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EVALUATION OF THE DETERMINANTS OF SATISFACTION AMONG PATIENTS CONSULTING A GENERAL PRACTICE IN MOROCCO

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ABSTRACT

Introduction: Identifying patients' priorities and their associations with overall satisfaction may inform quality assessment in general practice. This study examined the importance attributed to care-related items and overall satisfaction among patients attending general practice clinics in Morocco.

Materials and methods: This cross-sectional quantitative observational study included adults attending 30 general practice clinics in Rabat, Salé, Kénitra, from March to August 2026. An anonymous, self-administered Google Forms questionnaire assessed overall satisfaction and the perceived importance of 20 care-related items. Participants were recruited by convenience sampling.

Results: The analysis included 351 participants: 183 men (52.1%) and 168 women (47.9%). The reported mean age was 31.7 years, and 273 participants (77.8%) were younger than 40 years. Overall, 251 participants (71.5%) reported being satisfied or very satisfied. Pain (59.8%) and medical advice (38.5%) were the most frequent reasons for consultation. The determinants most frequently rated as important or very important were physician competence (94.9%), communication quality (93.2%), material quality and cleanliness (93.2%), and physician reputation (91.5%). Overall satisfaction was significantly associated with physician reputation ($p < 0.001$), office cleanliness ($p = 0.002$), physician competence, communication quality, reception quality and staff quality (all $p < 0.001$), consultation order ($p = 0.004$), equipment quality ($p = 0.005$), and material quality and cleanliness ($p < 0.001$).

Conclusion: Respondents attributed importance to professional, interpersonal, and organizational aspects of care. The cross-sectional design limit causal interpretation and generalizability. Further studies should validate these patient-reported priorities.

Keywords: General Practice; Cross-Sectional Study; Quality of Health Care; Quality Indicators; Patient Satisfaction; Morocco.

1 INTRODUCTION

General practice is a core component of primary healthcare, providing continuous, comprehensive, and accessible care to individuals across all age groups and health conditions [1]. As the first point of contact within the healthcare system, general practitioners play a central role in addressing a wide range of health needs and coordinating patient care. The importance of first-contact medical care in population health was notably highlighted by the seminal work of Kerr White in the United States in the 1950s [2].

Quality of care remains a major concern in healthcare systems worldwide. Although quality has been defined in different ways, one widely used definition refers to the ability of a product or service to meet or exceed users' expectations [3]. In healthcare, however, quality is a multidimensional concept that extends beyond technical effectiveness and safety to include patients' experiences, expectations, preferences, and perceptions of the care they receive.

In general practice, patients' perceptions of quality are particularly relevant because of the continuous and direct relationship established with primary care physicians. Several dimensions may influence these perceptions, including physician-patient communication, accessibility of services, organization of consultations, interpersonal interactions, practice environment, and characteristics of the healthcare team. Understanding these factors is important for identifying aspects of care that patients value and for informing patient-centred quality improvement initiatives. [4-5]

Despite the growing interest in patient experience and satisfaction, evidence on the determinants of perceived quality in general practice remains limited in the Moroccan context. Further investigation is therefore needed to better understand the priorities of patients attending general practice clinics and the factors associated with their overall satisfaction.

The primary objective of this study was to describe the importance attributed by patients to different care-related factors in general practice. A secondary objective was to examine the unadjusted associations between these importance ratings and overall patient satisfaction across environmental, organizational, professional, equipment-related, and material-related dimensions of care.

2 METHODS

A cross-sectional quantitative observational study examined the importance attributed to care-related items and their associations with overall patient satisfaction. The study was conducted in general practice clinics in the Rabat-Salé-Kénitra region over six months, from March 1 to August 31, 2026. The study involved 30 general practice clinics located in Rabat, Salé, Kénitra, and Témara. Patients were recruited during routine consultations, and the questionnaire was completed after the medical consultation.

2.1 STUDY POPULATION

The target population consisted of Moroccan adults attending general practice clinics during the study period. Patients were eligible for inclusion if they were aged 18 years or older, attended one of the participating general practice clinics for a medical consultation, and were able to understand and complete the study questionnaire. Patients were included regardless of sex or reason for consultation. Patients presenting with a severe medical condition requiring urgent or specialized management and individuals with loss of autonomy that prevented independent completion of the questionnaire were excluded.

2.2 Sampling and recruitment

Participants were recruited by non-probability convenience sampling from eligible adult patients attending the participating clinics during the study period. After consultation, patients who agreed to participate were invited to complete an anonymous self-administered Google Forms questionnaire. No random selection was performed. Participation was voluntary, and refusal to participate had no effect on the medical care provided. The final sample comprised 351 patients who submitted the online questionnaire after consultation. All 351 questionnaires were included in the statistical analysis. The number analysed represents the final sample size and does not, by itself, establish a response rate.

2.3 Questionnaire development and data collection

Data were collected using an anonymous, self-administered online questionnaire hosted on Google Forms. The questionnaire was developed on the basis of a review of the relevant literature on patient satisfaction and perceived quality of care in primary care settings.

The questionnaire was administered exclusively in French. No formal pretesting or validation of the questionnaire was performed before data collection. Following completion of the general practice consultation and after informed consent had been obtained, the physician's secretary provided eligible participants with a link to the Google Forms questionnaire. Participants completed and submitted the questionnaire electronically after their consultation. Data were collected anonymously, and no directly identifying personal information was recorded in the study dataset. The questionnaire comprised three sections, with 20 care-related items in the second section. The first section collected sociodemographic and consultation-related information, including age, sex, and reason for consultation. The second section assessed 20 care-related items, organised into the five dimensions of the Ishikawa 5M framework: seven Environment items, seven Manpower items, four Methods items, one Machines item, and one Materials item. The third section assessed overall patient satisfaction with the care received.

2.4 Assessment of overall patient satisfaction

The primary outcome of the study was overall patient satisfaction with the general practice consultation. Overall satisfaction was assessed using a five-point Likert scale: 1 = not at all satisfied; 2 = dissatisfied; 3 = somewhat dissatisfied; 4 = satisfied; and 5 = very satisfied. For statistical analysis, scores 1–3 were classified as dissatisfied, and scores 4–5 were classified as satisfied. This binary variable was used as the main outcome in comparisons between groups.

2.5 Assessment of determinants of perceived quality of care

Potential determinants of perceived quality of care were classified according to the five dimensions of the 5M Ishikawa framework: Environment, Manpower, Methods, Machines, and Materials.

- Environment M1: Seven environment-related items were assessed: reputation, cleanliness of the clinic, quality of sanitary facilities, accessibility, consultation fees, geographical proximity, and the condition of the waiting room.
- Manpower M2: Seven staff-related items were assessed: physician competence, physician–patient communication, reception quality, staff quality, follow-up quality, responsiveness in emergencies, and consultation duration.
- Methods and organizational processes M3: Organizational factors included ease of obtaining an appointment, time required to obtain an appointment, waiting time before consultation, and respect for the order in which patients were seen.
- Machines and equipment M4: This dimension assessed the importance attributed to the quality of medical equipment available in the practice.
- Materials M5: This dimension assessed the importance attributed to the quality and cleanliness of materials used during care.

2.6 Rating of the importance of quality determinants

Participants were asked to rate the importance of each determinant using a five-point Likert scale: 1 = not at all important; 2 = not important; 3 = somewhat unimportant; 4 = important; and 5 = very important. For statistical analysis, scores 1–3 were classified as not important, and scores 4–5 were classified as important. The same coding procedure was applied consistently to all determinants included in the analysis. These ratings measured the perceived importance of each attribute, rather than the quality of care actually received for that attribute.

2.7 Data management

Google Forms responses were exported and imported into IBM SPSS Statistics version 20. The dataset was checked for completeness, consistency, missing or implausible values, and coding errors, with corrections made where necessary. Each questionnaire received a unique study identification number; directly identifying information was excluded from the analytical database. The database was locked after cleaning and verification.

2.8 Statistical analysis

Statistical analyses were performed using IBM SPSS Statistics, version 20. Categorical variables were summarised using counts and percentages. Age was described using its reported mean and age categories. The denominator for each percentage was specified in the corresponding text or table. The primary outcome was the dichotomized overall satisfaction variable. Bivariate associations between categorical explanatory variables and overall satisfaction were assessed using Pearson's chi-square test. Fisher's exact test was used when expected cell counts were too small for the chi-square approximation. These analyses assess unadjusted associations and do not identify independent predictors. Results were presented as counts and percentages. In Table 2, each percentage uses all 351 participants as the denominator. The total importance of an item is obtained by adding its counts across the satisfied and dissatisfied

groups and dividing by 351. Tests were two-sided, with a nominal significance threshold of $p < 0.05$. Given the multiple comparisons, the reported associations were interpreted as exploratory rather than confirmatory.

2.9 Ethical considerations

The study was conducted in accordance with the ethical principles applicable to biomedical and health research. Before participation, all eligible patients received clear information regarding the purpose of the study, the voluntary nature of participation, the confidentiality of their responses, and their right to decline participation without any consequences for their medical care. Verbal consent was obtained after provision of study information, and all participants subsequently signed a written informed consent form prepared in Arabic. The questionnaire was anonymous, and no directly identifying personal information was collected.

3 RESULTS AND DISCUSSION

A total of 351 patients were included: 183 men (52.1%) and 168 women (47.9%), giving a male-to-female ratio of 1.09. The reported mean age was 31.7 years $\pm$ 11.1 [18-70]. Overall, 273 participants (77.8%) were younger than 40 years. More than 47% of participants reported consulting a general practitioner more than twice per year. The most frequent reasons for consultation were pain (210/351, 59.8%), medical advice (135/351, 38.5%), and fever (87/351, 24.8%). Participants could report several reasons; these percentages were therefore not mutually exclusive.

The demographic and consultation-related characteristics of the study population are presented in Table 1.

Table 1: Demographic and consultation characteristics of participants (n = 351)

Characteristic		Number	Percentage (%)
Sex	Male	183	52.1%
	Female	168	47.9%
Age (years)	<40 years	273	77.8%
	$\geq$ 40 years	78	22.2%
Reasons for consultation	Pain	210	59.8%
	Medical advice	135	38.5%
	Fever	87	24.8%
	Chronic disease follow-up	63	17.9%
	Pregnancy follow-up	12	3.4%

3.1 Overall patient satisfaction

The importance ratings were grouped into the five dimensions of the Ishikawa 5M framework: Environment (M1), Workforce (M2), Methods and organizational processes (M3), Machines and equipment (M4), and Materials (M5). Importance ratings were analyzed separately from overall patient satisfaction. Overall satisfaction with general practice care was high, with 251 of the 351 participants (71.5%) reporting that they were satisfied or very satisfied with the care received.

Patient-reported priorities may help clarify expectations and experiences of general practice care. This study assessed perceived importance across the five Ishikawa 5M dimensions separately from overall satisfaction. The findings therefore describe patients' priorities and exploratory associations with satisfaction, rather than objective assessments of individual care attributes.

Patient satisfaction is multidimensional, lacks a universally accepted definition, and reflects individual, interpersonal, organizational, and contextual factors. Overall, 71.5% of participants were satisfied or very satisfied with general practice care. The Study on Global AGEing and Adult Health (SAGE), conducted in China with the World Health Organization between 2007 and 2010 among 5,774 participants, reported more than 80% satisfaction with outpatient care [6]. Although satisfaction was lower in our study, comparisons require caution because populations, healthcare settings, and satisfaction measures differed.

3.1.1 Environment-related factors (M1)

Among environment-related factors, physician reputation was most frequently rated as important or very important, by 321 participants (91.5%), followed by office cleanliness (261/351; 74.4%), quality of sanitary facilities (240/351; 68.4%), and accessibility (240/351; 68.4%). In bivariate analysis, overall satisfaction was significantly associated with physician reputation ($p < 0.001$), office cleanliness ($p = 0.0021$), quality of sanitary facilities ($p = 0.0332$), and waiting-room condition ($p = 0.0283$). In contrast, no statistically significant associations were observed for accessibility ($p = 0.5457$), consultation fees ($p = 0.2950$), or geographical proximity ($p = 0.6614$).

Physician reputation received the highest environmental importance rating (91.5%) and was significantly associated with overall satisfaction ($p < 0.001$). Japanese studies similarly identified provider or institutional reputation as a determinant of satisfaction [7,8], while Imanaka et al. linked hospital reputation to overall satisfaction and perceptions of healthcare quality [9].

Consultation fees, geographical proximity, and accessibility were rated important or very important by 49.6%, 46.2%, and 68.4% of participants, respectively, but none was significantly associated with overall satisfaction ($p = 0.295$, $p = 0.661$, and $p = 0.546$). Patients generally expect care quality to match or exceed the price paid [10], prefer nearby providers and shorter travel distances [11–13], and consider access by private or public transportation [13,14]. Accessible facilities also help reduce barriers to healthcare utilization [15]. These attributes may influence provider choice or access without necessarily determining satisfaction after consultation.

Office cleanliness and sanitary facilities were considered important or very important by 74.4% and 68.4% of participants and were significantly associated with satisfaction ($p = 0.002$ and $p = 0.033$, respectively). These findings align with Greek research identifying antisepsis and sterilization as patient priorities [16] and Pakistani research linking poor hygiene to poorer experiences and lower satisfaction [17]. Waiting-room condition, although less frequently rated important or very important (35.9%), was also significantly associated with satisfaction ($p = 0.028$). Thus, importance ratings do not indicate the strength of an association with satisfaction; reputation and hygiene nevertheless emerged as relevant environmental attributes.

3.1.2 Manpower-related factors (M2)

Workforce-related factors were among the determinants most frequently rated as important or very important. Physician competence was rated as important or very important by 333 participants (94.9%), followed by communication quality (327/351; 93.2%), reception quality (303/351; 86.3%), staff quality (303/351; 86.3%), and follow-up quality (294/351; 83.8%). Overall satisfaction was significantly associated with physician competence ($p < 0.001$), communication quality ($p < 0.001$), reception quality ($p < 0.001$), staff quality ($p < 0.001$), and emergency responsiveness ($p = 0.0283$). No statistically significant associations were found for follow-up quality ($p = 0.3761$) or consultation duration ($p = 0.1254$). Overall, the Workforce dimension contained the largest number of determinants significantly associated with patient satisfaction.

Across the seven Manpower items, importance ratings ranged from 63.2% to 94.9%. Physician competence (94.9%) and communication quality (93.2%) received the highest ratings and were both significantly associated with satisfaction ($p < 0.001$ for each). Technical competence and the ability to reassure patients have been identified as important aspects of perceived quality: Tokunaga et al. emphasized competence in Japanese hospital care [7], and a 2016 study of 497 participants across five medical practices in Kuwait identified it as a major determinant of satisfaction [18]. Because patients may have limited ability to assess technical care, they may rely on communication, empathy, friendliness, and reassurance [19], highlighting the complementary roles of clinical and interpersonal skills.

Reception quality and staff quality were each rated important or very important by 86.3% of participants and were both significantly associated with satisfaction ($p < 0.001$). Emergency responsiveness was rated important or very important by 79.5% and significantly associated with satisfaction ($p = 0.028$). These findings accord with New York research identifying nursing and support staff satisfaction as a component of overall satisfaction [20]. Secretaries, nurses, and medical assistants may shape early perceptions of organization and responsiveness; training in communication, professionalism, organizational procedures, and patient-centred interaction may improve patients' experiences.

Despite high importance ratings, follow-up quality (83.8%) and consultation duration (63.2%) were not significantly associated with satisfaction ($p = 0.376$ and $p = 0.125$, respectively), again distinguishing perceived importance from statistical association.

3.1.3 Methods and organizational processes (M3)

Regarding organizational factors, respect for consultation order was rated as important or very important by 303 participants (86.3%). Appointment delay and ease of obtaining an appointment were each considered important or very

important by 279 participants (79.5%), while waiting time was considered important or very important by 252 participants (71.8%). Among these organizational factors, only respect for consultation order was significantly associated with overall satisfaction ($p = 0.0042$). No statistically significant associations were observed for appointment delay ($p = 0.1888$), ease of obtaining an appointment ($p = 0.6577$), or waiting time ($p = 0.9570$).

Importance ratings for organizational factors ranged from 71.8% to 86.3%. Respect for consultation order ranked highest (86.3%) and was the only organizational item significantly associated with satisfaction ($p = 0.004$). This may reflect the value patients place on fairness and transparency in patient flow, although the cross-sectional design precludes causal conclusions.

Waiting time was considered important or very important by 71.8% of participants but was not significantly associated with satisfaction ($p = 0.957$). In contrast, a US study of 11,352 patients across 44 outpatient clinics at a large academic medical center linked longer waits to lower satisfaction, reduced confidence in physicians, and poorer perceived quality [21]. Differences in settings, expectations, or assessment methods may explain this discrepancy.

Ease of obtaining an appointment and appointment delay were each considered important or very important by 79.5% of participants, but neither was significantly associated with satisfaction ($p = 0.658$ and $p = 0.189$, respectively). A US survey of 8,465 patients associated easier scheduling with higher satisfaction and perceived care quality [22], supporting the potential relevance of reducing appointment-related time and effort despite the absence of significant associations in this sample.

3.1.4 Machines and equipment (M4)

Equipment quality was rated as important or very important by 285 participants (81.2%). A statistically significant association was observed between perceived equipment quality and overall patient satisfaction ($p = 0.0054$).

Equipment quality was considered important or very important by 81.2% of participants and was significantly associated with satisfaction ($p = 0.005$). This is consistent with a 2018 US study of examination-room design in family medicine clinics, which reported higher satisfaction when modern, comfortable equipment was available [23], and Chinese research associating perceived modern, well-maintained equipment with greater satisfaction [24]. Equipment may enhance confidence in the care environment and merits consideration in efforts to improve patients' experiences; however, these cross-sectional findings cannot establish a direct effect on clinical effectiveness or technical performance.

3.1.5 Materials (M5)

The quality and cleanliness of medical materials were considered important or very important by 327 participants (93.2%), making this one of the most highly rated determinants in the study. This factor was also significantly associated with overall patient satisfaction ($p < 0.001$).

The quality and cleanliness of medical materials were considered important or very important by 93.2% of participants and were significantly associated with satisfaction ($p < 0.001$). Druică et al. similarly identified material quality as a component of positive perceptions of care in a 2020 Romanian study of 1,500 patients [25]. Patients' attention to the condition, cleanliness, and perceived quality of materials may reflect their expectations of safety. Materials should be clean, appropriately maintained, and suitable for their intended use; cleaning, disinfection, and sterilization remain essential to safe care.

Detailed results for all quality-of-care determinants, including their distribution according to overall satisfaction and the corresponding bivariate p -values, are presented in Table 2.

Overall, physician competence, communication, material quality and cleanliness, and physician reputation were particularly important to participants, and several were significantly associated with overall satisfaction. These findings may inform priorities for improving general practice experiences. Nevertheless, the cross-sectional design does not establish causality, and perceived importance does not demonstrate satisfaction with an attribute or its objective quality. Studies using validated instruments and more representative samples are needed to confirm these findings in Moroccan primary care.

Table 2: Perceived importance of quality-of-care determinants and their association with overall patient satisfaction according to the Ishikawa 5M framework

Dimension	Criteria	Satisfied or very satisfied n (%)	Dissatisfied n (%)	Total importance n (%)	p
M1 Environment	Reputation	243 (69,2)	78 (22,2)	321 (91,5)	< 0,001
	Office cleanliness	198 (56,4)	63 (17,9)	261 (74,4)	0,0021
	Quality of Sanitary facilities	180 (51,3)	60 (17,1)	240 (68,4)	0,0332
	Accessibility	174 (49,6)	66 (18,8)	240 (68,4)	0,5457
	Consultation fees	120 (34,2)	54 (15,4)	174 (49,6)	0,2950
	Geographical proximity	114 (32,5)	48 (13,7)	162 (46,2)	0,6614
	Waiting-room condition	99 (28,2)	27 (7,7)	126 (35,9)	0,0283
M2 Workforce	Physician competence	249 (70,9)	84 (23,9)	333 (94,9)	< 0,001
	Communication quality	246 (70,1)	81 (23,1)	327 (93,2)	< 0,001
	Reception quality	234 (66,7)	69 (19,7)	303 (86,3)	< 0,001
	Staff quality	231 (65,8)	72 (20,5)	303 (86,3)	< 0,001
	Follow-up quality	213 (60,7)	81 (23,1)	294 (83,8)	0,3761
	Emergency responsiveness	207 (59,0)	72 (20,5)	279 (79,5)	0,0283
	Consultation duration	165 (47,0)	57 (16,2)	222 (63,2)	0,1254
M3 Method	Consultation order	225 (64,1)	78 (22,2)	303 (86,3)	0,0042
	Appointment delay	204 (58,1)	75 (21,4)	279 (79,5)	0,1888
	Ease of obtaining an appointment	198 (56,4)	81 (23,1)	279 (79,5)	0,6577
	Waiting time	180 (51,3)	72 (20,5)	252 (71,8)	0,9570
M4 Machine	Equipment quality	213 (60,7)	72 (20,5)	285 (81,2)	0,0054
M5 Material	Material quality and cleanliness	243 (69,2)	84 (23,9)	327 (93,2)	< 0,001

4 CONCLUSION

Patient satisfaction provides one perspective on the quality of general practice services. Among these 351 respondents, physician competence, communication, and cleanliness of materials received high importance ratings. Five items had nominally significant reported bivariate associations with overall satisfaction. These findings describe patient-reported priorities and exploratory associations in the participating clinics. The findings may guide further work on quality assessment in the Moroccan primary care context. They do not establish validated quality indicators, independent determinants, or the effectiveness of specific interventions. Studies involving larger and more diverse samples, validated questionnaires, and adjusted analyses are needed to assess the reliability and generalizability of these findings and to develop patient-centred quality indicators for general practice in Morocco.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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Disclosure of conflict of interest

The authors declare that they have no financial or non-financial conflicts of interest related to this study.

Statement of informed consent

The study was conducted in accordance with the ethical principles applicable to biomedical research. All participants received clear and appropriate information about the objectives and procedures of the study before participation. Written informed consent was obtained from all participants using a consent form prepared in Arabic. Participation was voluntary, and confidentiality and anonymity of the collected data were ensured.

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