Evaluation of the consumer model: relationship between patients’ expectations, perceptions and satisfaction with care

ORNAR BARON-EPEL1, MARINA DUSHENAT2 AND NURIT FRIEDMAN2

1The Cheryl Spencer Department of Nursing, Faculty of Social Welfare and Health Studies, University of Haifa, Mount Carmel, Haifa and 2The Department of Research and Evaluation, Maccabi Health Services, Tel Aviv, Israel.

Abstract

Objective. To evaluate the consumer model in a health care system, by studying the relationship between four variables: expectations, perceived degree of fulfillment, satisfaction and changing of physicians.

Design. Cross-sectional study; telephone interview of patients who had visited a primary care physician 1–2 months previously.

Setting. The Maccabi health plan, Israel.

Study participants. A random sample of 759 patients, aged 18 and over residing in two towns in Israel. Response rate to telephone interview was 50.7% (n = 385).

Main outcome measures. Expectations, perceived expectations fulfilled by the physician, satisfaction with the visit to the primary care physician and intention to change physician.

Results. The gap between the expectations and their fulfillment showed a low correlation with satisfaction. For attributes where a large difference was found, no correlation was found with patient satisfaction. Attributes such as ‘diagnosis’, ‘preventive health care’ and ‘answering questions’ presented correlation coefficients of 0.3. The correlation between the perceived fulfillment of these attributes and satisfaction presented higher correlation coefficients (between 0.4–0.5). This limits the consumer model as a way to predict satisfaction. Satisfaction correlated highly with intention to change physician. The mean score for the satisfaction of those intending to change doctors was 3.8 compared to 5.5 in the group of consumers not intending to change doctors.

Conclusion. The consumer model is able to explain only to a modest extent the variation in satisfaction, but dissatisfaction is a good predictor of the intention to change doctors.

Keywords: consumer model expectations, perceived fulfillment, satisfaction, the patient as consumer.

During the last few decades the health system in Israel has understood the decision making process of the patient regarding selection and continuity of use of health services [1,2].

The relationship between the patient and the treating physician is based upon the mutual goal of optimizing the patient’s health. The quality of the patient-physician relationship has been suggested as a determinant of the degree of compliance to treatment by the patient, the level of patient satisfaction and degree of ‘doctor shopping’ [1]. Doctor shopping limits continuity, consistency and effectiveness of care.
O. Baron-Epel et al.

Patient expectations

Degree to which expectations of patient were fulfilled by physicians

Degree of patient satisfaction with physician–patient relationship

Decision to change physician

Figure 1 The consumer model.

care and patients reporting higher satisfaction were more likely to have a higher quality of life [3]. Today, patient satisfaction is considered a key measure of quality of care. Factors influencing patient satisfaction may play a significant role in determining the quality of patient care. Individual characteristics such as age and education together with characteristics of the general practitioner’s practice are associated with satisfaction too but at best are a minor predictor of satisfaction [3–6].

If patients are viewed as ‘consumers’, a consumer model such as the expectancy disconfirmation model can be applied from marketing theories to health services provision [7–9] (Figure 1). In this model, the assumption is that patients have expectations of the visit to the physician and that the degree to which these expectations are fulfilled can be measured and there is a clear relationship. The higher the perceived fulfillment of the expectation is, compared to the expectation, the higher the satisfaction is. When fulfillment is lower than the expectations the greater the gap and the lower the satisfaction. When fulfillment is higher than the expectation the greater the difference and the higher the satisfaction. When expectations are low, clearly they will be more easily met and a high level of satisfaction maintained. However, if patient expectations are high, the physician will have a harder task meeting these expectations and satisfaction is likely to be lower. According to the consumer model, patient satisfaction is also correlated with the patient’s reported intention to change physician [10–12].

In this study, the relationship between the consumer model’s variables – expectations, perceived degree to which these expectations were fulfilled, satisfaction and changing of physicians – were measured. Identifying these variables and the correlation between them may help evaluate the quality of the health care provider services.

Methods

A random sample of 759 persons, aged 18 or over, insured by Maccabi Health Services, who had visited a doctor (general practitioner, family practitioner or internal medicine specialist working as a primary care physician) were selected. The visit took place in the towns Bat Yam or Holon in Israel, in the 2 month period prior to the study (May–June 1994). A questionnaire was devised after 19 telephone interviews using a semi-structured questionnaire. The questionnaire included questions regarding the reason for the latest physician visit, expectations of this visit and perceived degree to which these expectations were fulfilled, referred to here as perceived expectation fulfillment (PEF). An ‘open’ question, as well as a ‘closed’ question evaluated expectations of the respondents. The open question was phrased: ‘Did you have any specific expectations of the doctor?’ The closed question was phrased ‘To what degree did you expect... ’ and consisted of 11 attributes outlined in the literature as characteristics of the patient-physician relationship [13–17]. PEF was measured by asking to what degree did the physician stand up to the expectation using the same 11 attributes. These attributes are presented in Table 1. Expectations, PEF and patient satisfaction were scored on a scale of six, from ‘very much’ (response 6) to ‘not at all’ (response 1). The gap between PEF and expectations was the difference between the scores given by the respondents to the two variables.

Patient satisfaction was measured by asking the patient to evaluate their satisfaction on a scale of one to six for six different aspects of satisfaction and to give a total evaluation of satisfaction (Table 2). To form a total satisfaction variable the combination of the six aspects of satisfaction was calculated as the average score of all aspects of satisfaction. Intention to change physicians was measured by asking patients if, on the basis of their most recent physician visit, they intended to change physician. Demographic information, as well as a subjective evaluation of health was also collected. The questionnaire was reviewed by three experts in the field to determine its consensual validity and modifications were made. The questionnaire was then piloted on 30 respondents and final adjustments made accordingly.

Construct validity of the satisfaction questions is supported as this variable predicts the intention to change doctors. Internal consistency of the different items of expectations, PEF and satisfaction were 0.635, 0.784 and 0.945 respectively using Cronbach’s alpha coefficient.

Three hundred and eighty-five respondents were successfully interviewed by telephone (response rate 50.7%). The main reasons for loss of follow-up were incorrect contact details (telephone and address) or no response at time of
Table 1  Comparison of distributions for expectation and PEF extreme Scores

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Respondents giving high and very high scores (5–6)</th>
<th>Respondents giving low and very low scores (1–2)</th>
<th>Number of respondents</th>
<th>P value²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expectation</td>
<td>PEF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer questions</td>
<td>90.2% 87.3%</td>
<td>4.1% 2.2%</td>
<td>313</td>
<td>0.50</td>
</tr>
<tr>
<td>Listen to problems</td>
<td>87.2% 89.5%</td>
<td>4.8% 1.0%</td>
<td>310</td>
<td>0.33</td>
</tr>
<tr>
<td>Diagnosis of problem</td>
<td>82.3% 87.0%</td>
<td>9.2% 4.1%</td>
<td>268</td>
<td>0.09</td>
</tr>
<tr>
<td>Explanation and discussion</td>
<td>79.2% 85.4%</td>
<td>8.8% 1.9%</td>
<td>315</td>
<td>0.011</td>
</tr>
<tr>
<td>Physical examination</td>
<td>78.7% 91.0%</td>
<td>13.3% 3.8%</td>
<td>310</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Preventive health care and lifestyle counselling</td>
<td>67.8% 72.3%</td>
<td>22.4% 14.5%</td>
<td>287</td>
<td>0.044</td>
</tr>
<tr>
<td>Prescription provision</td>
<td>62.8% 89.4%</td>
<td>21.5% 4.2%</td>
<td>328</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Inquiry into other problems</td>
<td>53.9% 82.5%</td>
<td>31.3% 6.3%</td>
<td>249</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Test referral</td>
<td>51.8% 90.1%</td>
<td>41.5% 6.3%</td>
<td>26</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Medical certificate provision</td>
<td>37.2% 89.8%</td>
<td>57.8% 7.3%</td>
<td>274</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Referral to specialist</td>
<td>30.8% 91.9%</td>
<td>61.2% 5.3%</td>
<td>245</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

¹Number of respondents that specified expectation and PEF of the attribute. ²P value for paired comparisons of expectation and PEF (paired Wilcoxon test).

Table 2  Distribution of specific aspects of satisfaction

<table>
<thead>
<tr>
<th>Satisfaction aspects</th>
<th>N</th>
<th>1¹</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction</td>
<td>381</td>
<td>0.5%</td>
<td>0.3%</td>
<td>2.6%</td>
<td>4.5%</td>
<td>32.6%</td>
<td>59.8%</td>
</tr>
<tr>
<td>Satisfaction with treatment</td>
<td>371</td>
<td>0.5%</td>
<td>0.5%</td>
<td>2.4%</td>
<td>3.0%</td>
<td>33.2%</td>
<td>60.4%</td>
</tr>
<tr>
<td>Satisfaction with attitude of physician</td>
<td>372</td>
<td>0.8%</td>
<td>0.3%</td>
<td>2.4%</td>
<td>3.5%</td>
<td>33.9%</td>
<td>59.1%</td>
</tr>
<tr>
<td>Satisfaction with degree of professionalism</td>
<td>381</td>
<td>1.0%</td>
<td>0.5%</td>
<td>1.3%</td>
<td>5.8%</td>
<td>29.7%</td>
<td>61.7%</td>
</tr>
<tr>
<td>Satisfaction with degree to which needs were met</td>
<td>380</td>
<td>1.1%</td>
<td>1.6%</td>
<td>4.2%</td>
<td>7.1%</td>
<td>30.5%</td>
<td>55.5%</td>
</tr>
<tr>
<td>Satisfaction with explanations of physician</td>
<td>379</td>
<td>1.1%</td>
<td>1.1%</td>
<td>6.1%</td>
<td>9.0%</td>
<td>31.7%</td>
<td>51.2%</td>
</tr>
<tr>
<td>Satisfaction with length of visit</td>
<td>378</td>
<td>0.8%</td>
<td>0.5%</td>
<td>1.6%</td>
<td>7.1%</td>
<td>33.9%</td>
<td>56.1%</td>
</tr>
</tbody>
</table>

¹Not satisfied at all. ²Very satisfied.

Expectations

The open-ended question on the patient or consumer’s expectations of the doctor received an answer from 37% of the respondents. Of these, 40.3% expected a prescription, 15.6% came for a referral for a test, 12.8% wanted a referral to a specialist and the remainder reported other requests. Sixty three percent could not express a specific expectation from the doctor. In the closed question between 79% and 90% of the respondents rated their expectation of their physician as high and very high for ‘answer questions’ ‘listen to problems’ and ‘explanation and discussion’, three attributes describing the physician’s level of interaction with the patient (Table 1). Eighty two percent rated their expectation as high and very high for getting a diagnosis and 77% for being
examined by their physician. Relatively speaking, preventive health care and lifestyle counselling issues were not highly ranked by the respondents.

**Perception of the degree to which expectations were fulfilled**

A large percent of the study population gave a high score to the fulfillment of their expectations. All in the differences between the attributes were small (Table 1). Mainly the attributes ‘preventive health care and lifestyle counseling’ and ‘inquiry into other problems’ did show a lower percent of fulfillment compared to the other attributes. A higher percent of respondents gave a high or very high score for all attributes of PEF compared to expectation, except for ‘answer questions’. A lower percent of respondents gave a low score for fulfillment of expectations for all attributes (Table 1).

**Satisfaction**

Respondents were asked to rate overall satisfaction with their visit to the physician and 92.4% were ‘satisfied’ or ‘very satisfied’ (Table 2). Distribution of responses regarding satisfaction with physician were positively skewed to the highest levels of satisfaction.

Specific items, such as ‘explanations of physician’, the degree to which needs were met’ and ‘length of visit to the physician’, were less likely to be rated highly (82.9%, 86.0% and 90% respectively) compared to ‘treatment satisfaction’ (91.6%) and ‘professionalism’ (90.3%). Correlation between the different components of satisfaction was high (Cronbach’s $\alpha = 0.945$). As such a combined variable was calculated to express total satisfaction with the visit to the doctor.

**Relationship between the three components of the consumer model**

According to the consumer model, the higher the PEF compared to the expectations the higher the satisfaction. It would be expected, therefore, to find a correlation between this difference between PEF and expectation and total patient satisfaction. For those attributes where a large difference was found between expectation and PEF (‘referral to specialist’, ‘medical certificate provision’, ‘referral to test’) no correlation was found with patient satisfaction (coefficients of –0.014, 0.103 and 0.080 respectively). Attributes such as ‘diagnosis of problem’, ‘preventive health care and lifestyle counseling’ and ‘answering questions’ resulted in a statistically significant correlation between the gap between expectations and PEF and satisfaction (coefficients of 0.312, 0.308 and 0.276 respectively), however the strength of the association was small (Table 3).

The correlation between satisfaction and PEF was much higher than between satisfaction and the gap between expectations and PEF. Attributes reflecting the interaction between the consumer and the doctor, such as ‘answering questions’, ‘listening to problems’ and ‘explanation and discussion’ presented a relatively high correlation between PEF and satisfaction (0.465, 0.455 and 0.499 respectively) (Table 3). Those attributes with moderate correlation were ‘diagnosis of problem’, ‘preventive health care and lifestyle counseling’ and ‘inquiry into other problems’ (correlation coefficients in the range of 0.409–0.424). There was a low correlation between satisfaction and PEF for ‘referral to specialist’ and ‘prescription provision’.

**Changing physician**

Respondents were asked if they intended to return to the same physician in the future. Of the total study group 20 respondents (5%) reported that they would not return to the same physician or that they had not decided what they would do. Another five respondents explained that the decision depended on other, external factors. Seventy seven percent of those respondents who reported dissatisfaction with their visit intended to change physicians, in contrast to only 1.3% of respondents who described the visit as satisfactory (data not presented). The correlation between intention to change doctors and total satisfaction was statistically significant, the mean score of satisfaction of those intending to change doctors was 3.79 compared to 5.50 in the group of consumers not intending to change doctors (Table 4).

Satisfaction with physician’s attitude was most strongly associated with intention to change physician compared to the other satisfaction attributes. Approximately 82% of those dissatisfied with the physician’s attitude, reported intention

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Correlation with PEF</th>
<th>Correlation with difference between expectation and PEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer questions</td>
<td>0.465$^1$</td>
<td>0.276$^1$</td>
</tr>
<tr>
<td>Listen to problems</td>
<td>0.455$^1$</td>
<td>0.270$^1$</td>
</tr>
<tr>
<td>Diagnosis of problem</td>
<td>0.409$^1$</td>
<td>0.312$^1$</td>
</tr>
<tr>
<td>Explanation and discussion</td>
<td>0.499$^1$</td>
<td>0.266$^1$</td>
</tr>
<tr>
<td>Physical examination</td>
<td>0.331$^1$</td>
<td>0.201$^1$</td>
</tr>
<tr>
<td>Preventive health care and lifestyle counselling</td>
<td>0.424$^1$</td>
<td>0.308$^1$</td>
</tr>
<tr>
<td>Prescription provision</td>
<td>0.171$^1$</td>
<td>0.089</td>
</tr>
<tr>
<td>Inquiry into other problems</td>
<td>0.401$^1$</td>
<td>0.221$^1$</td>
</tr>
<tr>
<td>Test referral</td>
<td>0.201$^1$</td>
<td>0.080</td>
</tr>
<tr>
<td>Medical certificate provision</td>
<td>0.215$^1$</td>
<td>0.103</td>
</tr>
<tr>
<td>Referral to specialist</td>
<td>0.186$^1$</td>
<td>-0.014</td>
</tr>
</tbody>
</table>

$^1$P < 0.01 (two-tailed).
to change physicians. Satisfaction with the professionalism and the treatment of the physician were also strong predictors of intention to change physician. Dissatisfaction with the length of the visit and the explanations provided during the course of the visit were associated to a lesser extent with the intention to change physicians. Only 29% of those dissatisfied with the amount of time that the physician dedicated to the patient's visit indicated that they would like to change physician and 38% of those dissatisfied with the physician's explanations indicated a similar inclination (data not presented). It should be stated that due to small numbers of respondents intending to change doctors any conclusions should be cautiously interpreted.

### Discussion

The consumer model is based on the premise that the consumer of health services is able to choose where and from whom he or she wishes to receive treatment. When an individual is satisfied with a product, he is more likely to continue to use it.

The consumer model consists of four variables: expectations, PEF, satisfaction and intention to change doctors (Figure 1). The expectations were high for those attributes that are an important part of every visit to the doctor such as ‘answers to questions’ and ‘listening to problems’. The three attributes that scored relatively poorly (‘test referral’, ‘referral to specialist’ and ‘medical certificate provision’) were perhaps relevant to only part of the study group.

Only a small variability was found, however, between the attributes describing fulfillment. Two attributes (‘preventive health care and lifestyle counselling’ and ‘inquiry into other problems’) showed a lower percent of fulfillment comparatively, implying that these two attributes are not regarded as traditional components of the physician’s role. They are characterized by a more holistic approach.

Satisfaction can be interpreted as a function of the PEF or as a function of the perceived fulfillment of the expectations compared to the expectations. Satisfaction may be interpreted alternatively as an evaluation of the physician, with no relationship to the expectations of the treatment itself. Others have suggested that this evaluation is determined by external factors related to the health system [11]; for example, to what extent the patient feels comfortable with the physician, how the patient perceives the health system and the physician’s role within the system. Perhaps those factors that the patient sees as obvious expectations have less of an impact on overall satisfaction, whilst those factors not explicitly formalized in reported expectations have a stronger influence on perceptions and feelings.

The fact that patient satisfaction was relatively high in this and other studies may reflect the absence of the patient’s ability to evaluate the treatment itself, both in terms of needs and expectations [6]. Indeed, patients may feel incapable of evaluating medical treatment and as a result, report high satisfaction levels in order to avoid behaviour change. The easiest course of action is to report high satisfaction levels that will obviate the need for behaviour change. Dissatisfaction demands a change, such as a change of physician. Those that reported dissatisfaction with the physician were disproportionately more likely to express intent to change physician.

A different explanation for the high satisfaction levels is that patients simply may not have expectations and may not see it as their role to evaluate the physician. In this study when respondents were asked if there was something specific that they wanted from the doctor, only 37% were able to verbalize a particular need. When a list of possible expectations was presented, the majority of respondents were able to identify expectations for their visit to the physician. Most of the unprompted (responses to open question) expectations were related to treatment procedure and had almost no correlation with patient satisfaction; for example, ‘prescription provision’ and ‘test referral’.

It is possible that those attributes found in the study to be strongly associated with patient satisfaction (‘answer question’, ‘listen to problems’, ‘explanation and discussion’, ‘diagnosis of problem’, ‘physical examination’) may be so obvious to the patient that it didn’t occur to the patient to continue to use it.

According to the consumer model, dissatisfaction with the physician will result in changing doctors. In this study, a strong relationship was found between these two variables. Dissatisfaction with the perceived level of professionalism of the doctor, his treatment and physician’s attitude towards the patient, were strong predictors of intention to change physician. However, it is more difficult for the patient to assess the physician’s professionalism. Professionalism may

### Table 4

<table>
<thead>
<tr>
<th>Intention to change physician</th>
<th>Number of respondents</th>
<th>Total satisfaction mean score $^{1,2}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>358</td>
<td>5.50 ± 0.61</td>
</tr>
<tr>
<td>Yes or haven’t decided</td>
<td>20</td>
<td>3.79 ± 1.30</td>
</tr>
</tbody>
</table>

$^{1}P < 0.001$ (t-test). $^{2}$Total satisfaction was calculated as the average score of all aspects of satisfaction.
be an example of those factors that the patient takes as a given, but whose absence is significant.

According to Williams [11], in order to be a consumer, the individual must fulfill three basic qualifiers: (i) the existence of consumer opinion, (ii) a belief (by the consumer) in the legitimacy of the opinion and (iii) a willingness to engage in an expression of that opinion. Being a consumer is incompatible with the conventional, patriarchal physician approach, as the consumer role is not a passive one. The key question is to what degree today’s patients function as consumers? The fact that a patient is satisfied with the health service provided does not necessarily indicate that he or she has investigated and evaluated the service received. It is more likely that this satisfaction is an indicator of the lack of any evaluative process on the part of the patient. The present study was not designed to answer this dilemma.

Today, there is a tendency to expect the patient to behave as a health service consumer, particularly with the growing power the patient has to select his services and the concomitant competition between health service providers that this growing choice has created. However, the validity of such assumptions has not been established.

Patient populations can be categorized in the following manner:

(i) Passive patients who do not feel it is their role to critically evaluate medical services provided and who see their relationship with the physician as patriarchal.
(ii) Patients who have low expectations of their physician, with a consequent high degree of met expectations, high satisfaction levels and little motivation to change physician.
(iii) Patients who behave as consumers, with expectations and ability to critically evaluate the quality of the treatment received and an ability to make changes accordingly.

A significant factor in determining to which category a patient belongs is the way in which the patient defines his role in the physician-patient relationship. The first group accepts their role as a passive one, whilst the second and third groups see themselves as responsible for their own health and that the physician’s role is to maximize their health status. In both of the latter groups, patients see themselves as consumers and are able to evaluate the medical services provided for them [17].

The decision making process requiring a behaviour change is the final outcome in this model, wherein the patient, based on his assessment, must come to a decision and act on it. Although the majority of patients in this study who were dissatisfied with the visit to the physician also reported that they intended to change physicians, another 25% did not express intention to replace their physician. That is, whilst these respondents were unhappy with the service provided, they were unwilling to implement a change. This type of behaviour is contrary to the consumer model. Two possible explanations are that these patients do not believe that they will receive better treatment elsewhere, or that the cost of the change will be greater than the ultimate perceived benefit. ‘Cost’ here does not refer to monetary cost, but investment of resources such as time, emotional energy, etc. ‘Benefits’ are defined as improved relationship with the physician, better outcome, better treatment, less waiting time and so on. Due to low numbers of unsatisfied respondents more research is warranted to define these two groups. Most of the models that examine satisfaction [11] are based on the ‘Discrepancy Theory’ where satisfaction is determined by the expectations and expressed needs of the individual and their degree of fulfillment. The definition of expectations and their fulfillment vary from study to study, however, the difference between ‘prior’ and ‘post’ physician visit is the basis of these models. It should be kept in mind that patient expectations and their fulfillment are a subjective evaluation performed by the patient and may differ significantly from physician consensus regarding appropriate treatment. The consumer model’s interpretation in studies investigating consumer behaviour and marketing [12, 16, 18] suggests that the gap between the consumer’s expectations and the fulfillment of the expectations will determine the patient’s contentment or disappointment (satisfaction level).

Studies to date have not provided strong evidence or support for the consumer model [4, 6, 11]. Only 10% of patient satisfaction with physician was explained by patient expectations and perceived outcome. Thompson [18] also attempted to identify those factors that influence patient satisfaction. A long list of factors was evaluated, including: demographic and personal characteristics, attitudes, expectations, outcomes, perception of the value of hospitalization and length of hospitalization stay. Together, these variables only predicted 20% of satisfaction variance. It was thus concluded that other factors, not measured, must influence satisfaction [18]. Williams [11] suggested, therefore, that changes in the health system should not be implemented on the basis of patient expectations alone.

In this study, we have shown a relationship between the gap between patient expectations and their fulfillment and patient satisfaction, in some of the attributes we looked at. However, the correlations in general were low. Diagnosis and preventative health care showed the highest correlation. The degree to which expectations of the interaction were perceived as fulfilled were more strongly associated with satisfaction especially attributes characterizing interactions and communication with the physician (‘explanation and discussion’, ‘answering questions’ and ‘listening to problems’). In simpler terms, when patient expectations are met with respect to these characteristics, patient satisfaction is likely to be greater. Other characteristics, such as ‘medical certificate provision’, ‘referral to specialist’ or ‘test referral’, were less associated with total satisfaction. The perceived degree to which expectations for these attributes were fulfilled may be less critical in determining patient satisfaction with his or her physician. The gap between the expectation of prescription provision and actual prescription obtainment for example did not explain any of the variance in satisfaction.
It may be concluded that this model, in its present form, is far from enough to explain the variance in patient satisfaction with physician’s services. However the variable describing fulfillment itself explains more of the satisfaction variable than the difference between the expectation and the fulfillment variables. This study has limitations as the sample in this study was largely comprised of patients with minor ailments. It is likely that where health problems are more serious, the decision making framework will be different and the physician’s bedside manner will take on a different value in contrast to quality of the treatment and other factors. Moreover, we did not adjust for characteristics such as age and education that are known to be associated with satisfaction, as the satisfaction variable does not have a normal distribution. A larger sample would be needed to evaluate the model with regards to age, education and so on.

It is not possible to distinguish between those patients who decided to leave their doctor due to the last visit or if it is the result of an opinion that has formed during several previous visits and was only reinforced during the last one. In any case this does not change the interpretation of the data.

The representativeness of the study sample for the total Israel population is limited by the fact that this sample was taken from the list of one health plan (Maccabi, insuring about 20% of the Israeli population) and that only 50.7% of the sample were successfully contacted and interviewed. Despite this, it has been possible to identify associations between factors that influence the degree of satisfaction and intention to change physician.

In summary, it appears that the consumer model is able to explain only to a very modest extent the variation in patient behaviour (intention to change doctors). Degree of satisfaction is a good predictor of intention to change physician, as suggested by the model. However, the association between satisfaction level and the gap between the patient’s expectations and the degree to which they were fulfilled was poor. Variation in satisfaction was better explained by the degree to which expectations were fulfilled. Rather, how the patient feels about his relationship with the physician will determine whether he will change physician and not the degree to which his expectations were met.

**Acknowledgements**

We would like to thank Professor J. Shuval for her help in this study, which was conducted as part of an MPH thesis at the School of Public Health at the Hebrew University, Jerusalem. We would also like to thank Jenny Kertis for her help in translating and editing the manuscript.

**References**


Accepted for publication 6 April 2001