Person-centered care in a tertiary hospital from patients’ eyes: Hospital-based cross-sectional study

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Abstract

Background: Healthcare systems around the world have begun to move towards a person (or patient)-centered care approach. Although this approach seems to have been newly adopted in some healthcare organizations, there is no evidence of person-centered care among hospitals in Saudi Arabia. The aims of this study were to assess patients’ perspectives on the climate of person-centered care and its associated factors in a Saudi tertiary hospital, and to examine the reliability of the Arabic version of the Person-centered Climate Questionnaire – Patient (PCQ-P) version.

Methods: Using a cross-sectional study design, the validated version of the PCQ-P was distributed to 300 adult patients admitted to hospital for more than 48 hours. Patients from 16 inpatient departments at King Faisal Specialist Hospital and Research Center, a tertiary hospital in Riyadh, Saudi Arabia, were interviewed using the PCQ-P. Descriptive and inferential statistical analysis was performed using SPSS (version 22; IBM, NY, USA).

Results: A total of 300 questionnaires were completed. Within this number of respondents, 159 (53%) were females; 119 were aged 21–40 years; 72.7% were married; 147 (49%) had attained up to a high school level of education; and (67.4%) were unemployed. Inpatients’ overall mean PCQ-P score was 73 ± 9.988 out of 85. Results suggested some 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). The Arabic version of the PCQ-P was found to be reliable (Cronbach’s α=0.840), indicating its applicability to measure the climate of person-centered care in an Arabic-speaking context.

Conclusions: Patient and hospital characteristics are important in terms of patients’ perceptions of the climate of person-centered care. The Arabic translation of the PCQ-P
Background

In the last few decades, healthcare systems have begun to focus on and move toward patient, or person-centered care [1]. In the report, ‘Crossing the quality chasm’, the Institute of Medicine made six proposals to improve healthcare; namely, that healthcare should be safe, effective, person-centered, timely, efficient, and equitable [2]. In the same context, person-centered care (PCC) has been defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions” [2]. Thus, the PCC model differs from the traditional biomedical/healthcare model because in PCC, patients should be involved in the decision-making process and maintain the responsibility of their choice with the support of the healthcare provider [3]. The traditional healthcare model focuses mainly on the disease, and the healthcare provider takes responsibility and makes decisions in the treatment process [3].

Most previous studies conducted on the subject of PCC have been more concerned with the quality of care by healthcare providers and members of the management structure, rather than with patients’ perspectives. Recently, however, several studies have emerged that attempt to identify the benefits of applying the PCC model. In a study of 1,029 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 [4]. Other studies have reported a significant relationship between PCC and decreased mortality, emergency return visits, and medication errors [5,6]. Moreover, the available evidence supports the concept of PCC in improving health outcomes for people with chronic disease in a primary care setting.
Several studies have shown that person-centered approaches can increase patient satisfaction, engagement and task orientation, reduce anxiety, and improve the quality of life. They also increase doctor satisfaction. There is also some evidence to suggest that PCC is more efficient, resulting in fewer diagnostic tests and unnecessary referrals [7].

The common core values of PCCare include 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 [3,6,8]. A survey of patient preferences found that patients rank communication, shared decision-making, and health promotion to be their most important needs [3].

In Saudi Arabia, the healthcare system seems supportive: patients have free access to government-provided healthcare services [9], 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 [10]. In particular, it remains a challenge to obtain patients’ own views about the quality of their care and their involvement in that care. Many health organizations in Saudi Arabia appear to still view patients as passive receivers of care, rather than being in a partnership with the health care providers, sharing their healthcare choices and plans [11]. A study conducted in a governmental hospital in Saudi Arabia revealed that 63.4% of participants were not aware of their right to be kept fully informed of their diagnosis and treatment plan [9].

The PCC approach that has been widely adopted elsewhere in the world still seems relatively new to some organizations in Saudi Arabia, and there have been few studies to measure PCC from the perspective of Saudi hospital patients. Thus, the aims of this study were to assess patient perspectives of the climate of PCC in a Saudi tertiary hospital, and to identify any associations between these perspectives and participants’ characteristics.
We also assessed the reliability of the Arabic-translated version of the Person-centered Climate Questionnaire—Patient (PCQ-P) version.

Methods

Study design and setting

This cross-sectional study was conducted at King Faisal Specialist Hospital and Research Center, a tertiary hospital in Riyadh, Saudi Arabia, in 2016 and 2017. A trained nurse conducted face-to-face interviews with a proportional sample of patients meeting the inclusion criteria across 16 different wards (including General Surgery; Medical and Surgical Cardiology; Urology; Ear, Nose and, Throat; Gynecology; Hematology, and Internal Medicine) over a seven month-period, to reach a sample size of 300 participants. During this interview, participants were asked the questions from the Person-centered Climate Questionnaire—Patient (PCQ-P) version. Participants were adult patients admitted to hospital for more than 48 hours to any of the 16 inpatient departments, who were willing to participate in the study. Patients who were deemed to be unstable or unconscious, and pediatric patients, were excluded from the study.

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 [12]. The PCQ-P was translated to English and validated in an Australian study [12]. The Cronbach’s alpha value of the original Swedish version was 0.93 for the entire scale, with values of 0.94, 0.82 and 0.64 for the three subscales of safety, everydayness, and hospitality, respectively [13].

We reviewed the content of the PCQ-P to make sure it was appropriate for use within a
Saudi Arabian cultural context. Using a forward-backward method, the PCQ-P was translated from English into Arabic, and modified to ensure reliability and clarity following feedback from a small pilot study of 20 participants. Unlike the original questionnaire, which uses a six-point Likert scale, we found it more appropriate to use a five-point scale, ranging from 1 (No, I disagree completely) to 5 (Yes, I agree completely). Total PCC climate scores range from 17, indicating a not very person-centered climate, to 85, indicating a very person-centered climate.

Data about 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 ± 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 independent significant 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 $P<0.05$.

Results

Respondents’ characteristics

A total of 300 questionnaires were completed. Within this number of respondents, 159 (53%) were females; 119 were aged 21–40 years; 72.7% were married; 147 (49%) had attained up to a high school level of education; and (67.4%) were unemployed. About
Almost one-third (88; 29.7%) of respondents reported that they had no income, while about received more than 10,000 SAR per month. Most of our participants (290; 96.7%) were of Saudi nationality; and 60.7% lived outside of Riyadh. The proportion of participants with no health insurance was (85.3%). Regarding the route of admission into hospital, 39.8% of respondents were admitted as elective or outpatient appointments, and 135 (45%) participants had been admitted for less than 1 week. Most (252; 84.3%) patients reported that they preferred to be treated in a governmental hospital (Table 1).

Study instrument reliability

To determine the reliability of the PCQ-P, the acceptable value of Cronbach’s alpha was set at ≥ 0.7 [14]. As shown in Table 2, the Cronbach’s alpha value of the PCQ-P as a whole scale was 0.840, indicating that the Arabic version of the PCQ-P has good internal consistency and is able to reliably measure the person-centered climate as perceived by the patient in a tertiary care hospital. The Cronbach’s alpha values of the three subscales were Hospitality, 0.766; Safety, 0.690; and Everydayness 0.684. Deleting any one item from the questionnaire would not affect the instrument’s reliability, since the Cronbach’s alphas would still be in the range of 0.81–0.84. Corrected item total correlation coefficients varied between 0.19 and 0.63. Item 3 had the smallest correlation coefficient of 0.19, which might indicate that this item did not correlate very well with the overall scale; however, deleting it would not affect the overall reliability.

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 care environments as having good 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 related to Safety. The item with the lowest mean score was item 11, “A place that has something nice to look at (e.g., views, or artwork, etc.), (2.51 ± 1.82 SD), which is related 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 items in the Hospitality domain; percentage scores ranged from 77.7–96%, indicating that patients perceived a good climate of hospitality in their hospital. As mentioned, 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 between 81% and 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); as mentioned, the lowest scoring item in this domain—and in the PCQ-P overall—was item 11. Percentage scores of agreement in this domain ranged between 32.4% and 70.5%, revealing a low patient perception of a climate of everydayness.

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 3. The overall PCQ-P scale has a maximum score of 85, divided between Hospitality (40), Safety (25), and 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 of Riyadh, P = 0.001), route of admission (referred from another hospital, P = 0.002), length of stay (more than 2 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 2 weeks, P = 0.052). In terms of 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 and logistic 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 gender was significantly associated with Everydayness (P = 0.004), and age was significantly associated with Hospitality (P = 0.009). Living outside of 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 was a significant predictor for all scales (Hospitality, P = 0.010; Safety, P < 0.001; Everydayness, P = 0.007; overall, P = 0.001). Preference of hospital type for treatment was independently associated with respondents’ perceptions of the tertiary care hospital environment as being person-centered in terms of Safety and overall (see Table 4).

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 to rethink the extent to which the PCC model is used in hospitals in Saudi Arabia, so as to improve current environment of PCC. Our study also explored the relationships between inpatient characteristics and their perceptions of the climate of person-centered care.

This study showed that most patients perceive that the climate of care at the study hospital is highly person-centered. The high PCQ-P scores for this hospital are in alignment with similar trends found among patients in the long-term care setting [12]. It is imperative to consider the PCC approach in both hospitals and long-term facilities.

One systematic review, which aimed to assess the usefulness of PCC in randomized controlled trials, found that involving patients in making decisions about their care found in 8 out of 11 studies, and improvement reached 73% [15]. Likewise, another systematic review of seven studies of job satisfaction, involving specialists providing PCC in nursing homes, indicated that PCC had some positive effects on general job satisfaction [16]. It is likely that assessment of perceptions of the PCC climate, and translating these research findings into policy and practice will not only benefit patients and their families, but will also increase staff satisfaction and clinical outcomes. However, there is a tendency for respondents to be very positive and less critical in such settings. This is called the halo effect of cognitive bias, in which our overall impression of a person or environment influences how we feel and think about real situations.

Although the patients in our study were highly satisfied with the climate of PCC in terms of Hospitality and Safety, they expressed some concerns about their perceptions of PCC in terms of Everydayness, e.g. ideas such as feeling that the hospital is a home-from-home
where they can rid unpleasant thoughts from their minds, or that it is a place where people can talk about everyday life and not just illness. On the contrary, a US study conducted in a long-term setting reported high mean score for items 12 and 13 (4.21 ± 1.67 SD, and 5.00 ± 1.45 SD, respectively) [12]. This may indicate that patient perceptions vary in different settings.

The current study found several personal characteristics, and characteristics of health services, to be significantly associated with differences in patients’ perceptions of the hospital climate of PCC. These characteristics include patient age, gender, their area of residency, route of admission to hospital, length of hospital stay, and preference for the hospital type.

The Cronbach’s alpha coefficient for the PCQ-P instrument as a whole (0.840) showed that the Arabic version of this tool has good internal consistency when used in the context of Saudi Arabian tertiary care hospital. This satisfactory level of reliability is inconsistent with the Swedish hospital study, which reported a Cronbach’s alpha value of 0.93 [13], and with a Norwegian hospital study, which reported a Cronbach’s alpha value of 0.92 [17]. In our study, Cronbach’s alpha values of the three subscales (Hospitality, 0.766; Safety, 0.690; and Everydayness, 0.684) were acceptable compared with the English version (0.96 and 0.89), respectively [18]. Comparing with the Swedish version of the PCQ-P, Cronbach’s alpha values for each of the three subscales were satisfactory (Safety, 0.94; Everydayness, 0.82; and Hospitality, 0.64) [13], and compared with the Norwegian study, the Cronbach’s alpha values were 0.81 (Safety), 0.89 (Everydayness) and 0.87 (Community) [17]. In the same context, Hesselink et al. recently conducted a systematic review to assess the psychometric properties and responsiveness of different instruments and their components to assess the culture of caring in hospitals. This review found the PCQ-P to be a suitable and reliable instrument [19].
Strengths and limitations

This study is the first to assess the reliability of the Arabic version of the Person-centered Climate Questionnaire—Patient (PCQ-P) version. One of the limitations of the current study is the findings are from one health facility and might not be generalizable all hospitals in Saudi Arabia. Future research is needed to evaluate the PCQ-P in different health organizations in Saudi Arabia to improve healthcare quality and obtain the best possible outcomes.

Conclusions

This study revealed patients’ perception of the care environments in a tertiary care hospital in Saudi Arabia. The Arabic version of the PCQ-P was found to be satisfactory and reliable to measure PCC as perceived by the patient in a tertiary care hospital. The results also supported those obtained for each of the three subscales: Hospitality, Safety, and Everydayness.

The participants in our study perceived the climate of care in the study setting to be highly person-centered. These perceptions were affected by the patients’ characteristics. To improve the overall climate of PCC, whether in the study setting or a similar hospital, the dimension of Everydayness should be improved. Specialists and policymakers should work closely together to adopt care systems in Saudi hospitals that are more person-centered, and to develop new and more efficient models of care.

Implications

The Arabic version of the PCQ-P instrument is reliable and could be used in different care settings. Use of the PCQ-P in Saudi Arabian hospitals would provide further evidence on which to base improvements to the quality of the healthcare system in Saudi Arabia. It would also increase the focus on the person-centered approach in Saudi hospitals.
List Of Abbreviations

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

Declarations

Ethicas 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. Approval was granted with the reference number SP16–079. IRB approval was also obtained from the Research Ethics Committee at King Faisal Specialist Hospital and Research Center (reference: NP&R/12/37).

Patients meeting the inclusion criteria were asked to participate 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 throughout and after the study.

Consent for publication

Not applicable.

Availability of data and materials

The data will be available upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

Nothing to declare

Authors’ contributions

KA initiated the idea of the study research and supervised the whole research process. BA
developed the study proposal, collected and analyzed the data under supervision of KA. BA drafted the manuscript and reviewed by KA. Both KA and BA reviewed the final version of the current manuscript and approved it for submission.

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Tables

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 |
| 5,000-10,000                    | 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: scores and reliability
| PCQ-P/item                                                                 | Mean ± SD | Alpha if item deleted | Correlation with total |
|---------------------------------------------------------------------------|-----------|-----------------------|------------------------|
| **Hospitality (Cronbach’s alpha: 0.766)**                                  |           |                       |                        |
| 1. A place where staff are knowledgeable                                   | 4.76 ± 0.59 | 0.83                  | 0.38                   |
| 4. A place where I feel welcome                                             | 4.84 ± 0.52 | 0.83                  | 0.43                   |
| 5. A place where it is easy to talk to staff                                | 4.56 ± 0.94 | 0.82                  | 0.51                   |
| 6. A place where staff take notice of what I say                            | 4.67 ± 0.80 | 0.82                  | 0.63                   |
| 8. A place where staff talk to me so that I can understand                 | 4.78 ± 0.60 | 0.83                  | 0.39                   |
| 15. A place where staff make extra efforts for my comfort                  | 4.18 ± 1.33 | 0.82                  | 0.57                   |
| 16. A place where I can make choices (e.g. what to wear, eat, etc.)        | 4.60 ± 0.93 | 0.84                  | 0.24                   |
| 17. A place where I can get that ‘little bit extra’                        | 4.49 ± 1.01 | 0.82                  | 0.58                   |
| **Safety (Cronbach’s alpha: 0.690)**                                       |           |                       |                        |
| 2. A place where I receive the best possible care                          | 4.61 ± 0.89 | 0.82                  | 0.58                   |
| 3. A place where I feel safe                                               | 4.92 ± 0.40 | 0.84                  | 0.19                   |
| 7. A place where staff come quickly when I need them                        | 4.34 ± 1.13 | 0.81                  | 0.67                   |
| 9. A place that is neat and clean                                          | 4.86 ± 0.55 | 0.83                  | 0.36                   |
| 10. A place where staff seem to have time for patients                      | 4.33 ± 1.16 | 0.83                  | 0.48                   |
| **Everydayness (Cronbach’s alpha: 0.684)**                                 |           |                       |                        |
| 11. A place that has something nice to look at (e.g. views, artwork, etc.) | 2.55 ± 1.64 | 0.84                  | 0.38                   |
| 12. A place that feels homely                                               | 3.89 ± 1.50 | 0.82                  | 0.56                   |
| 13. A place where it is possible to get unpleasant thoughts out of your head| 3.67 ± 1.63 | 0.82                  | 0.59                   |
| 14. A place where people talk about everyday life and not just illness      | 2.96 ± 1.77 | 0.84                  | 0.35                   |

Table 3: 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) |
|-----------|--------------------------------|-------------------------------|
|           | Mean ± SD | P  | Mean ± SD |
| Age (years) |                     |               |               |
| >20       | 76.89 ± 7.84 | **0.005** | 38 ± 2.82 |
| 21-40     | 73.38 ± 10.54 |            | 37.46 ± 4.29 |
| 41-60     | 76.14 ± 8.67  |            | 38.38 ± 2.92 |
| <61       | 70.39 ± 12.84 |            | 34.98 ± 6.56 |
| Gender    |                     |               |               |
| Male      | 76.28 ± 8.11  | **0.000** | 38.09 ± 3.70 |
| Female    | 71.96 ± 11.84 |            | 36.6 ± 5.06  |
| Nationality |                   |               |               |
| Saudi     | 74.02 ± 10.62 | **0.026** | 37.3 ± 4.56  |
| Non-Saudi | 73.00 ± 4.71  |            | 37.2 ± 3.67  |
| Health insurance: |               |               |               |
| Yes       | 73.65 ± 8.96  | 0.800 | 37.77 ± 3.66 |
| No        | 74.04 ± 10.73 |            | 37.23 ± 4.67 |
| Marital status |               |               |               |
| Married   | 73.99 ± 10.38 | 0.984 | 37.3 ± 4.44  |
| Unmarried | 73.96 ± 10.78 |            | 37.2 ± 4.79  |
| Educational level |               |               |               |
| No education | 72.00 ± 14.34 | 0.555 | 35.7 ± 6.40  |
| High school and below | 74.55 ± 9.46 |            | 37.5 ± 4.27  |
| Bachelor degree | 74.12 ± 9.90 |            | 37.71 ± 3.77 |
| Master’s or above | 73.67 ± 8.83 |            | 37.0 ± 3.55  |
| Occupation |                   |               |               |
| Employee | 75.45 ± 9.29  | 0.070 | 38.04 ± 3.60 |
| Unemployed | 73.19 ± 10.95 |            | 36.95 ± 4.89 |
| Income (SR) |                     |               |               |
| No income | 73.23 ± 12.41 | 0.638 | 36.7 ± 5.54  |
| <5000     | 74.37 ± 10.39 |            | 37.0 ± 4.31  |
| 5000-10,000 | 75.26 ± 8.88 |            | 37.6 ± 4.21  |
| >10,000   | 74.3 ± 9.41   |            | 38. ± 3.40   |
| Living in: |                   |               |               |
| Riyadh | 71.1 ± 11.72 | **0.001** | 36.49 ± 4.87 |
| Outside Riyadh | 75.85 ± 9.11 |            | 37.86 ± 4.22 |
| Route of hospital admission |               |               |               |
| Emergency department | 71.8 ± 12.29 | **0.002** | 36.40 ± 5.10 |
| Outpatient appointment | 73.1 ± 10.22 |            | 37.36 ± 4.35 |
| Referral from outside hospital | 77.0 ± 7.84 |            | 38.07 ± 4.05 |
| Duration of hospital stay (weeks) |               |               |               |
| <1       | 71.7 ± 11.09 | **0.003** | 36.62 ± 4.62 |
| 1-2      | 75.2 ± 9.93  |            | 37.77 ± 4.57 |
| >2       | 76.3 ± 9.29  |            | 38.00 ± 4.24 |
| Preference of treating hospital |               |               |               |
| Public hospital | 74.6 ± 9.90 | **0.010** | 37.5 ± 4.21  |
| Teaching hospital | 64.6 ± 13.74 |            | 35.0 ± 6.16  |
| Private hospital | 70.5 ± 12.51 |            | 36.2 ± 5.91  |

Table 4: Predictors of patients’ perceptions of the climate of person-centered care

| Variables   | PCQ scale | B   | SE   | P   |
|-------------|-----------|-----|------|-----|
| Age         | Overall   | -1.120 | 0.711 | 0.116 |
|             | Hospitality | -0.812 | 0.299 | **0.007** |
|             | Safety     | -0.389 | 0.214 | 0.071 |
|             | Everydayness | -0.081 | 0.347 | 0.816 |
| Gender      | Overall   | -0.610 | 0.245 | **0.013** |
|             | Hospitality | -0.571 | 0.255 | **0.025** |
|             | Safety     | -0.516 | 0.265 | **0.051** |
|             | Everydayness | -0.823 | 0.240 | **0.001** |
| 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 |

Univariate analysis
Unstandardized coefficients

Univariate analysis
Unstandardized coefficients

Univariate analysis
Unstandardized coefficients

Univariate analysis
Unstandardized coefficients
| Factor                      | Overall | Hospitality | Safety | Everydayness |
|-----------------------------|---------|-------------|--------|--------------|
| **Health insurance**        |         | 0.401       | 0.333  | 0.228        |
| **Marital status**          |         | -0.094      | 0.277  | 0.733        |
| **Educational level**       |         | 0.607       | 0.825  | 0.462        |
| **Occupation**              |         | -0.213      | 0.260  | 0.413        |
| **Area of residency**       |         | 0.764       | 0.254  | 0.003        |
| **Route of hospital admission** | | 0.385      | 0.164  | 0.019        |
| **Duration of hospital stay** | | 0.716      | 0.308  | 0.021        |
| **Preference of treating hospital** | | -0.163    | 0.173  | 0.349        |