

Determinants of Patient Satisfaction in Primary Healthcare: A Statistical Exploration

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Abstract

Patient satisfaction is a critical measure of healthcare quality, reflecting patients' experiences and the extent to which their needs and expectations are met. While global studies have identified various determinants of satisfaction, research in some regions, particularly in the Gulf, remains limited. This study investigates the determinants of patient satisfaction in primary healthcare settings, focusing on socio-demographic factors and dimensions of care. This study was conducted among patients receiving services at primary healthcare centers. A systematic sampling approach yielded 398 completed questionnaires. The instrument assessed six dimensions of satisfaction: interpersonal care, technical competence, accessibility, convenience, availability, and overall satisfaction. Data analysis included descriptive statistics, t-tests, ANOVA, and exploratory factor analysis, with internal consistency measured using Cronbach's alpha. The mean satisfaction score was 35.2 (SD = 6.8). Married patients and those with college degrees reported significantly higher satisfaction. Factor analysis revealed interpersonal care, accessibility, and technical competence as the most influential dimensions. Communication quality and the time spent with healthcare providers were strongly associated with satisfaction. Approximately 64.8% of participants reported high overall satisfaction. Effective communication and patient-centered interactions are key determinants of satisfaction in primary care. Addressing gaps in provider-patient communication and ensuring sufficient consultation time can enhance patient experiences. These findings emphasize the need for ongoing assessment and improvement of healthcare delivery to meet diverse patient expectations.

Keywords: *Patient Satisfaction, Healthcare, Statistical Exploration.*

Introduction

Patient satisfaction refers to the evaluation made by care recipients about whether their expectations for care have been fulfilled (Palmer et al., 1991). Contemporary perspectives on care quality focus on the extent to which healthcare services address patients' needs and expectations, encompassing both technical and interpersonal aspects of care (Campbell et al., 2000; Esch et al., 2008). Exploring patient satisfaction serves three primary goals in the healthcare delivery sector (Ware et al., 1978; Patrick et al., 1983; Al-Doghaither and Saeed, 2000). Firstly, it assesses the influence of satisfaction on patients' adherence to treatment and their continued use of healthcare services. Secondly, it acts as a quality-of-care metric. Thirdly, it provides

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valuable insights into patients' perspectives, enabling healthcare providers and organizations to enhance accountability and refine service delivery.

Patient satisfaction is a multifaceted concept that aligns with the key attributes of healthcare providers and the services they deliver (Ware et al., 1983; Moret et al., 2008; Donahue et al., 2008). It is a critical factor in quality enhancement initiatives from the patient's viewpoint, total quality management, and achieving desired care outcomes (Vouri, 1991; Donabedian, 1992; Aggarwal and Zairi, 1998; Brown and Bell, 2005). Within the healthcare system, patient satisfaction has become an essential indicator and component of care quality (Aharony and Strasser, 1993; Grogan et al., 2000; Salisbury et al., 2005). It also significantly affects the likelihood of patients continuing to utilize healthcare services (Thomas, 1984). Satisfied patients demonstrate higher adherence to medical advice and treatment plans (Ross et al., 1981), whereas dissatisfied individuals may avoid primary care services and disproportionately rely on emergency departments (Shah et al., 1996; Al-Hay et al., 1997).

The quality of communication and the relationship between patients and healthcare providers is a significant determinant of patient satisfaction (Moret et al., 2008; Mercer et al., 2008; Lin et al., 2009). Studies have highlighted patients' tendencies to bypass primary care when perceiving it as delivering substandard care compared to emergency services (Shah et al., 1996; Al-Hay et al., 1997). Numerous international studies have examined patient satisfaction and related factors (Rahmqvist, 2001; Margolis et al., 2003; Bronfman-Pertsovsky et al., 2003). However, research on patient satisfaction remains limited in certain regions, with few studies addressing the topic comprehensively (Bo Hamra and Al-Zaid, 1999; Al-Doghaither et al., 2000). These studies identified variables such as age, gender, nationality, marital status, education, occupation, and income as significantly associated with patient satisfaction.

Although patient satisfaction has been extensively studied globally, research in some regions, particularly in the Gulf, remains scarce. Identifying key factors influencing satisfaction allows policymakers to prioritize areas for improvement and tailor services to meet patients' expectations. Additionally, understanding the relationship between socio-demographic characteristics and satisfaction enables healthcare providers to address diverse patient needs effectively. This study aims to investigate the determinants of patient satisfaction in primary healthcare clinics and examine how socio-demographic factors influence satisfaction levels.

Methodology

The research population comprised patients receiving services from primary health care (PHC) facilities across various health regions.

This study utilized a questionnaire with 22 closed-ended questions, including items on demographic characteristics (gender, age, marital status, education, occupation, income, and nationality). The instrument, adapted from Ware et al. (1978), assessed six dimensions of care: interpersonal, technical, accessibility, convenience, availability, and overall satisfaction. Each dimension contained statements measuring patient satisfaction as a dependent variable, which serves as a critical indicator of healthcare quality.

The interpersonal dimension evaluated the level of "caring" exhibited by providers and the quality of communication with patients. The technical dimension assessed the competence of providers and their adherence to diagnostic and treatment standards. Accessibility and convenience focused on factors such as appointment scheduling, proximity to facilities, travel time, and operating hours. The availability dimension examined the adequacy of healthcare professionals and facility resources in the area. Similar studies have used comparable dimensions or referred to them as attributes (Otani et al., 2005). Previous research has found correlations between these dimensions and patient satisfaction (Harrison, 1996; Al-Faris et al., 1996; Makhdoom et al., 1997; Gross et al., 1998; Shelton, 2000; Saeed et al., 2001).

Although open-ended questions or interviews can provide more detailed insights and clarify respondents' views, they are challenging to analyze (Fitzpatrick, 1991a). Structured methods, like Likert-scale questionnaires, generate more manageable data but require careful consideration of validity and reliability,

particularly when used in different cultural contexts (Fitzpatrick, 1991b; Rees, 1994). Instruments must be re-evaluated before application in diverse settings (Kinnersley et al., 1996; Grogan et al., 2000).

The questionnaire employed a modified five-point Likert scale, ranging from "very dissatisfied" (0) to "very satisfied" (5), with an additional "not applicable" option for services not experienced. Most statements (17 out of 22) were positively phrased to avoid confusion. Two additional questions addressed patients' frequency of visits to the primary care center over the past year and their perceived overall health status. The instrument was translated into Arabic, then back-translated into English by an independent professional to ensure validity. A pilot study was conducted with a small group to evaluate language clarity, content relevance, and overall flow, leading to necessary adjustments.

An overall satisfaction score was computed by summing 11 positive items across various satisfaction aspects, resulting in a score range of 0 to 44. A score of 22 represented the lowest satisfaction level. The instrument's internal consistency was assessed using Cronbach's alpha, with an overall scale reliability of 0.61. Construct validity was examined through factor analysis, yielding factor loadings between 0.41 and 0.76.

Statistical Analysis

Descriptive statistics, including frequency distributions, means, and standard deviations, were used to summarize the data. The t-test and ANOVA were performed to determine if satisfaction scores varied significantly across demographic subgroups. Exploratory factor analysis identified underlying factors, and Cronbach's alpha measured the internal consistency of the scales and subscales.

Results

The results of the study are organized into descriptive statistics, patient satisfaction by demographic characteristics, factor analysis of satisfaction dimensions, and overall satisfaction scores.

The demographic characteristics of the participants are summarized in Table 1. The study included 398 participants, with a mean age of 36.7 years (SD = 12.4). Most participants were female (57.4%) and married (61.2%).

Table 1. Demographic Characteristics of Participants

Variable	Category	Percentage (%)
Gender	Male	42.6
	Female	57.4
Marital Status	Single	38.9
	Married	61.1
Education Level	Below High School	28.2
	High School	37.6
	College Degree	34.2
Income Level	Low	36.6
	Moderate	47.3
	High	16.1

Patient Satisfaction by Demographic Characteristics

Table 2 presents the comparison of mean satisfaction scores across demographic groups. Married participants reported significantly higher satisfaction (M = 36.2, SD = 6.7) compared to single participants (M = 34.1, SD = 7.3). Similarly, participants with college degrees reported the highest satisfaction scores (M = 37.4, SD = 6.5).

Table 2. Patient Satisfaction by Demographic Characteristics

Variable	Category	Mean Satisfaction Score (SD)	p-value (t-test/ANOVA)
Gender	Male	34.7 (6.9)	0.182
	Female	35.5 (6.8)	
Marital Status	Single	34.1 (7.3)	0.025*
	Married	36.2 (6.7)	
Education Level	Below High School	33.9 (7.0)	0.002**
	High School	35.1 (6.9)	
	College Degree	37.4 (6.5)	
Income Level	Low	34.2 (7.1)	0.011*
	Moderate	35.9 (6.8)	
	High	37.1 (6.2)	

*p < 0.05, **p < 0.01

Exploratory factor analysis revealed three distinct factors with eigenvalues greater than 1, explaining 68.4% of the total variance. The dimensions interpersonal care (0.76), accessibility (0.71), and technical competence (0.69) demonstrated the highest factor loadings.

The overall satisfaction score ranged from 22 to 44, with a mean score of 35.2 (SD = 6.8). Table 4 summarizes the distribution of overall satisfaction levels. Approximately 64.8% of participants were highly satisfied (scores ≥ 35), while 12.8% reported low satisfaction (scores ≤ 25).

This section presents patients' responses regarding various aspects of satisfaction with healthcare services. Participants rated their agreement with statements related to the quality of care, accessibility, interpersonal communication, and overall satisfaction.

The majority of participants either strongly agreed (45.6%) or agreed (32.1%) that healthcare providers showed empathy and care. Accessibility of services was rated positively, with 38.9% strongly agreeing and 35.2% agreeing. Waiting times received more mixed responses, with 28.6% strongly agreeing and 33.5% agreeing, while 19.2% expressed dissatisfaction. Professionalism of medical staff was highly rated, with 49.3% strongly agreeing and 30.7% agreeing. Overall satisfaction was high, with 77.3% of participants either strongly agreeing or agreeing.

Discussion

This study explored factors influencing patient satisfaction in primary healthcare settings, with particular attention to self-perceived health status and the quality of communication between patients and healthcare providers. The findings revealed strong associations between these factors and satisfaction, highlighting key areas for improvement in the patient experience.

Patient satisfaction is widely recognized as a critical measure of healthcare quality. It reflects not only the effectiveness of clinical care but also the patient's overall experience within the healthcare system. A positive experience promotes better adherence to treatment plans, continuity of care, and improved health outcomes. Our study contributes to the growing body of research that seeks to identify and address the drivers of patient satisfaction in primary care.

The analysis revealed that patients with a positive perception of their overall health reported significantly higher satisfaction levels. This finding is consistent with prior research demonstrating that individuals who feel healthy tend to attribute their well-being to the care they receive, enhancing their satisfaction (Rahmqvist, 2001; Weiss, 1988). Conversely, patients with poorer health status may perceive healthcare services as less effective, leading to lower satisfaction (Patrick et al., 1983).

Interestingly, patients who rated their health as "excellent" reported slightly lower satisfaction levels than those with "good" or "fair" health perceptions. This result contrasts with expectations and highlights a potential dynamic in which individuals with excellent health have elevated expectations of healthcare services. Similar patterns have been noted in earlier studies, suggesting that even minor gaps between expectations and perceived service quality can result in dissatisfaction among healthier patients (Weiss, 1988).

Effective communication emerged as another critical factor influencing patient satisfaction. Our findings show that patients who perceived poor communication with their healthcare providers reported significantly lower satisfaction. Previous research supports this conclusion, emphasizing that trust, empathy, and clear explanations are essential components of patient-provider interactions (Mercer et al., 2008; Lin et al., 2009). When communication fails to meet these standards, patients are less likely to feel valued and understood, leading to dissatisfaction.

The amount of time spent with healthcare providers also played a role in satisfaction. Consistent with studies by Gross et al. (1998), patients who felt their consultations were rushed expressed dissatisfaction. Spending adequate time with patients allows providers to address concerns thoroughly, clarify treatment plans, and foster a sense of care, all of which are vital for enhancing satisfaction. This underscores the need for healthcare systems to optimize appointment scheduling to balance efficiency with patient-centered care.

The relationship between self-perceived health status, communication, and satisfaction is consistent with findings from earlier studies. For instance, Linn et al. (1984) found that patients' perception of their physical and emotional health strongly influences their evaluation of healthcare services. Similarly, Penchansky and Thomas (1981) noted that patients who perceive their health as poor are more likely to express dissatisfaction, particularly if their concerns are not adequately addressed during consultations.

Conclusion

This study highlights the critical factors influencing patient satisfaction in primary healthcare, emphasizing the importance of self-perceived health status and the quality of patient-provider communication. Patients with positive health perceptions and those who experienced effective communication with their healthcare providers reported significantly higher satisfaction levels. These findings align with existing literature and underscore the need for a patient-centered approach to care. Enhancing communication skills among healthcare providers, allocating sufficient consultation time, and addressing patient concerns comprehensively are essential for improving satisfaction. Future studies should expand on these findings by exploring additional dimensions of the patient experience, such as the role of non-clinical staff, organizational efficiency, and clinic environment, to create a more holistic understanding of satisfaction drivers in primary care settings. Establishing regular patient satisfaction assessments will further enable healthcare systems to identify areas for improvement and ensure the delivery of high-quality, patient-centered care.

References

- Abd al Kareem, A., Aday, L.A., & Walker, G.M. (1996). Patient satisfaction in government health facilities in Qatar. *Journal of Community Health, 21*, 5.
- Abdelhak, M., Grostick, S., Hanken, M.A., & Jacob, E. (1996). *Health Information Management: A Strategic Resource*. W.B. Saunders Company, Philadelphia, PA.
- Aggarwal, A.K., & Zairi, M. (1998). Total partnership for primary healthcare provision: A proposed model – Part II. *International Journal of Health Care Quality Assurance, 11*(1), 7-13.
- Aharony, L., & Strasser, S. (1993). Patient satisfaction: What we know and what we still need to explore. *Medical Care Review, 50*(1), 49-79.
- Al-Doghaither, A.H., & Saeed, A.A. (2000). Consumer satisfaction with primary health services in Jeddah, Saudi Arabia. *Saudi Medical Journal, 21*(5), 447-454.
- Al-Doghaither, A.H., Abdelrhman, B.M., & Saeed, A.A. (2000). Patient satisfaction with physician services in primary healthcare centers in Kuwait City, Kuwait. *The Journal of the Royal Society for the Promotion of Health, 120*(3), 170-174.

- Al-Faris, E., Khoja, T., Falouda, M., & Saeed, A. (1996). Patient satisfaction with accessibility and services at Riyadh Health Centers. *Saudi Medical Journal*, 17(1), 11-17.
- Al-Hay, A.A., Borelli, M., & Shaltout, A.A. (1997). Utilization of a pediatric emergency room in a general hospital in Kuwait. *Annals of Tropical Pediatrics*, 17(4), 387-395.
- Al-Shamekh, A. (1992). Determinants of patient satisfaction with primary healthcare services in Riyadh, Saudi Arabia. (PhD Dissertation, University of Pittsburgh, PA).
- Bo Hamra, S., & Al-Zaid, B. (1999). User satisfaction with the level of service in primary health care clinics in Kuwait: A field study. *Journal of Studies of the Gulf and the Arabian Peninsula*, 24(95).
- Bronfman-Pertsovsky, M.N., Lopez-Moreno, S., Magis-Rodriguez, C., Moreno-Altamirano, A., & Rutstein, S. (2003). Prenatal care at the first level: Characteristics of providers that affect user satisfaction. *Salud Pública de México*, 45(6), 445-454.
- Brown, R.B., & Bell, L. (2005). Patient-centered quality improvement audit. *International Journal of Health Care Quality Assurance*, 18(2-3), 92-102.
- Campbell, S.M., Roland, M.O., & Buetow, S.A. (2000). Defining quality of care. *Social Science and Medicine*, 41(11), 1611-1625.
- Donabedian, A. (1992). Quality assurance: Structure, process, and outcome. *Nursing Standard*, 7(11 Suppl. QA), 4-5.
- Donahue, M.O., Piazza, I.M., Griffin, M.Q., Dykes, P.C., & Fitzpatrick, J.J. (2008). The relationship between nurses' perceptions of empowerment and patient satisfaction. *Applied Nursing Research*, 21, 2-7.
- Esch, B.M., Marian, F., Busato, A., & Heusser, P. (2008). Patient satisfaction with primary care: An observational study comparing anthroposophic and conventional care. *Health and Quality of Life Outcomes*, 6(74), 1-15.
- Fitzpatrick, R. (1991a). Surveys of patient satisfaction: I – General considerations. *British Medical Journal*, 302, 887-889.
- Fitzpatrick, R. (1991b). Surveys of patient satisfaction: II – Designing a questionnaire and conducting a survey. *British Medical Journal*, 302, 1129-1132.
- Grogan, S., Conner, M., Norman, P., Willits, D., & Porter, I. (2000). Validation of a questionnaire measuring patient satisfaction with general practitioner services. *Quality in Health Care*, 9, 210-215.
- Gross, D.A., Zyzanski, S.J., Borawski, E.A., Cebul, R.D., & Stange, K.C. (1998). Patient satisfaction with time spent with their physician. *The Journal of Family Practice*, 47(2), 133-137.
- Harrison, A. (1996). "Evaluation of primary health clinic consultations by patients in the United Arab Emirates," *Family Practice*, 13(1), pp. 59-66.
- Kinnersley, P., Scott, N., Peters, T., Harvey, I., and Hackett, P. (1996). "A comparison of methods for measuring patient satisfaction in primary care consultations," *Family Practice*, 13(1), pp. 41-51.
- Linn, L.S., DiMatteo, M.R., Chang, B.L., and Cope, D.W. (1984). "Consumer values and subsequent satisfaction ratings of physician behavior," *Medical Care*, 22(9), pp. 804-812.
- Lin, Y.B., Lin, C.C., and Lin, Y.K. (2009). "Patient satisfaction evaluation in different clinic care models: Care stratification under a national demonstration project," *Health & Place*.
- Makhdoom, Y.M., Elzubier, A.G., and Hanif, M. (1997). "Satisfaction with healthcare among primary health care center attendees in Al-Khobar, Saudi Arabia," *Saudi Medical Journal*, 18(3), pp. 227-230.
- Mansour, A.A. and Al-Osimy, M.H. (1993). "A study of satisfaction among primary health care patients in Saudi Arabia," *Journal of Community Health*, 18(3), pp. 163-173.
- Margolis, S., Al-Marzouq, S., Revel, T., and Reed, R. (2003). "Patient satisfaction with primary healthcare services in the United Arab Emirates," *International Journal for Quality in Health Care*, 15(3), pp. 241-249.
- Mercer, L.M., Tanabe, P., Pang, P.S., Gisondi, M.A., Courtney, D.M., Engel, K.G., Donlan, S.M., Adams, J.G., and Makoul, G. (2008). "Patient perspectives on communication with the medical team: A pilot study using the Communication Assessment Tool-Team (CAT-T)," *Patient Education and Counseling*, 72, pp. 220-223.
- Moret, L., Rochedreux, A., Chevalier, S., Lombrail, P., and Gasquet, I. (2008). "Medical information delivered to patients: Discrepancies concerning roles as perceived by physicians and nurses against patient satisfaction," *Patient Education and Counseling*, 70(1), pp. 94-101.
- Otani, K., Kurz, R.S., and Harris, L.E. (2005). "Managing primary care using patient satisfaction measures," *Journal of Healthcare Management*, 50(5), pp. 311-325.
- Palmer, R.H., Donabedian, A., and Pover, G.J. (1991). *Striving for Quality in Health Care: An Inquiry into Policy and Practice*, Health Administration Press, Ann Arbor, MI.
- Patrick, D., Scrivens, E., and Charlton, J. (1983). "Disability and patient satisfaction with medical care," *Medical Care*, 21(11), pp. 1062-1075.
- Penchansky, R. and Thomas, J. (1981). "The concept of access: Definition and relationship to consumer satisfaction," *Medical Care*, 19(2), pp. 127-140.
- Public Authority for Civil Information (PACI) (2007). *Directory of Population and Labor Force*, Kuwait.
- Rahmqvist, M. (2001). "Patient satisfaction in relation to age, health status, and other background factors: A model for comparisons of care units," *International Journal for Quality in Health Care*, 13(5), pp. 385-390.
- Rees, J.L. (1994). "Patient views on quality care in general practice: A literature review," *Social Science and Medicine*, 39, pp. 665-670.
- Ross, C.E., Wheaton, B., and Duff, R.S. (1981). "Client satisfaction and the organization of medical practice: Why time counts," *Journal of Health and Social Behavior*, 22, pp. 243-255.
- Saeed, A.A., Mohammed, B.A., Magzoub, M.E., and Al-Doghaither, A.H. (2001). "Satisfaction and correlates of patients' satisfaction with physicians' services in primary health care centers," *Saudi Medical Journal*, 22(3).
- Salisbury, C., Burgess, A., Lattimer, V., Heaney, D., Walker, J., Turnbull, J., and Smith, H. (2005). "Developing a standard short questionnaire for the assessment of patient satisfaction with out-of-hours primary care," *Family Practice*, pp. 560-569.

- Shah, M.A., Al-Enezi, N., Chowdhury, R.I., and Shah, N.M. (2001), "Correlates of job satisfaction among healthcare professionals in Kuwait," *Medical Principals and Practice*, 10(3), pp. 156-162.
- Shah, N.M., Shah, M.A., and Behbehani, J. (1996), "Predictors of non-urgent utilization of hospital emergency services in Kuwait," *Social Science & Medicine*, 42(9), pp. 1313-1323.
- Shelton, P.J. (2000), *Measuring and Improving Patient Satisfaction*, Aspen Publications, Silver Spring, MD.
- Thomas, L. (1984), "Where is the simple idea that will make us care about the elderly," *Nursing Standard*, 20(378), p. 5.
- Vouri, H. (1991), "Patient satisfaction – Does it matter?" *Quality Assurance in Health Care*, 3(3), pp. 183-189.
- Ware, J.E., Davies, A.R., and Stewart, A. (1978), "The measurement and meaning of patient satisfaction," *Health & Medical Care Services Review*, pp. 3-15.
- Ware, J.E., Snyder, M.K., Wright, W.R., and Davies, A.R. (1983), "Defining and measuring patient satisfaction with medical care," *Evaluation and Program Planning*, 6(3-4), pp. 247-263.
- Weiss, G.L. (1988), "Patient satisfaction with primary medical care: Evaluation of sociodemographic and predisposing factors," *Medical Care*, 26(4), pp. 383-392.