et al proposed the following definition:

Person-centeredness is an approach to practice established through the formation and fostering of healthful relationships between all care providers, service users and others significant to them in their lives. It is underpinned the values of respect for persons (personhood), individual right to self-determination, mutual respect and understanding. It

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is enabled by cultures of empowerment that foster continuous approaches to practice development.²

This definition focuses on the importance of relationships that are built on mutual respect and understanding between the patients, their family members and healthcare professionals. The term “patient-centered care” is often used interchangeably with the term “person-centered care” in the literature.³

Ekman et al highlighted that term “patient” is mostly used as a passive and weak receiver of care, while the term “person” is a core partner that participate in the team providing the care.⁴ In addition, person-centered care is different than patient-centered care in considering the whole person not only their medical conditions as a patient, and allowing the person to play active role by involving in healthcare process and decision making while the concept of “patient” limiting the person to more inactive role.^{5,6} Furthermore, the term “person” involves patients, their families and health care staff as equal partners in planning and developing the best way of providing healthcare.

In summary, the PCC model differs from the traditional biomedical/healthcare model in its goal of involving patients in the decision-making process and taking the responsibility for their decisions under the healthcare provider’s supervision.⁷ The traditional healthcare model focuses mainly on the disease, and the healthcare provider’s key role in making all relevant and necessary clinical decisions to manage and cure the disease through different treatment options and interventions.⁷

Several studies have attempted to identify the benefits of applying the PCC model in healthcare. In a study involving hip or knee replacement patients, those who underwent surgery within the patient and family-centered care program, had a high level of patient satisfaction and functional status, a low infection rate, and a shorter length of hospital stay.⁸ Other studies have also reported a significant relationship between PCC and decreased mortality, emergency return visits, and medication errors.^{9,10} A recent study in a psychosis care setting resulted in increased patient satisfaction post a PCC intervention for patients with schizophrenia spectrum disorders.¹¹

The available evidence supports the positive impact of PCC on health outcomes.^{12,13} Moreover, several studies have shown that person-centered approaches can increase patient-doctor satisfaction, engagement, task orientation, reduce anxiety, and improve quality of life. There is also some evidence to suggest that PCC is highly efficient, resulting in fewer diagnostic tests and unnecessary referrals.¹⁴

The common core values of PCC are respect for patients’ values and preferences, coordination and integration of care, emotional support, physical comfort, information, communication, health education, continuity and transition, the involvement of family and friends, and access to care.^{7,9,15} A survey of patient preferences found that patients rank communication, shared decision-making, and health promotion as their most essential needs.⁷ Another recent qualitative study identified three necessities that patients’ needs during cancer treatment: (1) psychosocial and supportive care needs, (2) information needs, such as, education, information on complementary therapy and financial cost and support and (3) quality of information delivery where patient expressed their needs for more time from professionals and simple language.¹⁶

In Saudi Arabia, the healthcare system allows patients free access to government-provided healthcare services,¹⁷ and the quality of healthcare at all levels has markedly improved in recent years. Nevertheless, concerns about the quality of care and patient safety are increasing.¹⁸ In other words, it remains a challenge for Saudi health organizations to obtain patients’ views on the quality of care and the extent of their involvement. There is also a general tendency towards depicting view patients as passive receivers of care rather than being in a partnership with the healthcare providers, and sharing their healthcare choices and plans.¹⁹ A study conducted in a governmental hospital in Saudi Arabia revealed that 63.4% of participants were unaware of their right to be kept fully informed of their diagnosis and treatment plan.¹⁷

It seems that the health system in Saudi Arabia was captured as a resource and staff centric rather than patient or person centric. However, the Ministry of Health (MoH) has identified patients involvement and views issue as one of the major challenges that need to be undertaken in the future [20 February].²⁰ Consequently, Saudi Arabia proposed transformational goals for the vision 2030 that are committed to: improve health and quality of life, improve healthcare and accountability of healthcare organizations and staff to deliver care that is safe, effective, patient-centered, timely, and equitable; and improve value of care by containing costs and improving outcomes.²¹

While the PCC approach has been widely adopted across different healthcare settings worldwide, it is still relatively new to some health organizations in Saudi Arabia, and there have been few studies to measure PCC from patient’s perspective.^{22,23} Therefore, it is vital to evaluate and promote a person-centered approach that

help improve health outcomes and reduce care costs in Saudi hospitals. Thus, the aims of this study were to assess patients' perspectives the person-centered care climate in a Saudi tertiary hospital, and identify any significant associations between their perspectives and characteristics.

Methods

Study Design and Setting

This cross-sectional study was conducted at a tertiary hospital in Riyadh, Saudi Arabia. The sample size was calculated using G* power 3.0 software.²⁴ Using a power level of 0.80, an alpha level of 0.05, and with the medium effect size of 0.30 for a two-tailed independent *t*-test, the minimum estimated sample size was 134. The sample size was then increased to 300 participants to ensure that a large sample is obtained providing more valid and reliable findings. The inclusion criteria for participants were adult patients admitted to the hospital for more than 48 hours to in one of the 16 inpatient departments, including General Surgery; Medical and Surgical Cardiology; Urology; Ear, Nose and, Throat; Gynecology; Hematology, and Internal Medicine over a seven month period in 2017. All patients were voluntarily willing to participate in the study. Pediatric patients and patients deemed unstable or unconscious were excluded.

Data Collection

The PCQ-P, which was first introduced by researchers in Sweden to measure patients' perspectives on the care environment in a healthcare setting, comprises 17 items, covering three dimensions of the person-centered care climate: Safety, Everydayness, and Hospitality.²⁵ The PCQ-P was translated into English and validated by Australian study.²⁵ The Cronbach's alpha value for the original Swedish version was 0.93 on total scale, with values of 0.94, 0.82 and 0.64 for the three subscales of safety, everydayness, and hospitality, respectively.²⁶ For the purpose of our study, using forward-backward method, English version of PCQ-P was translated from English into Arabic by a professional translator and modified to ensure reliability and clarity based on feedback from a small pilot study of 20 participants. Following the pilot study, we reviewed the content of the PCQ-P to ensure that it was appropriate for the Saudi cultural context. The original tool used in this research was translated previously to different languages using the same method.²⁷ Unlike the original questionnaire, which uses a 6-point Likert scale,

a 5-point scale, ranging from 1 (No, I disagree completely) to 5 (Yes, I agree completely) was opted for. Total PCC climate scores range from 17, indicating a not very person-centered climate, to 85, a very person-centered climate.

A trained nurse, who was not working at any of the 16 different wards mentioned above, conducted face-to-face interviews with a proportional sample of patients meeting the inclusion criteria. During the interviews, participants were asked the questions from the Person-Centered Climate Questionnaire – Patient (PCQ-P) version. Data related to respondents' characteristics, including age, gender, marital status, health insurance status, education level, occupation, income, nationality, length of hospital stay, route of hospital admission, area of residency and treatment preferences, were added to the PCQ-P questionnaire, and collected during interviews.

Statistical Analysis

All statistical analyses were performed using SPSS (version 22; IBM, NY, USA). Data were summarized using mean $\pm$ SD and/or frequencies and percentages, as appropriate. Furthermore, *t*-tests and analysis of variance (ANOVA) were used to compare the means between various groups. Univariate and multivariate regression analyses were used to identify significant independent factors associated with PCQ-P score. The means of Safety, Everydayness, Hospitality and Overall scores were used to define cut-off points. The significant level was set after applying the Holm-Bonferroni correction at $P < 0.05$. Effect size was calculated to quantify the difference between two groups.²⁸ Finally, regression analyses were performed to identify the significant predictors of person-centred care domains.

Results

Respondents' Characteristics

A total of 300 questionnaires were completed. More than half of the respondents (53%) were females; 39.7% aged 21–40 years; 72.7% married; 49% had attained up to a high school level of education; and 67.4% unemployed. One-third (29.7%) of respondents reported that they had no income, approximately one-fourth (24.7%) earned more than 10,000 SAR per month. Most participants (96.7%) were of Saudi nationality; and 60.7% lived outside Riyadh. The proportion of participants with no health insurance was 85.3%. As for route of admission into hospital, 39.8% of respondents were admitted as elective or outpatient

appointments, and 45% had been admitted for less than a week. Most patients (84.3%) reported that they preferred to be treated in a governmental hospital (Table 1).

Person-Centered Care Climate

The overall mean score for the PCQ-P was 73 ± 9.988 out of 85, indicating that the participants in this study perceived their healthcare environments as a highly person-centered climate of care. The highest two mean scores for the PCQ-P were achieved by item 3, “A place where I feel safe” (4.95 ± 0.39 SD), and item 9, “A place that is neat and clean” (4.90 ± 0.54 SD); both of which are related to Safety. The item with the lowest mean score was item 11, “A place that has something nice to look at (eg, views, or artwork, etc.)” (2.51 ± 1.82 SD) pertaining to Everydayness (see Table 2).

For Hospitality, the highest two mean scores were achieved by item 1, “A place where the staff are knowledgeable” (4.89 ± 0.59 SD), and item 4, “A place where I feel welcome” (4.89 ± 0.54 SD). However, patients positively agreed with all of the Hospitality domain items; percentage scores ranged from 77.7% to 96%, indicating that patients perceived a good climate of hospitality in the hospital. As mentioned earlier, the statement receiving the highest mean score in the domain of Safety – and the PCQ-P overall – was item 3, while, the lowest mean score in the Safety domain was item 10, “A place where the staff seem to have time for patients,, (4.36 ± 1.38 SD). The percentage scores in this domain ranged from 81% to 98%, indicating a very high perception of a climate of safety in the hospital. The highest mean score in the domain of Everydayness was achieved by item 12, “A place that feels homely” (3.96 ± 1.67 SD); whereas, the lowest scoring item in this domain – and in the PCQ-P overall – was item 11. Percentage scores of agreements in this domain ranged from 32.4% to 70.5%, revealing a low patient perception of a climate of everydayness. Table 3 shows more details about correlation coefficient between PCC and respondents’ characteristics.

Predictors of and Factors Associated with the Climate of Person-Centered Care

Associations between the mean overall PCQ-P scores, Safety, Hospitality, and Everydayness, and independent variables were analyzed by t-tests and ANOVA and presented in Table 4. The overall PCQ-P scale had a maximum score of 85, divided between Hospitality (40), Safety (25), and

Table 1 Respondents’ Characteristics

Variables	No	%
Age (years)		
≤20	20.0	6.7
21–40	119.0	39.7
41–60	102.0	34.0
≥60	59.0	19.7
Gender		
Male	141	47
Female	159	53
Nationality		
Saudi	290.0	96.7
Non-Saudi	10.0	3.3
Health insurance		
Yes	44.0	14.7
No	255.0	85.3
Marital status		
Married	218.0	72.7
Unmarried	82.0	27.3
Educational level		
Illiterate	47.0	15.7
High school and below	147.0	49.0
Bachelor	96.0	32.0
Postgraduate	10.0	3.3
Occupation		
Employed	97.0	32.6
Unemployed	201.0	67.4
Monthly income (SR)		
No income	88.0	29.7
<5000	61.0	20.6
5000–10,000	74.0	25.0
>10,000	73.0	24.7
Area of residency		
Riyadh	118.0	39.3
Outside Riyadh	182.0	60.7
Area of admission		
Emergency department	91.0	30.4
Elective case or outpatient appointment	119.0	39.8
Referral from other hospital	89.0	29.8
Duration of hospitalization (weeks)		
<1	135.0	45.0
1–2	79.0	26.3
>2	86.0	28.7
Hospital preference for treatment		
Governmental	252.0	84.3
Teaching	6.0	2.0
Private	41.0	13.7

Table 2 Patient-Centered Climate Questionnaire – Patient (PCQ-P) Version: Mean Score and Standard Deviation

PCQ-P/Item	Mean $\pm$ SD
Hospitality (Cronbach's alpha: 0.766)	
1. A place where staff are knowledgeable	4.76 $\pm$ 0.59
4. A place where I feel welcome	4.84 $\pm$ 0.52
5. A place where it is easy to talk to staff	4.56 $\pm$ 0.94
6. A place where staff take notice of what I say	4.67 $\pm$ 0.80
8. A place where staff talk to me so that I can understand	4.78 $\pm$ 0.60
15. A place where staff make extra efforts for my comfort	4.18 $\pm$ 1.33
16. A place where I can make choices (eg what to wear, eat, etc.)	4.60 $\pm$ 0.93
17. A place where I can get that "little bit extra"	4.49 $\pm$ 1.01
Safety (Cronbach's alpha: 0.690)	
2. A place where I receive the best possible care	4.61 $\pm$ 0.89
3. A place where I feel safe	4.92 $\pm$ 0.40
7. A place where staff come quickly when I need them	4.34 $\pm$ 1.13
9. A place that is neat and clean	4.86 $\pm$ 0.55
10. A place where staff seem to have time for patients	4.33 $\pm$ 1.16
Everydayness (Cronbach's alpha: 0.684)	
11. A place that has something nice to look at (eg views, artwork, etc.)	2.55 $\pm$ 1.64
12. A place that feels homely	3.89 $\pm$ 1.50
13. A place where it is possible to get unpleasant thoughts out of your head	3.67 $\pm$ 1.63
14. A place where people talk about everyday life and not just illness	2.96 $\pm$ 1.77

Everydayness (20). In terms of the overall PCQ-P, the only independent variables found to have a significant association were age (patients younger than 20 years, $P=0.005$), gender (males, $P<0.001$), nationality (Saudis, $P=0.026$), area of residency (living outside Riyadh, $P=0.001$), route of admission (referred from another hospital, $P=0.002$), length of stay (more than two weeks, $P=0.003$), and hospital preference for treatment (governmental hospitals, $P=0.010$).

The following independent variables were found to be significantly associated with the Hospitality dimension: age (41–60 years; $P<0.001$), gender (male, $P<0.001$), employment status (employed, $P=0.002$), area of residency (living outside Riyadh, $P=0.019$), and length of stay (more than two weeks, $P=0.052$). As for the Safety dimension, the following were significantly associated: age (20 years and younger, $P=0.012$), gender (male, $P=0.000$), employment status (employed, $P=0.001$), area of residency (living outside Riyadh, $P=0.000$), length of stay (more than 2 weeks, $P=0.005$), and hospital preference (governmental hospitals, $P=0.016$).

For Everydayness, significant associations were found with gender (males, $P=0.001$), area of residency (living outside Riyadh, $P=0.001$), route of admission (referred from another hospital, $P=0.002$), length of stay (more than 2 weeks, $P=0.015$), and hospital preference (governmental hospitals, $P=0.032$).

Multivariate linear regression analysis was used to identify significant predictors of PCC, both as a whole and at the level of the three subscales. Multivariate analysis showed that male perceived higher PCC than female and was significantly associated with Everydayness ($P=0.004$), while age of 41–60 was significantly associated with Hospitality ($P=0.009$). Living outside Riyadh was a significant predictor of PCC in the Hospitality dimension ($P=0.040$), and in the PCQ-P overall ($P=0.047$). Length of hospitalization: patient, who stayed more than two weeks in the hospital, was a significant predictor of all scales (Hospitality, $P=0.010$; Safety, $P<0.001$; Everydayness, $P=0.007$; overall, $P=0.001$). As for preference of hospital type for treatment, the public hospital was only significantly associated with patients' perceptions of the hospital environment as being person-centered in terms of Safety dimension and the overall PCC scale (see Table 5).

Discussion

The primary aim of this study was to assess and provide empirical evidence of patients' perceptions of the climate of person-centered care (PCC) at a tertiary care hospital in Saudi Arabia. Understanding these perceptions will, in turn, help healthcare providers and policymakers rethink the extent to which the PCC model is used in Saudi hospitals. The study also explored the relationships between inpatient characteristics and their perceptions of the climate of PCC domains. The PCC climate mainly

Table 3 Spearman's Rho Correlation Matrix of PCC Domains and Respondents' Characteristics

		Age	Sex	Nationality	Marital Status	Level of Education	Occupation	Income	Hospitality	Safety	Everydayness	Overall
Age	Correlation Coefficient	1.000	0.026	0.075	-0.259**	-0.248**	0.052	0.066	-0.090	-0.061	-0.016	-0.050
	Sig. (2-tailed)		0.653	0.192	0.000	0.000	0.374	0.257	0.122	0.290	0.780	0.393
Sex	Correlation Coefficient	0.026	1.000	-0.048	0.003	-0.200**	0.313**	-0.244**	-0.145*	-0.132*	-0.190**	-0.171**
	Sig. (2-tailed)	0.653		0.404	0.961	0.000	0.000	0.000	0.012	0.023	0.001	0.003
Nationality	Correlation Coefficient	0.075	-0.048	1.000	-0.028	0.091	-0.121*	0.009	-0.034	-0.036	-0.037	-0.085
	Sig. (2-tailed)	0.192	0.404		0.632	0.116	0.037	0.878	0.558	0.540	0.524	0.146
Marital Status	Correlation Coefficient	-0.259**	0.003	-0.028	1.000	-0.180**	0.154**	-0.250**	-0.003	-0.013	-0.028	-0.005
	Sig. (2-tailed)	0.000	0.961	0.632		0.002	0.008	0.000	0.962	0.828	0.628	0.931
Level of Education	Correlation Coefficient	-0.248**	-0.200**	0.091	-0.180**	1.000	-0.447**	0.514**	0.042	0.044	-0.046	-0.032
	Sig. (2-tailed)	0.000	0.000	0.116	0.002		0.000	0.000	0.469	0.448	0.435	0.580
Occupation	Correlation Coefficient	0.052	0.313**	-0.121*	0.154**	-0.447**	1.000	-0.545**	-0.086	-0.084	-0.086	-0.099
	Sig. (2-tailed)	0.374	0.000	0.037	0.008	0.000		0.000	0.139	0.147	0.141	0.092
Income	Correlation Coefficient	0.066	-0.244**	0.009	-0.250**	0.514**	-0.545**	1.000	0.072	0.087	-0.054	-0.008
	Sig. (2-tailed)	0.257	0.000	0.878	0.000	0.000	0.000		0.217	0.134	0.355	0.896

Hospitality	Correlation Coefficient	-0.090	-0.145*	-0.034	-0.003	0.042	-0.086	0.072	1.000	0.610**	0.430**	0.705**
	Sig. (2-tailed)	0.122	0.012	0.558	0.962	0.469	0.139	0.217		0.000	0.000	0.000
Safety	Correlation Coefficient	-0.061	-0.132*	-0.036	-0.013	0.044	-0.084	0.087	0.610**	1.000	0.439**	0.673**
	Sig. (2-tailed)	0.290	0.023	0.540	0.828	0.448	0.147	0.134	0.000		0.000	0.000
Everydayness	Correlation Coefficient	-0.016	-0.190**	-0.037	-0.028	-0.046	-0.086	-0.054	0.430**	0.439**	1.000	0.899**
	Sig. (2-tailed)	0.780	0.001	0.524	0.628	0.435	0.141	0.355	0.000	0.000		0.000
Overall	Correlation Coefficient	-0.050	-0.171**	-0.085	-0.005	-0.032	-0.099	-0.008	0.705**	0.673**	0.899**	1.000
	Sig. (2-tailed)	0.393	0.003	0.146	0.931	0.580	0.092	0.896	0.000	0.000	0.000	

Notes: **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

focuses on safety, everydayness, and hospitality. The climate of safety denotes on a safe environment that allows patients to receive medical treatment, whereas the climate of everydayness focuses on their positive thoughts about their illness or the health care setting where they are being treated. The climate of hospitality, on the other end, identifies the patients' expectations of being welcomed by healthcare professionals in a healthcare environment.²⁶

In this study, the total mean score of PCQ-P was 73 (SD 9.9) and much higher than the total mean value of 59.7 (SD 11.5) reported in a study in China.²⁹ This finding shows that most of the patients perceived the climate of care at the study hospital as highly person-centered. A high score indicates better quality of care for the patients by the health care workers in the tertiary hospital. This high level of quality care may be due to the availability of resources and better health policies implemented in Saudi Arabia. In contrast, another study in Norway reported a little higher PCQ-P mean scores of 86.5 (SD 11.4) using a 6-point Likert scale, unlike the 5-point scale selected for the current study.³⁰ This score gap may be due to the scale difference and also reveals that there is room for further improvement of person-centered care.

The respondents in our study were highly satisfied with the climate of hospitality and safety. Similarly, residents in larger nursing homes in China also had a better perception of the climate of safety.²⁹ Research shows that patients' perception is related to some factors including the availability and approachability of health care staff to care for them.³¹ Likewise, the climate of safety in any institution is associated with the skills and expertise of the available staff, their workload and the ability to identify and meet the patient's needs in a timely fashion.³²

Another unexpected finding in the present study was patients' low perception of the climate of everydayness. In contrast, a US study conducted in a long-term care setting reported high mean scores for items 12 and 13 (4.21 ± 1.67 SD, and 5.00 ± 1.45 SD, respectively).²⁵ Several personal characteristics like age, gender, occupation, area of residence, and the characteristics of health services were significantly associated with patients' perceptions of the PCC climate. Younger patients had a better perception of the overall climate of the PCC, hospitality, safety, and everydayness. This finding, however, differs from an earlier study correlating elderly patients with higher perceptions of PCC climate compared to their younger counterparts.³³ In this study, age is more likely to be associated with the PCC climate, and younger residents

Table 4 Factors Associated with Patient's Perceptions of the Climate of Person-Centered Care

Variables	Overall PCQ-P Score (Out of 85)				Hospitality Score (Out of 40)			Safety Score (Out of 25)			Everydayness Score (Out of 20)		
	Mean $\pm$ SD	P	Effect Size		Mean $\pm$ SD	P	Effect Size	Mean $\pm$ SD	P	Effect Size	Mean $\pm$ SD	P	Effect Size
Age (years)	76.89 $\pm$ 7.84	0.005			38 $\pm$ 2.82	<0.001		24.30 $\pm$ 1.97	0.012		14.42 $\pm$ 5.18	0.160	
	73.38 $\pm$ 10.54				37.46 $\pm$ 4.29			23.22 $\pm$ 3.16			12.75 $\pm$ 5.11		
	76.14 $\pm$ 8.67				38.38 $\pm$ 2.92			23.86 $\pm$ 2.94			14.00 $\pm$ 5.16		
	70.39 $\pm$ 12.84				34.98 $\pm$ 6.56			22.2 $\pm$ 3.85			12.6 $\pm$ 4.73		
Gender	76.28 $\pm$ 8.11	0.000	0.433		38.09 $\pm$ 3.70	<0.001	0.340	23.8 $\pm$ 2.49	<0.001	0.324	14.2 $\pm$ 4.84	0.001	0.381
	71.96 $\pm$ 11.84				36.6 $\pm$ 5.06			22.8 $\pm$ 3.69			12.3 $\pm$ 5.14		
Nationality	74.02 $\pm$ 10.62	0.026	0.143		37.3 $\pm$ 4.56	0.921	0.024	23.3 $\pm$ 3.25	0.921	0.036	13.3 $\pm$ 5.11	0.544	0.189
	73.00 $\pm$ 4.71				37.2 $\pm$ 3.67			23.4 $\pm$ 2.27			12.4 $\pm$ 4.40		
Health insurance:	73.65 $\pm$ 8.96	0.800	0.040		37.77 $\pm$ 3.66	0.387	0.130	23.36 $\pm$ 3.26	0.926	0.019	12.60 $\pm$ 5.08	0.360	0.138
	74.04 $\pm$ 10.73				37.23 $\pm$ 4.67			23.3 $\pm$ 3.22			13.3 $\pm$ 5.08		
Marital status	73.99 $\pm$ 10.38	0.984	0.003		37.3 $\pm$ 4.44	0.911	0.022	23.2 $\pm$ 3.30	0.764	0.063	13.3 $\pm$ 5.01	0.688	0.058
	73.96 $\pm$ 10.78				37.2 $\pm$ 4.79			23.4 $\pm$ 3.02			13.0 $\pm$ 5.29		
Educational level	72.00 $\pm$ 14.34	0.555			35.7 $\pm$ 6.40	0.077		22.7 $\pm$ 3.82	0.541		13.7 $\pm$ 5.58	0.899	
	74.55 $\pm$ 9.46				37.5 $\pm$ 4.27			23.4 $\pm$ 3.02			13.2 $\pm$ 5.04		
	74.12 $\pm$ 9.90				37.71 $\pm$ 3.77			23.3 $\pm$ 3.24			13.0 $\pm$ 4.98		
	73.67 $\pm$ 8.83				37.0 $\pm$ 3.55			23.4 $\pm$ 2.95			13.5 $\pm$ 4.66		
Occupation	75.45 $\pm$ 9.29	0.070	0.223		38.04 $\pm$ 3.60	0.002	0.257	23.8 $\pm$ 2.46	0.001	0.268	13.7 $\pm$ 5.22	0.258	0.156
	73.19 $\pm$ 10.95				36.95 $\pm$ 4.89			23.0 $\pm$ 3.52			12.9 $\pm$ 5.01		
Income (SR)	73.23 $\pm$ 12.41	0.638			36.7 $\pm$ 5.54	0.234		22.9 $\pm$ 3.71	0.429		13.3 $\pm$ 5.25	0.436	
	73.47 $\pm$ 10.39				37.0 $\pm$ 4.31			23.2 $\pm$ 3.40			13.4 $\pm$ 5.45		
	75.26 $\pm$ 8.88				37.6 $\pm$ 4.21			23.5 $\pm$ 2.59			13.9 $\pm$ 4.54		
	74.3 $\pm$ 9.41				38. $\pm$ 3.40			23.6 $\pm$ 3.07			12.53 $\pm$ 5.03		
Living in:	71.1 $\pm$ 11.72	0.001	0.456		36.49 $\pm$ 4.87	0.019	0.304	22.68 $\pm$ 3.78	<0.001	0.329	12.03 $\pm$ 5.07	0.001	0.394
	75.85 $\pm$ 9.11				37.86 $\pm$ 4.22			23.75 $\pm$ 2.73			14.0 $\pm$ 4.94		

Route of hospital admission	Emergency department Outpatient appointment Referral from outside hospital	71.8 ± 12.29 73.1 ± 10.22 77.0 ± 7.84	0.002			22.9 ± 3.43 23.32 ± 3.53 23.70 ± 2.48	0.307			12.5 ± 5.46 12.55 ± 4.90 14.85 ± 4.56	0.002	
Duration of hospital stay (weeks)	<1 1-2 >2	71.7 ± 11.09 75.2 ± 9.93 76.3 ± 9.29	0.003			36.49 ± 5.10 37.36 ± 4.35 38.07 ± 4.05	0.065			12.36 ± 4.98 13.68 ± 5.19 14.3 ± 4.95	0.015	
Preference of treating hospital	Public hospital Teaching hospital Private hospital	74.6 ± 9.90 64.6 ± 13.74 70.5 ± 12.51	0.010			36.62 ± 4.62 37.77 ± 4.57 38.00 ± 4.24	0.052			13.5 ± 4.92 10.0 ± 5.83 11.6 ± 5.61	0.032	

were more satisfied with the person-centered care at the tertiary hospital in Saudi Arabia. While our findings contradict previous studies that overlook the relationship between age and patients' perceptions of the PCC, further research is warranted. Our study revealed that males had a better perception of the PCC climate than females, and this variation in perception might be due to their different expectations of the hospital environment and the availability of resources for care.²⁹ Another significant factor associated with the climate of safety and hospitality was employment, but no significant relationship was observed with everydayness. This finding is consistent with previous studies on person-centered maternal care (PCMC) that showed that employed women had a better perception of the quality of care.³⁴ Patients usually miss their own homes when living in long-term care facilities, yet they can adjust to the new environment. For example, establishing relations with caregivers in nursing homes may foster a smooth transition for the residents.³⁵ Previous most early studies reported literature showed patients' literacy level reported among one of the determinants of their perception of PCC climate perceptions. However, education status was not a significant predictor of PCC in the current study. Although there was no significant association between literacy and the PCC climate, educated participants had a better perception than those with low literacy, which accords with previous studies.

Strengths and Limitations

This is the first study to assess person-centered care from the patients' perspective in Arab healthcare settings. The study methods have been enhanced in terms of sample size as well as the type and statistical analysis. However, this study has some limitations. Firstly, the cross-sectional nature of the study is to be taken into consideration, as the cause and effect relation between predictors and perception cannot be established. Secondly, participants were recruited in only a single hospital, which may restrict the generalizability of the study. Sensitivity of the topic was another limitation as participant must be examined in the context of their health needs and previous interactions with healthcare providers.

Conclusions

This study assessed patients' perception of healthcare environments in a tertiary hospital in Saudi Arabia. Notably, the climate of care in the study setting seems highly person-centered. Perceptions are also significantly

Table 5 Predictors of Patients' Perceptions of the Climate of Person-Centered Care

Variables	PCQ Scale	Univariate Analysis		P	Multivariate Analysis		P
		Unstandardized Coefficients			Unstandardized Coefficients		
		B	SE		B	SE	
Age	Overall scale	−1.120	0.711	0.116	–	–	–
	Hospitality	−0.812	0.299	0.007	−0.824	0.312	0.009
	Safety	−0.389	0.214	0.071	–	–	–
	Everydayness	−0.081	0.347	0.816	–	–	–
Gender	Overall	−0.610	0.245	0.013	−0.452	0.257	0.078
	Hospitality	−0.571	0.255	0.025	−0.451	0.264	0.088
	Safety	−0.516	0.265	0.051	−0.387	0.273	0.157
	Everydayness	−0.823	0.240	0.001	−0.723	0.248	0.004
Nationality	Overall	−0.918	0.657	0.162	–	–	–
	Hospitality	−0.388	0.658	0.555	–	–	–
	Safety	−0.594	0.659	0.367	–	–	–
	Everydayness	−0.127	0.644	0.844	–	–	–
Income	Overall	0.507	0.531	0.340	–	–	–
	Hospitality	0.466	0.226	0.040	0.501	0.262	0.057
	Safety	0.268	0.162	0.099	–	–	–
	Everydayness	−0.194	0.258	0.452	–	–	–
Health insurance	Overall	0.401	0.333	0.228	–	–	–
	Hospitality	0.015	0.351	0.966	–	–	–
	Safety	−0.009	0.366	0.980	–	–	–
	Everydayness	−0.020	0.331	0.952	–	–	–
Marital status	Overall	0.015	0.271	0.957	–	–	–
	Hospitality	−0.094	0.277	0.733	–	–	–
	Safety	0.035	0.292	0.904	–	–	–
	Everydayness	0.006	0.264	0.983	–	–	–
Educational level	Overall	0.607	0.825	0.462	–	–	–
	Hospitality	0.627	0.351	0.075	–	–	–
	Safety	0.212	0.250	0.396	–	–	–
	Everydayness	−0.218	0.399	0.586	–	–	–
Occupation	Overall	−0.213	0.260	0.413	–	–	–
	Hospitality	−0.320	0.274	0.243	–	–	–
	Safety	−0.372	0.287	0.195	–	–	–
	Everydayness	−0.308	0.252	0.221	–	–	–

(Continued)

Table 5 (Continued).

Variables	PCQ Scale	Univariate Analysis		P	Multivariate Analysis		P
		Unstandardized Coefficients			Unstandardized Coefficients		
		B	SE		B	SE	
Area of residency	Overall	0.737	0.246	0.003	0.529	0.267	0.047
	Hospitality	0.764	0.254	0.003	0.558	0.271	0.040
	Safety	0.467	0.262	0.075	–	–	–
	Everydayness	0.693	0.242	0.004	0.444	0.261	0.089
Route of hospital admission	Overall	0.421	0.159	0.008	0.309	0.171	0.071
	Hospitality	0.385	0.164	0.019	0.277	0.176	0.116
	Safety	0.124	0.167	0.457	–	–	–
	Everydayness	0.357	0.153	0.020	0.270	0.165	0.101
Duration of hospital stay	Overall	2.365	0.708	0.001	2.473	0.715	0.001
	Hospitality	0.716	0.308	0.021	0.793	0.306	0.010
	Safety	0.704	0.217	0.001	0.778	0.219	0.000
	Everydayness	0.990	0.345	0.004	0.956	0.351	0.007
Preference of treating hospital	Overall	−0.422	0.173	0.015	−0.384	0.179	0.032
	Hospitality	−0.163	0.173	0.349	–	–	–
	Safety	−0.437	0.172	0.011	−0.417	0.176	0.018
	Everydayness	−0.231	0.172	0.179	–	–	–

associated with patients' characteristics like age, gender, employment, and length of stay. And overall, to keep the momentum of PCC approach, whether in the current setting or a similar hospital, specialists and policymakers should work closely to adopt more person-centered healthcare systems and develop new and more efficient models of care. Moreover, future research is highly recommended to evaluate the PCQ-P in different health organizations in Arab hospitals context, exploring the staff perspective on PCC and how to integrate theories into practice in different settings for better outcomes.

Implications

Use of the PCQ-P would provide further evidence on which to base improvements in the quality of the healthcare system in Saudi Arabia and other Arab similar healthcare context. It would also shift the focus to the person-centered approach; encourage more healthcare providers in Saudi Arabia and Arab similar healthcare context to adopt PCC approaches

and motivate hospital managers to integrate PCC into daily policy and practice of healthcare services.

Abbreviations

PCC, person (or patient)-centered care; PCQ-P, person-centered care climate questionnaire – patient version.

Data Sharing Statement

The datasets generated and/or analyzed during the current study are not publicly available due to the institutional rules and regulations but are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

The study proposal was reviewed by the research committee of the College of Public Health and Health Informatics for scientific approval, followed by further review by the Institutional Review Board (IRB) of King Abdullah

International Medical Research Center. The approval was granted with the reference number SP16-079. IRB approval was also obtained from the Research Ethics Committee at the study hospital (reference: NP&R/12/37). Patients meeting the inclusion criteria were asked to participate voluntarily in this study; those who verbally agreed to take part signed a written informed consent form that was kept in their file. The authors maintained and managed complete confidentiality, privacy and the freedom for participant to withdraw or stop their participation any time throughout and after the study. This study followed the recommendations of the International Conference on Harmonization for Good Clinical Practice (ICH-GCP) and in compliance with the Declaration of Helsinki.

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Author Contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that they have no competing interests.

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