

Determinants of users' satisfaction with primary health care settings and services in Saudi Arabia

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Abstract

Objective. To identify the components of primary health care that cause most concern to service users and to identify socio-demographic and other factors associated with satisfaction among the users of primary health care centres.

Design. Interviews conducted by well-trained interviewers with a random sample of heads of households. The questionnaires were composed of questions that measure the extent of satisfaction with settings and services in the primary health care centres using a 5-point rating scale from very satisfied to very dissatisfied.

Setting. The community of Qateef, Eastern Saudi Arabia.

Study participants. A sample of 802 households representing 838 families was chosen randomly from the housing lists of the primary health care centres in Qateef. There were 40 vacant houses and nine refusals. Thus the number of heads of households actually interviewed was 789.

Results. Waiting area structure, confidentiality measures and environmental structure were the areas that caused most concern to service users. The factors that showed the greatest association with satisfaction were the type of the primary health care centre building (purpose-built or rented), literacy status of the household head (literate or illiterate), the extent of the primary health care centre utilization (regular or infrequent). Surprisingly, age showed no association when other characteristics of the respondents were adjusted for, and sex was less important than in other studies.

Conclusion. How regular the respondent was in using his or her primary health care centre was more predictive in deciding the extent of satisfaction with the various components in the study than the other variables. Socio-demographic factors played minor roles in deciding the extent of satisfaction, although each had a deciding role with one or more, but not all, components.

Keywords: patient satisfaction, primary health care, quality assurance, structure, utilization

A concern for patient satisfaction has been taken up by many health care authorities worldwide with the aim of responding to the client's needs when addressing the issue of quality improvements in health services. Increasingly, patients' views are recognized as essential components in the evaluation of the quality of health care [1–9].

A general consensus is emerging in the field of Health Care quality assurance (QA) that the concern for the quality of health services should not be limited to clinical effectiveness or economic efficiency but rather should include social acceptability as an important quality objective [2–4,10,11]. Indeed Donabedian has suggested that patient satisfaction is a major quality outcome in itself [2,3]. Patient satisfaction

surveys have a long history in the assessment of consultations and patterns of communication [12,13] and are amongst the best means of assessing the interpersonal aspects of care [3]. Thompson and Sunol, amongst others, argue that it is unsatisfactory if the evaluation of quality improvement efforts are based only on staff assessment and maintain that a real improvement in quality of care cannot take place unless patients' views are involved [14]. Whatever quality might represent to users of health services, their conception of quality undoubtedly affects their choices of health care alternatives.

The multitude of studies investigating patient satisfaction have used a wide range of measurement tools depending on

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Table 1 Studies describing one or more of the components used in this study, grouped by dimension

Dimension	Reference
Communication, explanation and doctor–patient interaction	McGhee 1961 [15]; Cartwright 1965 [16]; Korsch <i>et al.</i> 1968 [17]; Francis <i>et al.</i> 1969 [18]; Houston and Pasanen 1972 [19]; Kinsey, Bradshaw and Ley, 1975 [20]; Wriglesworth and Williams 1975 [21]; Berkanovic and Marcus 1976 [22]; Blanchard <i>et al.</i> 1977 [23]; Woolley, Kane, Hughes and Wright 1978 [24]; Ware, Davis-Avery and Stewart 1978 [25]; Locker and Dunt 1978 [26]; Parasuraman, Zeithaml and Berry 1988 [27]; Jacoby 1989 [28]; Hall and Dornan 1988 [29]; Rashid <i>et al.</i> 1989 [30]; Weiss and Senf 1990 [31]; Fitzpatrick 1991 [13]; Evason and Whittington 1991 [32]; Donabedian 1992 [33]; Witty 1992 [34]; Thompson 1993 [35]; Ehnfors and Smedby 1993 [36]; Meredith 1993 [37]; Leavey and Wilson 1993 [38]; Calnan <i>et al.</i> 1994 [39]; Scott and Smith 1994 [40]; Biderman, Carmel and Yeheskel 1994 [41]; Smith 1992 [42]; Thomas <i>et al.</i> 1995 [43]; Cohen, Forbes and Garraway 1996 [44]
Physical surroundings	Ware 1978 [45]; Osterweis and Howell 1979 [46]; Ware 1981 [47]; Nguyen <i>et al.</i> 1983 [48]; Pascoe 1983 [49]; Parasuraman, Zeithaml and Berry 1988 [27]; Weiss and Senf 1990 [31]; Fitzpatrick 1991 [13]; Smith 1992 [42]; Donabedian 1992 [33]; Witty 1992 [34]; Thompson 1993 [35]; Meredith 1993 [37]; Gritzner 1993 [50]; Leavey and Wilson 1993 [38]; Ehnfors and Smedby 1993 [36]; Biderman, Carmel and Yeheskel 1994 [41]; Scott and Smith 1994 [40]; Thomas <i>et al.</i> 1995 [43]
Consultation time	Caplan and Sussman 1966 [51]; Korsch <i>et al.</i> 1968 [17]; Ludy <i>et al.</i> 1977 [52]; Ware, Davis-Avery and Stewart 1978 [25]; Stiles, Putnam, Wolf and James 1979 [53]; Aday <i>et al.</i> 1980 [54]; Ware 1981 [47]; Weinberger <i>et al.</i> 1981 [55]; Weinberger <i>et al.</i> 1981 [56]; Ross <i>et al.</i> 1981 [57]; Nguyen <i>et al.</i> 1983 [48]; Morrel <i>et al.</i> 1986 [58]; Rashid <i>et al.</i> 1989 [30]; Calnan <i>et al.</i> 1994 [39]
Waiting area environment and privacy	Houston and Pasanen 1972 [19]; Ware, Davis-Avery and Stewart 1978 [25]; Ware 1981 [47]; Nguyen <i>et al.</i> 1983 [48]; Pascoe 1983 [49]; Evason and Whittington 1991 [32]; Cohen, Forbes and Garraway 1996 [44]
Staff attitude	Ware, Davis-Avery and Stewart 1978 [25]; Ware 1978 [45]; Nguyen <i>et al.</i> 1983 [48]; Ware and Hays 1988 [59]; Parasuraman, Zeithaml and Berry 1988 [27]; Hall and Dornan 1989 [29]; Weiss and Senf 1990 [31]; Fitzpatrick 1991 [13]; Evason and Whittington 1991 [32]; Donabedian 1992 [4]; Gritzner 1993 [50]; Ehnfors and Smedby 1993 [36]; Bendtsen and Bjurulf 1993 [60]; Thomas <i>et al.</i> 1995 [43]
Activities and procedures	Ware, Davis-Avery and Stewart 1978 [25]; Ware 1978 [45]; Osterweis and Howell 1979 [46]; Ware 1981 [47]; Nguyen <i>et al.</i> 1983 [48]; Pascoe 1983 [49]; Ware and Hays 1988 [59]; Parasuraman, Zeithaml and Berry 1988 [27]; Weiss and Senf 1990 [31]; Fitzpatrick 1991 [13]; Bendtsen and Bjurulf 1993 [60]; Thompson 1993 [35]; Ehnfors and Smedby 1993 [36]; Leavey and Wilson 1993 [38]; Calnan <i>et al.</i> 1994 [39]; Biderman, Carmel and Yeheskel 1994 [41]
Outcome of care	Ware, Davis-Avery and Stewart 1978 [25]; Ware 1978 [45]; Nguyen <i>et al.</i> 1983 [48]; Ware and Hays 1988 [59]; Fitzpatrick 1991 [13]; Witty 1992 [34]; Bendtsen and Bjurulf 1993 [60]
Waiting time	Alpert <i>et al.</i> 1970 [61]; Ware, Davis-Avery and Stewart 1978 [25]; Osterweis and Howell 1979 [46]; Ware 1981 [47]; Ware and Hays 1988 [59]; Evason and Whittington 1991 [32]; Meredith 1993 [37]; Biderman, Carmel and Yeheskel 1994 [41]

their perspective on the definition of patient satisfaction. We have attempted to classify these tools into a manageable set of dimensions underlying the notion of quality of health care to provide a brief overview.

The dimensions in the set we compiled for this study fit neatly into Donabedian's 'structure, process, outcome' model

of quality of health care, and our study draws on these dimensions to construct a tool appropriate to the setting of primary health care (PHC) in Qateef. As shown in Table 1, many studies include a judicious mixture of these dimensions to demarcate their particular perspective; the importance of each dimension is probably very context specific. However,

Table 2 Frequency distribution of the various independent variables among the respondents

Independent variable	<i>n</i>	%
Age (years)		
15–29	150	19.0
30–59	550	69.7
≥ 60	89	11.3
Sex		
Female	527	66.8
Male	262	33.2
Literacy status		
Literate	406	51.5
Illiterate	383	48.5
Area of residence		
Town	373	47.3
Village	416	52.7
Type of building used by PHC centre		
Purpose-built	227	28.8
Rented	562	71.2
Extent of PHC centre use		
Regular	419	53.1
Infrequent	370	46.9

in their wide ranging review Calnan *et al.* [39] conclude that the main emphasis should be placed on examining aspects of doctor–patient relationships and professional skills, rather than on the accessibility and availability of health services. We should add to this comment the increasing emphasis that is being placed on the notion of consumers' expectations as an influence on satisfaction [62–65].

Although some researchers, for example Weiss [66], have found little or no association of patient satisfaction with socio-demographic characteristics of service users, a number of consistent findings can be identified in the literature that relate patient characteristics to their level of satisfaction with care. The socio-demographic categories that have demonstrated the most consistent relationships with service satisfaction are the age and sex of patients, although even here there are contradictory findings.

It is generally reported that older patients tend to be more satisfied with health care than their younger counterparts. This seems to be particularly true in relation to communication and attitude of health care staff but less true in terms of access to care and outcomes of care. It is not clear whether this association represents a difference between generations or whether individuals *per se* become more satisfied as they grow older. Females appear to be more satisfied in general than males although at least one study reports higher satisfaction in men than women [41]. The setting for the interview (at the health facility or at the respondent's home) may well be an important influence on this difference. Finally although one review [25] suggests that less educated persons tended to be less satisfied with the conduct of health care providers, the general trend in satisfaction studies is for more specific dissatisfactions to be expressed by the better educated.

The drive for client directed quality improvements in Saudi Arabia is relatively recent. There were several patient satisfaction studies in Saudi Arabia each with different methodology, instruments and scoring scales [67–72]. As we will see later these initial studies in Saudi Arabia have produced inconsistent findings, with differences in perspective and methodology no doubt contributing to different results. Undoubtedly these early steps will be superseded by more sophisticated applications of QA. In this study, of which a small part is reported here, we have attempted to adopt a more comprehensive approach, using three methods of monitoring the quality of PHC services with the aspiration that the three data sets would provide some means of triangulating the quality assessments provided. The three methods were:

- questionnaire survey of users' satisfaction at the community level;
- questionnaire survey of users' satisfaction at the health centre level;
- systematic review of PHC activities at the health centre level.

This study is by far the largest community-based satisfaction study in Saudi Arabia. It attempts to identify the factors that are related to the health care consumers' satisfaction so that a more effective approach can be taken to quality improvement in PHC centres in the Qateef area. This article reports only on the household survey, later reports describe the results from the other two methods.

Subjects and methods

This study was carried out in a random sample of households in Qateef area in Eastern Province of Saudi Arabia. The area has a population of around 250 000 served by 26 PHC centres. At the time of the study there were only 25 working PHC centres (one centre was under reconstruction and its population was diverted to one of the nearby centres). The study was carried out during March and April 1995. It was decided that a 95% confidence interval of $\pm 5\%$ would provide adequate precision for estimating the levels of satisfaction in the study; hence a sample size of 400 was appropriate. Given that we were also interested in looking at age and sex breakdowns of the data a minimum sample size of 800 was aimed for. Random sampling of the households covered by each PHC centre was undertaken, with the sample size for each catchment area being proportional to the number of the households in that area. The total number of households selected was 802 (838 families). All households in Qateef are numbered so the task of selecting and finding households was easy. Random sampling numbers were used to select the households whose heads were to be interviewed. Based on the annual statistics in Qateef PHC department for the previous years, the number of females visiting PHC centres is usually twice that of males. This is due mainly to the fact that females usually play a dominant role in taking care of their family's health. Based on this, females' level of

Table 3 The 10 components of service quality and their constituents

Component	Typical items
Environment structure	Satisfaction with building condition, cleanliness, setup, staffing, furniture, technical facilities, working hours, working shifts
Waiting area structure	Satisfaction with situation, space, furniture, set-up, cleanliness, privacy, availability of drinking water, availability of bathrooms, availability of health education materials
Waiting time	Satisfaction with the length of time usually spent waiting in the centre
Consultation time	Satisfaction with the length of time usually spent with the doctor
Activities	Satisfaction with the various activities conducted during visits, for example how satisfied are you with the questions the doctor asked about your complaint?
Privacy measures	Satisfaction with the privacy measures taken during the consultation
Confidentiality measures	Satisfaction with the confidentiality measures taken for health problems
Attitude	Satisfaction with the attitude of the various health personnel encountered, for example how satisfied are you with the attitude of the filing clerk?
Explanation	Satisfaction with the explanation given about the various activities conducted during visits, for example how satisfied are you with the explanation given to you about growth charting?
Perceived outcome	Satisfaction with the result of the visit to the centre

satisfaction could be taken as representative of the family as a whole. Hence, it had been decided that the proportion of females to males to be interviewed in their households should be decided by their proportion among patients visiting PHC centres in the area.

There were 40 vacant households and nine refusals. Therefore the number of family heads actually interviewed was 789: 527 females and 262 males (Table 2).

The heads of the households were interviewed by one of a group of trained interviewers. This group had five female and two male interviewers; all are university graduates and had previously participated in more than one community survey. They had received extensive training on interviewing techniques both in the classroom as well as in the pre-testing and the piloting stages of the study. All of the interviewers were from the local area and spoke the local dialect.

Although no content analysis or focus groups as such had been made, extensive efforts were made to identify quality components, socio-demographic and other variables that might be important to the study. These components and variables were identified using many methods. Previous studies in Saudi Arabia, as well as in other countries, identified a wide range of areas and characteristics that were included in the initial questionnaire and some of them were either excluded or modified later. The insights of the colleagues in the department as well as the authors' experience helped in identifying some other dimensions. Pretesting the questionnaires at various levels and localities revealed some of the other areas and characteristics that have been included in the instruments. Many points were raised during the various meetings with the interviewers that informed the modification

of questions, or even changed the conceptualization of the variables. In addition, the comments expressed by the respondents in response to the open question did not reveal any new issues. All of this is thought to add to the content validity of the questionnaires.

In this paper, 10 components of the quality of services delivered at PHC centres are reported on and linked to six variables of service users. The time scale and our inclination to increase the compliance of the respondents by having as short an instrument as possible forced us not to include many other issues such as health status improvement. It is hoped that future studies will address them.

Table 3 shows that the components and their items cover the various activities, services and settings encountered in PHC and deal with technical, interpersonal, organizational as well as communicational aspects in the various activities. Questions that deal with a common dimension were grouped into a composite item. A 5-point rating scale (very satisfied, 5; satisfied, 4; uncertain, 3; dissatisfied, 2; very dissatisfied, 1) was used for the questions seeking the extent of satisfaction of the respondents with the various structural and technical aspects in their health centres ranging from very satisfied to very dissatisfied. The number of items in each component is variable, ranging from one in the waiting time component to 21 in activities component.

A score was allotted to each response, and an average satisfaction value was then calculated for each respondent. Two types of average ratings were constructed, one that gave a component satisfaction category from very satisfied to very dissatisfied (for non-parametric analysis) and one that gave a component satisfaction mean score from 1.0 to 5.0 (for

Table 4 The satisfaction rate of respondents on each of the ten quality of service components

Component	Satisfaction rate (%)	95% Confidence interval
Attitude of staff	96.4	95.0–97.8
Perceived outcome	88.4	86.0–90.1
Activities	86.2	83.6–88.8
Privacy measures	82.8	80.0–85.6
Consultation time	79.7	76.7–82.7
Waiting time	74.9	71.7–78.1
Explanation	64.7	61.2–68.2
Environment structure	63.8	60.2–67.4
Confidentiality measures	62.4	58.8–66.0
Waiting area structure	57.7	54.0–61.4

parametric analysis). Although slightly skewed, the distribution of these mean scores is sufficiently normal to use the parametric techniques of *t*-test and one-way analysis of variance (ANOVA). These tests are used to study associations of the socio-demographic variables with the component satisfaction. Significance levels are given to three decimal places. Multiple regression analysis was applied in cases where more than one variable was associated with satisfaction for any of the multi-item components.

For each respondent, the component mean score was calculated by summing the values of all valid responses to the items in the component and dividing it by the number of the valid responses. Because there was no rationale for ascribing different weights to the items they were weighed equally. This produced a score for each respondent of 1.0–5.0 which represented the average of the response values given for each item. Each individual component score was then re-coded to produce an overall satisfaction category for that component as follows: very dissatisfied, 1.00–1.50; dissatisfied, 1.51–2.50; uncertain, 2.51–3.50; satisfied, 3.51–4.50; very satisfied, 4.51–5.00.

Although it is recognized that both of these mean satisfaction ratings do some injustice to the complexity of the individual response to the different items that make up any component, they do at least provide a measure for comparisons between subgroups in the sample on their overall satisfaction with each component. Grouping the very satisfied and the satisfied together under 'satisfied' and the very dissatisfied and the dissatisfied together under 'dissatisfied' was made only to show satisfaction (and dissatisfaction) rates (as in Table 4) with no parametric analysis made on these groups.

Cronbach's α was calculated to assess the level of internal consistency and so reflect the reliability of the components with multiple items. Table 5 shows that internal consistency of these component measures is generally high (>0.7).

Except for the components of waiting time, confidentiality measures, privacy measures and the perceived outcome which

Table 5 Cronbach's α internal consistency reliability coefficient for the questionnaires

Component of satisfaction	Cronbach's α (internal consistency)
Environment structure	0.76
Waiting area structure	0.78
Attitude	0.86
Activity	0.85
Consultation time	0.30
Explanation	0.84

consist of only one question/item, the other six components consist of multiple items.

In addition, the questionnaires were subjected to face and consensual validity by taking into consideration the experiences of the author and the public. On the other hand, the following findings in the study could be taken as fulfilling construct validity:

- (i) The regular users are significantly more satisfied than the irregular users; eight of the 10 components studied have *P*-values of 0.001–0.005. It is to be expected that the people who are more satisfied with the PHC services are more regular users of these services and vice versa.
- (ii) The longer the waiting time or the time that is usually spent in the PHC centre the lower the satisfaction (correlation coefficient, -0.5068 , $P < 0.001$).
- (iii) Each of the components used in the study correlated positively with the general perceived outcome of care. Correlation ranged between 0.25 and 0.49 indicating that the components are related to the general perceived outcome of care. Having no correlation meant that the components could not be claimed to be part of the overall construct of satisfaction.

Two types of analysis were performed.

- (i) Analysis of the socio-demographic and other characteristics of the sample: both the socio-demographic characteristics of the responders and their utilization pattern of PHC centres were analysed by univariate analysis methods.
- (ii) Calculation of composite scores for the various components and univariate and bivariate analysis of component scores to:
 - identify those components of PHC performance that cause most concern.
 - Identify associations with socio-demographic characteristics using *t*-test and ANOVA test (SPSS). When the level of satisfaction appeared to be associated with more than one characteristic, multiple regression analysis was used to identify the most influential characteristic. This was carried out only for components where the total score was reasonably non-skewed.

Table 6 Relative importance of the associations between the quality of service components and the respondent characteristics as indicated by β -values (P -values) from multiple regression analyses

Component	Extent of PHC centre use	Literacy status	Sex	Age	Area of residence	PHC centre building
Attitude	-0.155 (<0.001)	—	—	—	—	-0.105 (<0.01)
Consultation time	-0.118 (<0.005)	0.177 (<0.001)	—	—	0.101 (<0.05)	-0.135 (<0.001)
Activities	-0.183 (<0.001)	—	-0.144 (<0.005)	—	—	—
Environment structure	-0.151 (<0.001)	0.158 (<0.001)	—	—	—	—
Waiting area structure	-0.089 (<0.005)	0.184 (<0.001)	-0.118 (<0.005)	—	—	0.197 (<0.001)
Explanation	-0.180 (<0.001)	0.088 (<0.005)	-0.119 (<0.01)	—	—	—

Results

Table 2 shows the frequency distribution for each of the socio-demographic characteristics among the respondents in the study. Table 4 shows the satisfaction rate each of the components received. The satisfaction rate is the proportion of the sample respondents who replied 'very satisfied' or 'satisfied' (i.e. combining these two categories to produce satisfaction rates). Waiting area structure, confidentiality measures and environmental structure received the lowest rates of satisfaction, and so they are the areas that cause most concern to the service users and this identifies them as the priority areas for improvement. Attitude, perceived outcome and activities received the highest rates.

Bivariate analysis of the relationship between each component and characteristic pair identified multiple significant associations. Hence multiple regression analysis (Table 6) was undertaken to adjust for intercorrelations amongst the respondent characteristics, using each quality component as a dependent variable against the set of respondent characteristics as independent variables. Beta coefficients are given in Table 6 for those significant associations between characteristics and components of satisfaction. These coefficients indicate the relative strength of associations between a characteristic and a satisfaction component, adjusted for the influence of the other characteristics in the regression.

The characteristic with the most consistent associations with the satisfaction components was the extent of PHC centre utilization. This characteristic has significant associations with all the components of satisfaction studied here. Typical of these findings are the differences on activities and explanations. Nine out of 10 regular users were satisfied with the activities as compared with a 79% satisfaction rate amongst infrequent users. Perhaps more importantly, only 54% of infrequent users were satisfied with the explanation dimension whilst satisfaction with this aspect amongst frequent users was 72%. Literacy status of the respondents also

showed a consistent pattern of association with four of the six components. Those who are less literate were generally more satisfied.

Surprisingly, after adjustment for the influence of other characteristics, age was unrelated to any of the dimensions of satisfaction. The sex of the household head was associated with activities, waiting area structure and explanation. Consistent with the trend in other studies, females were more satisfied than males. The strongest association identified was that between the type of the PHC centre building (purpose-built versus rented) and the waiting area structure. Against our expectations only 40% of those using purpose-built PHC centres were satisfied with the waiting area structure as compared with 58% of those using rented PHC centres. Literacy status also influenced satisfaction with the waiting area structure, with 69% of those illiterate being satisfied with the waiting area structure in their centres as compared with 47% of the literate participants.

Discussion

Increasing attention is now being paid to the preconditions and causes of satisfaction. Weiss [66] states that patient background characteristics are among the most difficult to relate to the level of satisfaction, although it has been extensively studied, with inconsistent patterns emerging from different studies on patient satisfaction. Similarly no specific factor has been claimed to be the most influential in formulating satisfaction.

Patient satisfaction studies in Saudi Arabia showed variable determinants of satisfaction. The influence of nationality on the consumer satisfaction with aspects of care was studied by Al Osaimi [68] but no significant difference was found between Saudis and non-Saudis. Saeed *et al.* [69], who treated the use of the PHC centre as a proxy for satisfaction, showed that nationality, distance and educational level were associated

with utilization of the PHC centre; interestingly, and in view of our findings, age, sex and occupation were not significantly associated. Al Faris *et al.* [70] showed significantly higher satisfaction rates among the older age groups, the non-Saudis, the married, the housewives and the teachers, but not with the educational level or the sex of the respondents. Al Dawood [71] identified sex of the respondent as the most influential factor on the level of satisfaction (males being more satisfied). Makhdoom *et al.* [72] showed that young age, low education level and being a housewife were the variables associated with higher satisfaction. No one study tried to determine the influence on the level of satisfaction of factors other than socio-demographic characteristics, e.g. whether the centre building was purpose-built or rented, whether the respondent was a village or a town resident or whether the respondent was a regular user or not. Except for the two studies on satisfaction with hospital services and satisfaction with PHC attendees made in Al Khubar by Al Dawood *et al.* and Makhdoom *et al.* respectively, no one study has attempted to identify the most influential variable on the level of satisfaction.

The results of many satisfaction studies revealed variable determinants of satisfaction which shows that satisfaction is multi-factorial and no one factor could be claimed to be the sole contributor to satisfaction or dissatisfaction. Nevertheless, there are factors that contribute to satisfaction or dissatisfaction more than others. This needs a special statistical analysis to disentangle. This study as well as some other studies used multiple regression analysis to reveal the relative importance of the independent variables used.

This study showed that structure (purpose-built or rented), the literacy state (literate or illiterate) and utilization (regular or infrequent user) are important markers that should be considered in any plan for the improvement of satisfaction with health care in the area. No other study we have identified has demonstrated an effect of the type of building housing the health facility being used on satisfaction of its users and it seems predictable that the purpose-built facilities respond more to many expectations and needs of patients – a fact that leads to generating higher levels of satisfaction than that generated by the users of health facilities that were not originally built as health facilities. Nevertheless, this study showed that those using PHC centres with rented buildings were more satisfied with the waiting areas in those centres than those using PHC centres with purpose-built buildings. This might be explained by the likelihood that people have higher expectations in general for everything related to the purpose-built centres.

As for the regularity of using the health facilities, many other studies [66] showed that being a regular user is a predisposing factor for satisfaction; this is probably due to familiarity with the personnel and the setting in the centre, as well as the fact that regularity reflects an ongoing relationship with personnel in the health facility – this, in its turn, is a reflection of satisfaction. It is quite likely that satisfaction determines the frequency of utilization rather than the other way around. Those who are generally satisfied with a facility are obviously more likely to continue using

that facility in preference to alternatives, whilst the less satisfied are more likely to be irregular users. As for the literacy status, studies on educational status provide contradictory findings. Educational status sometimes has a positive and sometimes negative influence on satisfaction, and often interacts with other socio-demographic variables [13,25,66]. In general, this study seems to support the point made by Weiss that factors other than socio-demographic characteristics are key in influencing level of satisfaction.

This study does not claim to be comprehensive. As a matter of fact, and taking the time scale and the acceptability of the instrument to the respondents into consideration, including so many items or components (whether dependent or independent) might not be a good idea. For this reason many seemingly important factors, e.g. confidence in the medical care system, satisfaction with life in general, health beliefs, satisfaction with health status etc. have not been included in the study. Similarly, no expectation items were included in the questionnaires. It is hoped that these areas will be covered in future studies.

It is expected that the over-representation of females in the study might have affected the construct validity of the study. Nevertheless, our concern was to reflect the actual pattern of PHC centre utilization for us to have a real quality improvement.

Previous studies have shown no consistent picture of the effect of socio-demographic variables on satisfaction [65,66, 73,74], and that satisfaction is multi-factorial with only a limited proportion of the variance of satisfaction that can be explained by individual characteristics. Our study showed that no one factor could explain satisfaction alone; hence regression analysis was used to reveal the factor most related to satisfaction. It could be said that socio-demographic factors (age, sex, and literacy state) played minor roles in deciding the extent of satisfaction although each had a deciding role with one or more, but not all, components. How regular the respondent was in using his or her PHCC was the variable that was related most consistently to satisfaction with each and every component. Hence, it could be said that this variable was more predictive in deciding the extent of satisfaction with the various components in the study than the other variables.

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