

**ORIGINAL PAPER****Assessment of users' expectations, perceived quality and satisfaction with primary care in Greece****Vasilios Raftopoulos, RN, MSc, PhD**Assistant Professor, Cyprus University of Technology, Nursing Department  
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**Abstract****Aim:** To explore users' expectations, their perceived quality and their satisfaction with primary care services an anonymous questionnaire has been administered to a sample of 212 users.**Background:** Patient satisfaction with quality of primary care is a dominant concept in quality assurance and quality improvement programs.**Methods:** It has been used the Expectations-Perceived Quality-Satisfaction with Primary Care Services Scale (E-PQ-SPCSS) that was developed and validated in this study. Data were analysed using SPSS, version 18.**Results:** The overall satisfaction with the primary care services was 97.2%, with the medical care provided was 95.3% and with nursing care was 92.5%. Nursing care was provided to 126 (59.4%) users. These users were more satisfied ( $p < 0.0001$ ) with global nursing care provided ( $4.52 \pm 0.70$ ) than those who were not provided a nursing care intervention ( $3.53 \pm 1.73$ ). Age correlated with global satisfaction with primary care ( $r = 0.315$ ,  $p < 0.001$ ) with medical ( $r = 0.194$ ,  $p < 0.001$ ) and nursing care ( $r = 0.183$ ,  $p < 0.001$ ) as well as with expectations total score ( $r = 0.295$ ,  $p < 0.001$ ), perceived quality of care total score ( $r = 0.366$ ,  $p < 0.001$ ) and satisfaction with care total score ( $r = 0.207$ ,  $p = 0.002$ ). Based on Cattell's visual scree plot, four factors accounting for 64.34% of the item covariance were extracted and rotated through factor analysis (nurse's technical and interpersonal competence, physician's interpersonal competence, physician's technical competence and structure characteristics).**Conclusions:** The psychometric properties of the E-PQ-SPCSS were good enough indicating that the scales are reliable and adequate for group comparisons.**Keywords:** user satisfaction; quality of care; general practice; primary care; scale validity; reliability**Introduction**

In recent years the debate about the effectiveness of user satisfaction scales has taken on a new shape that gives emphasis to the combination of qualitative and quantitative research methods (Raftopoulos, 2005). The assessment of users' perceptions, preferences and expectations from primary health care services is essential for the redesign and the improvement of these services. Greek health care professionals still remain circumspects regarding the consumerism model that was recently introduced in many countries, as they believe that it is market oriented and gives little attention to the user. In Greek language the word client is referred as "pelatis" and means "I have relations with somebody" and "I come close to someone". Recent legislation in Greece proposes some new quality elements in Public Health but does not give real voice to the users of these services due to its paternalistic structure. In Greece Primary health care sector services are provided from various settings such as the outpatient clinics of hospitals, the clinics of

insurance, the urban health centres, the rural health centres and the private physicians.

The exploration of the link between users' expectations, perceived quality of care and satisfaction with care allow us to focus on specific deficiencies from the ideal care that fulfils all the needs of the users (Jung et al, 2002). Rao et al. (2006) in their literature review revealed to a positive association between meeting user expectations and a higher level of satisfaction with primary care visits. Several researchers have developed reliable and valid scales measuring user satisfaction with general practitioner services (Williams et al, 1995; Grogan et al, 2000). Anderson et al. (2001) in their qualitative research identified several dimensions of primary care such as: access, office staff, privacy, empathy, listening, respect, provider skills, care coordination and environment.

Many factors affect user satisfaction, including organization and environment of care (Gadallah et al, 2003) waiting time (Aldana et al, 2001) user's own expectations (Anderson et al, 2001; Jung et al, 2002) the competence and personal characteristics of the physician (Margolis et al, 2003; Schattne et al, 2004; Groenewegen et al, 2005).

The overall objective of this research was to assess users' expectations, their perceived quality of primary care and their satisfaction with primary care services provided. The specific aims were to develop a reliable and valid questionnaire which would be useful as a consumer indicator in routine clinical practice.

### Sample and method

Potential subjects meeting the following inclusion criteria were selected to participate in the study: (1) willing to participate, (2) having used a primary care setting at least two times in the past (3) ability to speak and read Greek and (4) no cognitive impairment, according to the research team's assessment. Potential subjects were recruited from seven primary health care settings. Every effort was made to protect their rights. Users were informed that participation in the study or refusal to participate in the study would not delay their treatment or affect the health care they receive. They were also informed of their right to withdraw from the study at any time. They received a brief explanation of the purpose and the aim of the study, and those who agreed to participate were asked to give their verbal informed consent. The protocol of the study was approved

by the Medical Directors of the primary care settings.

A total of 250 users were approached in a variety of primary health care settings (outpatient settings, health care centers and a home care service). Among them 212 users (92 men and 120 women) agreed to participate to the study and gave their informed consent. The mean age of the sample was  $50.17 \pm 16.97$  years old. The demographic characteristics of the sample are presented in Table 1.

**Table 1** Social and demographic characteristics of the sample

Variable	N	%
<b>Gender</b>		
Men	92	43.4
Women	120	56.6
<b>Age group</b>		
Non-elderly (18-64 years old)	158	74.5
Elderly (>65 years old)	54	25.5
<b>Education</b>		
Illiterate	17	8
Primary	47	22.2
Secondary	146	68.8
University/Polytechnic	2	1
<b>Marital status</b>		
Married	95	44.8
Single	60	28.3
Divorced/Separated	20	9.4
Widowed	26	12.3
Cohabit	11	5.2
<b>Employment</b>		
Housewives	32	15.1
Agriculture	9	4.2
Blue collar	23	10.8
White collar	73	34.4
Pensioners	56	26.4
Unemployed	19	9
<b>Severity of the health problem</b>		
Very serious	81	38.2
Serious enough	75	35.4
Little serious	46	21.7
Not at all serious	10	4.7

Chi-squared analyses revealed that the two genders did not differ in age group ( $p=0.255$ ), in education level ( $p=0.241$ ) or family status ( $p=0.924$ ).

One of the most effective ways to identify what is important to consumers is to ask them directly. In order to explore primary health care users' perceived quality of care, care expectations and satisfaction with primary care provided it was conducted a qualitative research by using triangulation (in-depth interviews, focus group and direct field observation). The themes and the categories identified through the content analysis of the interviews were identified independently by three raters and were used to develop the Expectations-Perceived Quality-Satisfaction with Primary Care Services Scale (E-PQ-SPCSS). The development of the scale was based on a grounded theory for users' satisfaction interpretation Raftopoulos, 2005, according to their own assumptions regarding the quality of care provided, on the relevant literature and on the researchers' experience. Consideration was given to the balance of questions within the modules and to the inclusion of phrases and words that users use to evaluate provided care. The scale was tested in a pilot study sample in order to explore the degree of understanding of the questions from the interviewees. Minor changes in the wording were suggested by the pilot study.

An anonymous and especially designed questionnaire was used to investigate users' expectancies regarding primary care services, perceived quality of primary care and satisfaction with provided care. The questionnaire was administered in the Greek language. The first part of the questionnaire included questions to elicit information on demographic, employment, socio-economic characteristics of the participants, health status, details regarding their attitudes towards primary care and global scales measuring satisfaction with care provided. The second part of the questionnaire was the E-PQ-SPCSS which consisted of 27 questions covering all areas of primary care provided. The users' expectations scale consisted of 27 statements defining what users expect from the primary care setting, the perceived quality of primary care scale that assessed what users consider as quality of care components and finally satisfaction with care scale that consisted of the same 27 statements asking from the users to answer how they feel with care provided. In this study, users' expectations, perceived quality and satisfaction were measured within the context of at least a single visit.

The users were asked to rate their Global Satisfaction with Primary Care (GSPC), using a 6 point Likert scale ranging from very satisfied to

not at all satisfied (e.g. how do you feel with medical care provided?). In order to determine the perceived role of the users in the care process, they were asked to express their feelings by answering to the following assumption: "users have the right to judge the quality of hospital care". To predict users' future intention, they were asked to answer to the statement: "I intend to revisit the Primary Care setting whenever needed in the future", by using a 5 point Likert scale ranging from I strongly agree to I strongly disagree.

The face validity of the questionnaire was explicitly assessed through feedback from a panel of experts (researchers, primary health-care professionals, and academics) who reviewed the questionnaire and confirmed it with minor wording changes.

Expert validity is a form of content validity, which is demonstrated by asking experts to review the content of the instrument and comment on its adequacy. According to Lynn (1986), the minimum number of experts required is five. In this research the panel consisted of two nursing researchers, four specialized primary care nurses, and one public health nurse. Initially, the experts were asked to respond independently to a questionnaire that was developed for the assessment of the questionnaire. They were asked to rate the clarity, the concreteness, the centrality, and the importance of each item using a three-point rating scale (1 = "not clear", 2 = "clear", and 3 = "very clear"). The items were considered adequate if there was >90% agreement. The feedback offered tips and suggestions to improve the questionnaire.

### Statistical analysis

All items were coded and scored, and questionnaires that were completed were included in the data analysis set. Individual items that were not answered were excluded from the analysis. SPSS 18 (SPSS Inc. Chicago Ill) computer software was used for statistical analysis of the obtained data. The Pearson correlation coefficient was used to calculate the linear correlation of two continuous variables. The chi-squared test was used to explore the existence of a statistically significant relationship between the categorical variables. The *t*-test was used to assess whether the means of two groups were statistically different from each other. Values <0.05 were considered to be statistically significant, unless otherwise stated.

## Results

As shown in Table 1 the majority of the participants (n=81, 38.2%) considered their health problem as the reason for visiting the primary care setting. For the majority of the users (n=100, 47.2%) their symptoms lasted for a semester. Thirty seven (17.5%) users answered that their symptoms lasted for a month and for a week. Seventy nine (37.3%) users visited the same physician for the same problem five times, while 13 (6.1%) visited him four times, 47 (22.2%) three times and for 73 users (34.4%) it was the first time they visited the primary care physician. We asked from the participants to answer how many physicians they have visited for the same problem. Two users (0.9%) answered five physicians, 24 (11.3%) four, 20 (9.4%) three, 64 (30.2%) two, 96 (45.3%) one and for 6 (2.8%) participants it was the first time.

For the majority of the participants (n=116, 54.7%) the reason of their visit was routine physical examination for a chronic health problem while 68 users (32.1%) answered that they suffered from an acute disease and 26 (12.3%) came to their physician for their usual drugs prescribing. Eighty three participants (39.2%) visited the physician for follow up reasons, while 68 (32%) users visited the primary care centre because the physician was familiar to them and 61 (28.8%) users because it was very close to their home.

The vast majority of the users (n=170, 80.2%) felt that the medical diagnosis was adequate to their health condition while two users (0.9%) were doubtful and forty users (18.9%) answered that they did not know whether or not medical diagnosis was the right one. Sixty three users (29.7%) declared their intention to visit another physician for a second opinion, while eighty four participants (39.6%) answered that they did not intend to visit another physician and sixty five users (30.7%) were uncertain about their intention. Users were asked to rate the following statement: "*the users should have the right to judge the primary care provided*". Furthermore we asked from them to rate their global satisfaction with their decision to visit the specific facility. The vast majority of the users (n=197, 92.9%) stressed that they should have the right to evaluate primary health care services whereas fifteen (7.1%) users were neutral. Two hundred and two users (95.3%) were somewhat satisfied with their decision to visit the primary care

facility while four users (1.9%) were not at all satisfied and six (2.8%) users were neutral.

The overall satisfaction of the participants with the primary care services was 97.2%, with the medical care provided was 95.3% and with nursing care was 92.5%. Nursing care was provided to 126 (59.4%) users. These users were more satisfied ( $p < 0.0001$ ) with global nursing care provided ( $4.52 \pm 0.70$ ) than those who were not provided a nursing care intervention ( $3.53 \pm 1.73$ ).

Total scores of 27-item users' expectations explained 5% of the variance in satisfaction with primary care provided and 27-item perceived quality scores explained 10% of the variance. Users' expectations explained 45% of the variance of the perceived quality of primary care services.

By summing the 27-items' ratings we obtained the total score of each user for the three subscales (Expectations, Perceived Quality and Satisfaction with Primary Care Services). Paired t-tests were carried out to determine the role of perceived quality of care and expectations to subsequent satisfaction. The Paired t-tests were significant and indicated that for most users (n=182) their expectations from their visit were greater than their satisfaction ( $p < 0.001$ ). It was also shown that for 190 users their perceived quality of primary care provided was greater than their level of satisfaction ( $p < 0.001$ ).

## Factor analysis

Measured by the Kaiser-Meyer-Olkin (KMO) (Kaiser, 1974) statistics, sampling adequacy predicts if data are likely to factor well, based on correlation and partial correlation. There is a KMO statistic for each individual variable, and their sum is the KMO overall statistic. KMO varies from 0 to 1.0 and KMO overall should be 0.60 or higher to proceed with factor analysis. The KMO statistics for the SPCSS ratings was 0.832 (Bartlett's Test of Sphericity = 4718.084,  $p < 0.0001$ ), a very good value because of our large sample size.

Factor analysis followed by an orthogonal (varimax) was undertaken on the Satisfaction with Primary Care Scale (SPCSS). Factor analysis with promax rotation produced the same item grouping with items loading on the same factors. This supports multidimensionality of the scale and discriminant validity. According to Norman & Streiner (1994) formula, for minimum loadings when the size N, is 100 or more, loadings less than 0.30 should have been omitted. Finally we

used factor loading cut-off value  $>0.50$  as a defining part of that factor (Table 2).

Based on Cattell's visual scree plot, four factors accounting for 64.34% of the item covariance were extracted and rotated to varimax criterion. The rotated component matrix, eigenvalue and percentages of variance explained are illustrated in Table 2. Extraction communalities ranged from 0.429 to 0.830. Because these data confirmed our rational conceptualization of the underlying dimensions of satisfaction with primary care services, the component solution was used to develop the four scored scales that were labelled:

- *Nurse's technical and interpersonal competence*: the first factor accounted for the 39.27% of the total variance in the original data. This factor consists of seven items related to the performance of the primary care nursing staff.

- *Physician's interpersonal competence*: this factor accounted for the 10.62% of the total variance in the original data. Questions loading this factor related to the performance of the primary care physician.

- *Physician's technical competence*: this factor accounted for the 7.79% of the total variance in the original data. It includes questions related to satisfaction with physician's abilities.

- *Structure characteristics*: the fourth factor accounted for the 6.64% of total variance in the original data. This factor included five questions relating to the adequacy of the areas in the facility, and the overall management of the primary care centre.

As shown in Table 3 participants expected more to be paid attention from the physician by explaining medical treatment and by giving adequate advices as well as to be willing to answer to user's questions. On the other hand users considered as more important and thus as quality of care dimension to be respected as human beings and to be protected by the nurse during their physical examination acting as user's advocate. They were satisfied with physician's competency and with the fact that physician did not asked for an out of pocket payment.

### **Reliability analysis of the scales**

Internal consistency of the E-PQ-SPCSS and the GSPC subscale proved excellent [16] as Cronbach's alpha ranged from 0.93 to 0.95, exceeding 0.93 in all the cases (Table 3). Besides, the reliability of the scores of the four factor

subscales revealed from the factor analysis ranged from 0.83 to 0.92.

### **Scales' validity**

The face validity of the subscales and the E-PQ-SPCSS was explicitly assessed through feedback from a panel of experts who reviewed the scales and confirmed -with minor wording changes- its face validity. Content validity of the scale was a major concern during the design phase of the scale. It was assured through the literature review, the qualitative research and the comments of the experts' panel.

**Table 4 Global scales' and subscales' reliability**

Scales	Items	Mean (range)	Cronbach's alpha
GSPC	4	3.84 (1.25)	0.84
27-item EPCS	27	4.44 (1.11)	0.95
27-item PQPCS	27	4.47 (1.12)	0.94
27-item SPCS	27	3.47 (1.38)	0.93
Factor 1	7	3.61 (1.13)	0.92
Factor 2	7	3.69 (1.41)	0.84
Factor 3	8	3.46 (1.38)	0.87
Factor 4	5	3.15 (1.14)	0.83

**GSPC: General satisfaction with primary care provided**

**EPCS: Expectations from the Primary Care Services**

**PQPCS: Perceived quality of the Primary Care Services**

**SPCS: Satisfaction with the Primary Care Services**

As evidence of predictive validity of the scales was considered the answer to a question of behavioural intention: "*I intent to revisit the primary care setting whenever needed in the future*". Table 4 shows a correlation matrix of the data relating to global judgments about care, to allow the investigation of the convergent and discriminant validity of the obtained measures. Convergent validity involves the extent to which a measure correlates highly with other measures designed to measure the same construct.

A high correlation between the items Global Quality of Care (QC), Global Quality of Nursing Care (QNC), Global Quality of Medical Care (QMC), indicated some degree of convergent validity (Table 4).

Convergent validity also involves the extent to which a measure correlates highly with other measures designed to measure the same construct. A high correlation between the satisfaction subscales and the 27-item satisfaction with primary care scale score indicated some degree of convergent validity. Discriminant validity involves the extent to which a measure is novel and does not simply reflect some other variable. Multiple regression analysis revealed that 39.8% of variance in the GSPC scale was explained by scores on the four subscales of the E-PQ-SPCSS: (1) Nurse's technical and interpersonal competence (F1) (beta=-0.213; p=0.002) (2) Physician's interpersonal competence (F2) (beta=0.240; p=0.003) (3) Physician's technical competence (F3) (beta=0.532; p<0.001) (4) Structure characteristics (F4) (beta=0.044; p=0.474). Beta weights revealed that all factors except for the "structure characteristics" made a significant individual contribution to explaining variance in GSPC subscale scores, with the "physician's technical competence" subscale showing the strongest predictive power.

**Table 5 Correlation Matrix of the Global Variables and the 27-item SPCS**

Variable	Revisit	GSPC	GSMC	GSNC
GSPC	0.550			
GSMC	0.490	0.825		
GSNC	0.151	0.478	0.437	
27-item SPCS	0.253	0.515	0.465	0.599

All correlations are significant at the 0.01 level (2-tailed)

### *Nurse's role in the primary care setting*

Nurse's role in primary care was evaluated by asking the users what is the role of nurse and whether they consider his/her presence essential or not. Ninety two (43.4%) participants stressed that primary care nurse is physician's assistant, while 51 (24%) answered that the nurse helps to everything the user needs, 47 (22.2%) replied that nurse is physician's secretary or assistant and 22

(10.4%) answered that they do not perceive any role of the nurse in the primary care. Nevertheless 133 (62.7%) users agreed that nurse's presence in primary care health centre is essential. It is notable that 78 (36.8%) users declared to be neutral.

The t-test showed a statistical significant difference (p<0.001) between those who had a nursing intervention and those who did not regarding their answer to the necessity of the nurse in a primary care setting. Those who had received a nursing intervention were more convinced for the necessity of the nurse (n=126, 3.71±0.47) instead those who did not (n=86, 3.49±0.50). Besides between those who had received a nursing intervention 42.1% have answered that the nurse is physician's assistant and 37.3% that helps to everything needed in the primary care service, instead of 45.3% and 4.7% of the users who have not received a nursing intervention. The observed difference could be used as a criterion validity indicator. The criterion was the provision of a nursing intervention.

### *The effect of socio-demographic characteristics to users' expectations, perceived quality and satisfaction with primary care provided*

Age was correlated with global satisfaction with primary care (r=0.315, p<0.001) with medical (r=0.194, p<0.001) and nursing care (r=0.183, p<0.001) as well as with expectations total score (r=0.295, p<0.001), perceived quality of care total score (r=0.366, p<0.001) and satisfaction with care total score (r=0.207, p=0.002).

The users, who visited the health centre because the physician was familiar, were more satisfied with their visit (4.41±0.85 vs 3.31±1.26) and with the medical care (4.43±0.89 vs 3.26±1.42) than those who have visited it because it was near to their home.

T-test (p=0.013) revealed that men were more satisfied (3.98±1.27) with the way the physician respected them as a human being compared to women (3.51±1.46), with the way the nurse protected their personal dignity and privacy during physical examination (p=0.011) (3.95±1.14 vs 3.47±1.57), with the way the physician advised them how to maintain healthy (p=0.045) (3.70±1.11 vs 3.40±0.98), the way physician was on time in his appointment (p=0.018) (3.04±1.33 vs 2.60±1.36) and the way the physician prescribed all the needed laboratory tests (p=0.001) (3.83±1.10 vs 3.32±1.05).

T-test ( $p=0.035$ ) showed that women rated more perceived quality of primary care ( $122.47\pm 12.7$ ) than men ( $118.36\pm 15.4$ ). T-test ( $p=0.008$ ) revealed that elderly participants were less satisfied ( $2.78\pm 1.00$ ) with the way the physician maintained the schedule compared to young participants ( $3.23\pm 1.18$ ), with the way the nurse explained to the user whatever told from the doctor and was not clear for him ( $p<0.001$ ) ( $3.13\pm 1.37$  vs  $3.89\pm 1.18$ ), with their feeling that nurse cared for their health problem ( $p=0.001$ ) ( $3.09\pm 1.38$  vs  $3.84\pm 1.19$ ), with nurse's confidentiality ( $p=0.005$ ) ( $2.60\pm 1.36$  vs  $3.04\pm 1.33$ ), with the physician's punctuality for his appointment ( $p=0.004$ ) ( $2.33\pm 1.32$  vs  $2.95\pm 1.34$ ), but were more satisfied with the way physician prescribed for all the needed laboratory tests ( $p=0.031$ ) ( $3.80\pm 0.96$  vs  $3.45\pm 1.13$ ).

ANOVA revealed that those who mentioned that they suffered from a very serious health problem were significantly far more satisfied with their visit ( $102.21\pm 21.44$ ) compared to those who mentioned it was serious enough ( $92.74\pm 16.99$ ), serious to some extent ( $87.04\pm 19.75$ ) and not at all serious ( $81.00\pm 25.81$ ).

## Discussion

The study evaluated satisfaction with quality of primary care services in Greece, as well as expectations and perceived quality of care provided. Psychometric characteristics of the 27-item E-PQ-SPCSS scale were good enough to allow further use in primary care facilities for quality of care evaluation reasons. What distinguishes this questionnaire and makes it a useful tool for evaluation of primary care services is that it explores users' satisfaction in accordance with their expectations and perceived quality of care provided.

The overall satisfaction with primary care services was 97.2%. A similar result has been found in several studies [Gadallah et al, 2003; Raftopoulos, 2005]. Aldana et al. (2001) and Margolis et al. (2003) reported lower levels of satisfaction (68.9% and 76% subsequently). These findings could be attributed to cultural differences. There was a tendency for the participants to respond favourably to the majority of the items that are included in the scales (Baltussen et al, 2002; Charalambous, 2010). Users valued the majority of the 27 selected statements of general practice care as important (Wensing et al, 2000). This is a constant finding in the Greek and in the international literature (Williams et al, 1998;

Wensing et al, 2000; Raftopoulos, 2005) and is indicative of the content validity of the scale as the items of the scale were selected according to the focus groups on which the grounded theory for users' satisfaction interpretation was based (Raftopoulos, 2005).

The overall satisfaction of the participants with the medical care provided was 95.3% and with nursing care was 92.5%. The users recognize the catalytic role of the physician in the primary care setting. (Probst, 1997). The participants were more satisfied with physician's competency. Greek users pay more attention to the respect and politeness of the physician (Aldana et al, 2001; Schattner et al, 2004). Furthermore humaneness was highly rated (Margolis, 2003). In Emirates users were less satisfied with continuity of care as opposed to Greece as it was not at all mentioned from the users. This could be attributed to the attitude of the Greek users to visit another physician for a second opinion that does not allow them to maintain continuity in care provided.

According to the Greek users of primary care services the physician should respect them as human beings and nurse should protect their personal dignity and privacy during physical examination. Groenewegen et al. (2005) have conducted a research in several countries and found that, according to the users the GP should always take the users seriously and should inform them in understandable language about the medicines that are prescribed for them. According to their research, Greek users considered "always take me seriously", "have a good understanding of my problems" and "inform me in understandable language" as majors issues of quality of care as opposed to "not keep me in the waiting room for more than 15 minutes". What Greek primary care users considered in rank order more important in their care was "physician respects me as a human being", "nurse protects my personal dignity and privacy during physical examination", "physician pays attention to explain medical treatment and to give me advice", "feeling that the physician is competent" and "physician's willingness to answer to my questions". As shown through the research, interpersonal elements consisted of the staff's human aspects of the care given (i.e. friendly, kind, respectful, courteous, personal attention, knowledgeable) were constantly quality of care elements for Greek patients.

According to Jung et al. (2002) users found more important all these aspects related to physician-user relationship and supply information such as keeping data and records confidential and

explaining the purpose of tests and treatments. In the present research nurse's and physician's confidentiality were rated as less important compared to the other aspects of care provided. One explanation could be that Greek users are less sensitive with confidentiality of their medical data either because they are sure it is guaranteed or they consider it is a professional duty and cannot interfere to. This could be attributed to the paternalistic way physicians act in Greece. As a result the physician still remains a key component in user satisfaction with primary care. On the other hand organization factors such as friendliness of the primary health care facility were rated as less important (Jung et al, 2002).

In general the users were satisfied with the physical environment of the primary care setting (Aldana et al, 2001). Several aspects of the primary care setting were evaluated as very important although they were evaluated as poorly (Jung et al, 2002). The users were not very satisfied with the consistency of the physician with the appointment time as they had to wait a lot for the physician (Aldana et al, 2001). Although users expected to be treated on time the reality did not fulfill their expectations (Aldana et al, 2001). It can be concluded that users' expectations and importance evaluations differentiate from their satisfaction. One explanation for this variance could be that Greek users believe that the care they receive is not of the highest quality. If we consider the gap between users' expectations and importance ratings with satisfaction scores as quality of primary care then the aspects of care that were rated as more important and as more expectable and evaluated from the users least positively need to be improved properly. More precisely the redesign of primary care in Greece should be based on the following areas: priority numbers, physician should not be in a hurry during the physical examination, to be on time in

his appointment. Primary care users make value judgments that influence their satisfaction with care provided by comparing the actual care with what they consider to be quality of care.

Data analysis showed that for the majority of the participants their expectations from their visit were greater than their satisfaction as well as their perceived quality of primary care provided were greater than their level of satisfaction. Furthermore women rated more perceived quality of primary care than men. As a result women considered more items of the 27-item Perceived Quality scale as quality of primary care components. According to Anderson et al. (2001) the women tend to discuss what they value in their healthcare from the perspective of their experiences in the healthcare system rather than in terms of an idealized healthcare delivery system. Thus, their expectations were based on reality rather than idealized preferences. In Greece, women are frequent users of primary care services and maintain a more criticized point of view (Raftopoulos, 2005).

The psychometric properties of the E-PQ-SPCSS were good enough indicating that the scales are reliable and adequate for group comparisons.

### Limitations of the study

One limitation of the study could be that only users who were able to read, write, and understand Greek were included in this study. This would discourage non-English speaking respondents from completing the study and limit generalization to the population. Furthermore the length of the questionnaire was of concern due to the fact that there were 27 items with additional questions on the demographic characteristics of the sample. Future studies could use a shortened version of the questionnaire.

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**Table 2** Factor analysis of the 27-item satisfaction with primary care services scale (SPCSS)

Scale items	Factors				Extraction Communalities
	1	2	3	4	
Nurse's willingness to explain to the user whatever told from the physician and was not clear for him	0.734				0.687
Feeling that nurse cares for my health problem	0.803				0.769
Nurse's friendliness	0.791				0.823
Nurse's confidentiality	0.663				0.660
Feeling that nurse is competent	0.787				0.674
Nurse's health counseling skills	0.811				0.716
Nurse treated me like a human being and not like a number	0.796				0.744
Physician's willingness to answer to my questions		0.671			0.556
Physician pays attention for explaining medical treatment and to give advice		0.513			0.525
Feeling that doctor cares for my health problem		0.807			0.830
Physician's friendliness		0.698			0.671
Physician's confidentiality		0.677			0.676
Physician treated me like a human being and not like a number		0.717			0.673
Feeling that doctor is competent		0.562			0.529
Physician respects me as a human being			0.613		0.625
Physician protects my personal dignity and privacy during physical examination			0.682		0.691
Physician advices me how to maintain healthy			0.676		0.529
Physician had enough time to take a full health history that would be useful for a correct diagnosis			0.618		0.661
Physician is on time in his appointment			0.556		0.514
Physician prescribes all the needed laboratory tests			0.733		0.608
Physician does not ask from me additionally money			0.605		0.429
Physician does not seem rushed during the physical examination			0.710		0.676
There was a comfortable and calm waiting room				0.710	0.624
The health centre was well managed				0.772	0.630
There were priority numbers				0.729	0.632
Timelines of the appointments				0.808	0.755
The primary health care facility was friendly				0.677	0.564
Eigenvalue	10.6	2.8	2.1	1.8	-
Percent variance	39.27	10.62	7.97	6.64	-

**Table 3:** Mean user expectations, perceived quality and satisfaction with primary care services

Items	Users' expectations	Users' perceived quality	Users' satisfaction
There was a comfortable and calm waiting room	4.42±0.81	4.47±1.02	3.38±1.23
The health facility was well managed	4.40±0.91	4.39±0.90	3.12±1.06
There were priority numbers	4.37±0.76	4.42±0.84	2.95±1.47
Timelines of the appointments	4.52±0.73	4.50±0.81	3.11±1.15
The primary health care facility was friendly	4.34±0.94	4.30±1.12	3.23±1.43
Physician's willingness to answer to my questions	4.57±0.72	4.55±0.72	3.75±1.05
Physician pays attention for explaining medical treatment and to give advice	<b>4.58±0.65</b>	4.62±0.62	3.68±1.06
Nurse's willingness to explain to the user whatever told from the physician and was not clear for him	4.49±0.63	4.53±0.66	3.70±1.27
Feeling that doctor cares for my health problem	4.43±0.67	4.48±0.82	3.42±1.25
Feeling that nurse cares for my health problem	4.42±0.63	4.44±0.73	3.65±1.28
Physician's friendliness	4.45±0.61	4.49±0.75	3.56±1.24
Nurse's friendliness	4.37±0.87	4.46±0.84	3.58±1.43
Physician's confidentiality	4.09±1.30	4.22±1.27	3.16±1.41
Nurse's confidentiality	4.14±1.17	4.18±1.24	3.33±1.56
Physician respects me as a human being	4.54±0.79	<b>4.69±0.68</b>	3.71±1.39
Nurse protects my personal dignity and privacy during physical examination	4.56±0.72	4.64±0.72	3.67±1.42
Feeling that the physician is competent	4.55±0.55	4.60±0.64	<b>3.86±1.02</b>
Feeling that nurse is competent	4.50±0.57	4.51±0.66	3.76±1.21
Physician advices me how to maintain healthy	4.50±0.57	4.46±0.66	3.53±1.05
Nurse's health counseling skills	4.48±0.59	4.40±0.77	3.56±1.24
Physician had enough time to take a full health history that would be useful for a correct diagnosis	4.42±0.77	4.42±1.07	3.33±1.40
Physician is on time in his appointment	4.37±1.03	4.38±1.02	2.79±1.36
Physician prescribes all the needed laboratory tests	4.45±0.74	4.53±0.62	3.54±1.09
Physician does not ask from me additionally money	4.54±0.65	4.50±0.88	<b>3.86±1.38</b>
Physician does not seem rushed during the physical examination	4.49±0.71	4.49±0.76	3.29±1.36
Physician treated me like a human being and not like a number	4.53±0.57	4.50±0.72	3.51±1.26
Nurse treated me like a human being and not like a number	4.50±0.57	4.52±0.65	3.74±1.23

