

Patient characteristics as predictors of primary health care preferences: a systematic literature analysis

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Abstract

Objective To identify associations between various cultural and demographic factors and patients' primary health care preferences.

Search strategy Searches were performed in MEDLINE (1966–December 2000), PsycINFO (1977–May 2001) and Sociological Abstracts (1963–December 2000). Identified papers were checked for more papers.

Inclusion criteria Studies with a focus on primary health care or health care in general, asking patients about preferences with regard to health care, reporting quantitative results and examining the relations between specific patient characteristics and patient preferences.

Data extraction and synthesis Data were extracted from studies using a scoring form to register what methods were used, which patient characteristics were analysed and which patient characteristics significantly influenced patients' preferences with regard to different aspects of health care ($P < 0.05$).

Main results A total of 145 studies were included with 2276 comparisons between subgroups of patients. Of all the comparisons, 607 (27%) showed a significant association between patient characteristics and preferences with regard to primary health care. Age and economic status significantly related to patient preferences in 38 and 33% of the comparisons, respectively. Education, health status, family situation, sex, and utilization of health care related significantly to patient preferences in less than 25% of the comparisons.

Conclusions This review of the literature showed patient characteristics to be an important determinant of preferences regarding many aspects of primary health care defined as general practice care or health care, in general. All of the patient characteristics examined here showed at least some significant associations with preferences for primary health care.

Introduction

Although physicians can ask patients directly about their needs and preferences, the constraints of time and other pressures often prevent them from doing so. In order to provide truly patient-centred care, in the case of different treatment options, the physician should recognize the heterogeneity of patient preferences.¹ For instance, those who are ill may have very different preferences from those who are healthy and older patients may have very different treatment desires than younger patients. Several literature reviews have provided insight into the preferences of patients.^{2–9} However, insight into the relations between various cultural and demographic factors and the actual preferences of patients in primary health care is limited.¹⁰ To the authors' knowledge the present review is the first to systematically examine the relations between specific patient characteristics and patient preferences with regard to a number of different aspects of primary health care.

Patient preferences are defined as the degree of agreement with statements regarding the importance of specific aspects of the clinical behaviour of care providers or the organization of health care. That is, preferences are ideas about what ought to happen and are therefore sometimes referred to as 'normative expectations'.¹¹ Patient preferences differ from reported experiences and patient satisfaction.¹² Reported experiences are perceptions of actual events or episodes of care, such as the number of health check-ups in the last year. Patient satisfaction involves evaluation of actual experiences with expectations or preferences providing the frame of reference. The focus of the present review is on patient preferences or normative expectations. Reported experiences and patient satisfaction constitute very different concepts and thus fall outside the scope of the present review.

Primary health care was defined as 'the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership

with patients and participating in the context of family and community'. This includes general practice care as well as outpatient specialist care.¹³ The provision of primary health care can be examined with regard to a number of different aspects of the structure, the process and the outcome of health care. Similarly, patient preferences can also be examined with regard to these different aspects of care.

For the purposes of our review, the following research questions were formulated:

Which aspects of primary health care have been considered and which research methods have been used in studies of the associations between various patient characteristics and preferences with regard to primary health care?

Do different patient subgroups appear to have different preferences with regard to specific aspects of primary health care?

Methods

Literature search and inclusion criteria

Several systematic searches were performed: (1) Computer searches of the Medline for 1966–December 2000, PsycINFO for 1977–May 2001 and Sociological Abstracts for 1963–December 2000 using the keywords 'patient' combined with 'expectation', 'priority' or 'preference' further combined with 'care' and English in language. The keywords were entered as free text words and plurals were not allowed. (2) For 1980–December 2000, a total of 30 international and Dutch scientific journals concerned with health care, general practice or family medicine was manually searched using the indexes whenever possible with 'patient satisfaction' and 'patient views' as the key words). The computer searches provided a total of 2047 publications. The manual search provided an additional 30 publications.

The following criteria were used to select studies for inclusion in the present review: (a) focus on primary health care or health care in general, (b) actual inquiry about patient preferences with regard to health care, (c) report

of quantitative results and (d) examination of relations between patient characteristics and specific preferences. Using the definition of primary health care outlined above, we included all health care providers, regardless of institutional organization, concerned with a broad group of patients. If the scope of a study was unclear in the sense of not specifically focused on primary or secondary health care but on health care in general the study was also included.

Given that the objective of the present review was to examine a broad unselected patient population, the following types of studies were excluded: (a) studies of consultation-specific expectations (i.e. reasons for encounter) or expectations regarding particular care providers, that cannot be generalized, (b) studies including specific population groups (i.e. students), with the exception of groups defined by age and/or sex, (c) studies comparing different care providers or organizations. We also excluded studies with a focus on aspects of patients' subjective experiences other than their preferences, such as patient satisfaction, evaluations of care, perceptions of care, perceived problems, utility of care and unmet needs.

When it was obvious from the title and abstract alone that the paper did not fit the inclusion criteria it was excluded. Of the 2047 plus 30 papers provided by the initial search, 387 studies remained as pertaining to patient expectations or preferences with regard to primary health care or health care in general. The reference list from these papers were then examined using the so-called 'snowball-method', which provided an additional 68 papers. A total of 455 papers was thus initially selected for more detailed examination. The final selection was then made after checking the content of the entire paper.

Data extraction and analysis

The relevant data were extracted from the different papers using a standardized scoring form to register which methods were used, which patient characteristics were analysed and which patient characteristics were found to signifi-

cantly influence patient preferences with regard to various aspects of primary health care ($P < 0.05$).

In order to analyse the influence of patient characteristics on patient preferences, the patient characteristics from the different studies were categorized according to age, sex, education, economic status, health status, utilization of health care, family situation, ethnicity and religion (see Table 1). Placement within a particular category was based on the definitions provided in the original studies. For example, the cut-off point for inclusion in the 'older' vs. 'younger' age categories could differ depending on the study being considered. Given the variety of study designs, that is, categorization could not be standardized.

In order to categorize patient preferences with regard to different dimensions of primary health care, a taxonomy of aspects of health care was created on the basis of a qualitative study of patient preferences and a list of the relevant aspects of primary health care (see Table 2).¹⁴

The preliminary selection of papers for consideration and extraction of data from the 455

Table 1 Patient characteristics

Characteristic	Indicators
Age	Years
Sex	Male, female
Education	Level of education
Economic status	Level of income Level of occupation Type of insurance
Health status	Functional status Duration of disease Severity of disease Number of illnesses
Utilization of health care	Number of visits Visit interval Regular source of care
Family situation	Marital status Number of children Family support
Ethnicity	Race Speaks official language Acculturation
Religion	Religious Type of religion

Table 2 List of aspects of health care

Dimension	Aspects	Definitions
Availability	Flexibility	Opportunities for choosing a physician, other health care providers and appointment times
Accessibility	Waiting times	Time before a physician can be consulted
	Telephone consultations	Accessibility of the physician by telephone
	Physical accessibility	Physical and geographical accessibility of the care accommodation
	Financial accessibility	Financial accessibility of health care
Organization and cooperation	Efficiency	Balance between input (money, means, time) and output (of care)
	Premises	Physical suitability of the organization
	Continuity	Organization of treatment in the course of time
	Cooperation	Transfer of treatment in case of more providers of care, substitution or retirement
	Special services available	Availability of special service in health care, such as preventive screening
Medical care	Effectiveness	Actual improvement or stabilization of the state of health
	Competence/accuracy	Accuracy in the use of knowledge and skills
	Burden on the patient	Attention for the consequences of care for the patient with regard to his functioning
Doctor-patient relation	Humaneness	Respect and personal interest for the patient as an individual
	Exploring patients' needs	Exploring patients' wishes and needs with regard to health care
	Patients' privacy	Respect for the personal privacy of a patient, desire for chaperone
	Time for patient care	Time for paying attention to the patient
	Age or sex of physician	Preference for certain age or sex of physician
	Patients' involvement in decisions	Patients' involvement in decisions about care
Information Counselling and support	Informativeness	Provision of relevant information to the patient
	Counselling	Attention for patients' psychosocial problems
	Stimulating self-help	Stimulating patients' responsibility for treatment compliance and self-care
	Supporting patients' relatives	Attention for needs of patients' partner and relatives

studies was done by HPJ. Data extraction was also done for the first 300 of the 455 studies by another researcher (CB or MW) in order to improve the reliability of inclusion and data-extraction. When differences existed, consensus was attained via discussion. The extraction of the data for the remaining 155 studies done by HPJ was checked by CB. The data were next entered into a data base and analysed using SPSS (version 9.0). In order to address the first research question concerned with which aspects of health care were considered in the various studies using which methods, different descriptive statistics were calculated. In order to address the second research question concerned with whether or not different subgroups of patients have different preferences with regard to certain aspects of primary health care, both

quantitative and qualitative summaries (using the exact formulations of the different aspects of care from the different studies) were created.

Results

Study characteristics

A total of 145 studies remained after application of the inclusion and exclusion criteria (see Table S1). Most of the studies were carried out in the United States ($n = 75$ studies, 52%), the United Kingdom ($n = 27$, 19%) or Canada ($n = 19$, 13%). The remaining studies were from the Netherlands ($n = 6$); Australia ($n = 4$); Norway ($n = 2$); five other European countries – namely Finland ($n = 1$), Sweden ($n = 1$), Greece ($n = 1$), Germany ($n = 1$), and Spain ($n = 1$);

five Middle East countries – namely Israel ($n = 3$), Lebanon ($n = 1$) and United Arab Emirates ($n = 1$); two Asian countries – namely Hong Kong ($n = 1$) and China ($n = 1$). A rise in the number of studies included per year was observed to start in 1994 with almost 60% of the studies published in the last 7 years (see Table 3). The patient samples contained an average of 61% females (range 0–100%), and the mean age of the patients studied was 47 years (range 14–76 years).

An average of five different patient characteristics was analysed per study (range: 1–28). The number of items used to measure a patient preference with regard to certain aspects of health care varied from 1 to 40 (mean: 4). The total number of relations between patient characteristics and patient preferences examined per study varied between 1 and 240. The mean number of relations was 16. Considered toge-

ther, the 145 studies addressed a total of 2276 relations between patient characteristics and patient preferences.

Research methods

In Table 4, an overview of the number of studies using different research methods is presented. As can be seen, a variety of sampling procedures was applied. In more than 50% of the studies ($n = 81$), the respondents were selected from the patient population associated with a family practice or hospital; in 12% of the studies ($n = 18$), the respondents were selected from population lists. In 24 of the studies (17%), a random sampling procedure was applied; in 59 of the studies (41%), a systematic sampling procedure was followed and in 10 of the studies (7%), all persons in the sample frame were approached. In still another 37 of the studies (26%), an unsystematic sampling procedure was applied and in 14 of the studies (10%), the sampling procedure was simply not mentioned.

The sample sizes varied widely (from 35 to 5067 patients). The median sample size was 260 respondents. The mean response rate was 76% but varied from 20 to 100%. In only 27 of the studies (19%) was a non-response analysis comparing respondents to non-respondents performed. In 70 of the studies (or about 50%), the respondents were approached either before or after consultation. In 62 of the studies (or more than 40%), the respondents were approached independent of a visit to their physician. The most frequent survey method was the hand out of a written questionnaire, which was done in 56 of the studies (39%). Oral interviews were undertaken in 45 of the studies (31%) while mail surveys and telephone interviews were relatively infrequent (16 and 10%, respectively). For most of the studies, the items used to assess patient characteristics and patient preferences were developed by the researchers themselves (82 studies), some 59 studies included explicit references to the research literature, and 38 studies were based on the authors' own research.

Table 3 Year of publication of studies ($n = 145$)

Year	Number of studies
1974	1
1975	1
1976	0
1977	0
1978	0
1979	3
1980	4
1981	4
1982	3
1983	2
1984	4
1985	3
1986	2
1987	7
1988	4
1989	3
1990	8
1991	5
1992	3
1993	2
1994	10
1995	15
1996	13
1997	12
1998	8
1999	13
2000	15

Table 4 Methods used ($n = 145$ studies) (absolute numbers, percentages between brackets)

Characteristic	Categories	Number of studies
Sample frame	Patients visiting family practice/centre	31 (21)
	Patient list family practice/health centre	6 (4)
	Patients visiting a hospital	39 (27)
	Patient list hospital	5 (3)
	Population list	18 (12)
	Other/combinations	39 (27)
	Unknown	7 (5)
Sampling method	Random sample	24 (17)
	Non-random, systematic sample	59 (41)
	All persons included, no sample	10 (7)
	Unsystematic sampling procedure	37 (26)
	Combination	1 (1)
	Unknown	14 (10)
Sample size ($n = 144$)	Mean/median (min-max)	460/260 patients (35-5067)
Response rate ($n = 100$)	Mean/median (min-max)	76%/79% (20-100)
Non-response analysis performed	Yes	27 (19)
Timing of contact	Before visiting health care providers	18 (12)
	After visiting health care providers	12 (8)
	Unclear but related to visiting	40 (28)
	Independently of visiting	62 (43)
	Other/combinations	21(4)
	Unknown	7 (5)
Survey method	Oral interview	45 (31)
	Telephone interview	14 (10)
	Written questionnaire, handed out	56 (39)
	Mail survey	23 (16)
	Other/combinations	21 (3)
	Unknown	2 (1)
Choice of items (combinations were possible)	Based on own research	38 (26)
	Explicit literature references	59 (41)
	Invented by the researchers	82 (57)
	Other	2 (1)
	Unclear	21 (14)
Number of items (aspects)	Mean/median (min-max)	4/2 items (1-40)
	Mean/median (min-max)	5/4 characteristics (1-28)
Total number of relations between items and patient characteristics	Mean/median (min-max)	16/7 relations (1-240)

Patient characteristics and aspects of care

As can be seen from the column totals in Table 5, the most frequently analysed patient characteristics were health status (580 times), age (461 times), sex (341 times), education (296 times) and utilization of care (210 times). Economic status and family situation were studied less frequently (159 and 125 times, respectively).

Ethnicity and religion were only rarely analysed in relation to patient preferences (70 and 34 times, respectively).

Inspection of the row totals in Table 5 shows the aspects of care most frequently analysed in the various studies to be 'Information' (528 times), 'Availability of special services' (253 times), 'Involvement of patient in decisions' (226 times), 'Doctor-patient relation' (209 times), and

Table 5 Relations between patient characteristics and patient preferences: quantitative results ($n = 2276$ relations from $n = 145$ studies*)

	Age (younger/ older)	Sex (male/ female)	Education (lower/ higher)	Economic status (lower/higher)	Health status (poorer/ better)	Utilization of care (lower/higher)	Family situation (alone/ together)	Ethnicity (White/other)	Religion	Totals of nine columns
Availability	$n = 31$ Sign 13 (42%) 7/6	$n = 21$ Sign 7 (33%) 2/5	$n = 12$ Sign 5 (42%) 0/5	$n = 19$ Sign 6 (32%) 0/6	$n = 42$ Sign 21 (50%) 18/3	$n = 17$ Sign 3 (18%) 2/1	$n = 6$ Sign 2 (33%) 0/2	$n = 2$ Sign 1 (50%) 1/0	$n = 2$ Sign 2 (100%) 2/0	$n = 152$ Sign 60 (39%) 16/44
Accessibility	$n = 25$ Sign 6 (24%) 1/5	$n = 22$ Sign 3 (14%) 1/2	$n = 13$ Sign 2 (15%) 2/0	$n = 14$ Sign 5 (36%) 1/4	$n = 26$ Sign 2 (8%) 1/1	$n = 19$ Sign 2 (11%) 0/2	$n = 6$ Sign –	$n = 0$	$n = 0$	$n = 125$ Sign 20 (16%) 6/14
Organization and cooperation†	$n = 31$ Sign 14 (45%) 2/12	$n = 30$ Sign –	$n = 12$ Sign 1 (8%) 1/0	$n = 9$ Sign 1 (11%) 1/0	$n = 22$ Sign 2 (9%) 2/0	$n = 21$ Sign 2 (10%) 0/2	$n = 1$ Sign –	$n = 0$	$n = 0$	$n = 126$ Sign 20 (16%) 4/16
Special services available	$n = 44$ Sign 16 (36%) 11/5	$n = 34$ Sign 5 (15%) 1/4	$n = 37$ Sign 10 (27%) 2/8	$n = 22$ Sign 6 (27%) 2/4	$n = 49$ Sign 11 (22%) 6/5	$n = 21$ Sign 5 (24%) 1/4	$n = 25$ Sign 6 (24%) 4/2	$n = 12$ Sign 4 (33%) 1/3	$n = 9$ Sign 3 (33%) 1/2	$n = 253$ Sign 66 (26%) 29/37
Medical care†	$n = 34$ Sign 10 (29%) 6/4	$n = 35$ Sign 3 (9%) 2/1	$n = 19$ Sign 1 (5%) 1/0	$n = 18$ Sign 6 (33%) 2/4	$n = 43$ Sign 6 (14%) 5/1	$n = 26$ Sign 2 (8%) 2/0	$n = 6$ Sign –	$n = 5$ Sign 2 (40%) 1/1	$n = 1$ Sign –	$n = 187$ Sign 30 (16%) 15/15
Burden on the patient	$n = 30$ Sign 12 (40%) 8/4	$n = 11$ Sign 2 (18%) 0/2	$n = 19$ Sign 3 (16%) 1/2	$n = 5$ Sign 4 (80%) 2/2	$n = 60$ Sign 13 (22%) 8/5	$n = 10$ Sign 4 (40%) 0/4	$n = 17$ Sign 8 (47%) 2/5/1	$n = 3$ Sign –	$n = 11$ Sign 11 (100%) 11/0	$n = 166$ Sign 57 (34%) 29/27/1
Doctor–patient relation†	$n = 48$ Sign 18 (38%) 12/6	$n = 43$ Sign 12 (28%) 1/11	$n = 19$ Sign 3 (16%) 3/0	$n = 10$ Sign 1 (10%) 0/1	$n = 44$ Sign 14 (32%) 1/13	$n = 28$ Sign 4 (14%) 4/0	$n = 6$ Sign 1 (17%) 0/1	$n = 11$ Sign 5 (45%) 1/4	$n = 0$	$n = 209$ Sign 58 (28%) 36/22
Age or sex of physician	$n = 26$ Sign 9 (35%) 6/3	$n = 24$ Sign 15 (63%) 6/9	$n = 8$ Sign 1 (13%) 0/1	$n = 8$ Sign 2 (25%) 1/1	$n = 16$ Sign 9 (56%) 5/4	$n = 7$ Sign 3 (43%) 1/2	$n = 9$ Sign 4 (44%) 4/0	$n = 5$ Sign 2 (40%) 1/1	$n = 0$	$n = 103$ Sign 45 (44%) 24/21
Patients’ involvement in decisions	$n = 46$ Sign 30 (65%) 27/3	$n = 26$ Sign 7 (27%) 0/7	$n = 33$ Sign 17 (52%) 1/16	$n = 21$ Sign 10 (48%) 0/10	$n = 49$ Sign 16 (33%) 9/6/1	$n = 23$ Sign 5 (22%) 4/1	$n = 11$ Sign 2 (18%) 1/1	$n = 14$ Sign 6 (43%) 4/2	$n = 3$ Sign 2 (67%) 0/1/1	$n = 226$ Sign 95 (42%) 41/52/2
Information	$n = 104$ Sign 35 (34%) 21/14	$n = 72$ Sign 14 (19) 4/10	$n = 76$ Sign 13 (17%) 2/11	$n = 27$ Sign 11 (41%) 1/10	$n = 179$ Sign 23 (13%) 9/13/1	$n = 15$ Sign –	$n = 34$ Sign 6 (18%) 6/0	$n = 13$ Sign 7 (54%) 7/0	$n = 8$ Sign 3 (38%) 2/1	$n = 528$ Sign 112 (21%) 49/62/1
Counselling and support	$n = 42$ Sign 10 (24%) 4/6	$n = 23$ Sign 4 (17%) 1/3	$n = 48$ Sign 7 (15%) 2/5	$n = 6$ Sign –	$n = 50$ Sign 18 (36%) 14/4	$n = 23$ Sign 3 (13%) 0/3	$n = 4$ Sign –	$n = 5$ Sign 2 (40%) 0/2	$n = 0$	$n = 201$ Sign 44 (22%) 11/33

Table 5 Continued

Age (younger/older)	Sex (male/female)	Education (lower/higher)	Economic status (lower/higher)	Health status (poorer/better)	Utilization of care (lower/higher)	Family situation (alone/together)	Ethnicity (White/other)	Religion	Totals of nine columns
<i>n</i> = 461	<i>n</i> = 341	<i>n</i> = 296	<i>n</i> = 159	<i>n</i> = 580	<i>n</i> = 210	<i>n</i> = 125	<i>n</i> = 70	<i>n</i> = 34	<i>n</i> = 2276
Sign 173 (38%)	Sign 72 (21%)	Sign 63 (21%)	Sign 52 (33%)	Sign 135 (23%)	Sign 33 (16%)	Sign 29 (23%)	Sign 29 (41%)	Sign 21 (62%)	Sign 607 (27%)
105/68	18/54	15/48	10/42	55/78/2	14/19	17/11/1	16/13	16/4/1	260/343/4

*In each of the cells, the number of relations studied for this aspect of care is reported on line 1 (for cell 1: *n* = 31). The next line in each cell indicates the number of these relations showing significant differences with the percentages in brackets [for cell 1: Sign 13 (42%)]. The last line in each cell shows the direction of the significant results (for cell 1: 7/6) which means that younger patients showed a significantly higher preference for that aspect of care on seven occasions and older patients showed a significantly higher preference for that aspect of care on six occasions. Rarely, a significant result was reported in a study without giving the direction of this result. If this was the case this is registered as a third number on this line. See the cell 'Patients' involvement in decisions'/'Health status' for an example (6/9/1).

†The dimension 'Organization and cooperation' is presented independent of the aspect 'Special services available', the dimension 'Medical care' is presented independent of the aspect 'Burden on the patient' and the dimension 'Doctor-patient relation' is presented independent of the aspects 'Age or sex of physician' and 'Involvement in decisions' because these aspects were so frequently studied on an independent basis.

'Counselling and support' (201 times). Note that information on four specific aspects of care are presented independent of the more general dimensions of care because these specific aspects were analysed and mentioned so frequently in the various studies: 'Availability of special services', 'Burden on the patient', 'Age or sex of physician' and 'Involvement of patient in decisions'.

Patient preferences

In Table 5, a quantitative overview of the relations between the various patient characteristics and patient preferences is presented. In Table 6a-i, a descriptive overview of the specific relations found to be significant is presented. Of the 2276 studied relations, 607 (27%) showed one or the other patient characteristic to significantly influence patient preferences with regard to some aspect of health care. Religion was most frequently found to be significantly related to patient preferences with 62% of the analyses involving this patient characteristic proving significant, followed by ethnicity (41%). However, the absolute number of analyses for both religion and ethnicity was low (*n* = 34 and 70, respectively). Age was significantly related to patient preferences in 38% of the analyses involving this patient characteristic, and economic status was related to patient characteristics in 33% of the relevant analyses. All of the other patient characteristics were found to relate significantly to patient preferences in less than 25% of the relevant analyses. Sex and utilization of care were least frequently found to influence patient preferences (with 21 and 16% of the relevant analyses, respectively, proving significant).

Examination of the different patient characteristics reveals the following picture. With regard to *age*, *younger patients* generally placed greater emphasis on direct access to specialist care, quick referral, aggressive treatment, cardiac resuscitation and physician attendance of courses (which all relate to the technical aspects of care) than older patients. Younger patients also valued having control over their

health care, clear involvement in decisions, being told the truth and receipt of the most detailed information possible more than older patients. In addition, the younger patients placed relatively greater emphasis on disease prevention in the form of vaccination and smears, preventive care and regular health checks (among other things) than older patients. Younger patients were also found to have a more marked preference for a female physician and a chaperone during consultations than older patients.

Older patients, in contrast, placed greater emphasis on the doctor making decisions and valued a more dominant or 'traditional' doctor to a greater extent than younger patients. Older patients also placed greater emphasis on continuity of care, general practitioner (GP) guidance of any hospital care, GP care as opposed to specialist care, complete health care and having the same physician for all symptoms. Finally, older patients showed a relatively greater preference for expectant management and a male physician.

The most striking differences between the care preferences for *male vs. female patients* pertained to the sex of the physician: male patients were found to have a greater preference for a male doctor, while female patients were found to have a greater preference for a female doctor or being helped by a nurse as opposed to a doctor. In addition, female patients showed a greater preference for the presence of a chaperone during consultations and a greater preference for regular screening for cancer and preventive care when compared to male patients.

Lower educated patients placed greater emphasis on continuity of care, a chaperone during consultations and a more dominant or 'traditional' doctor than higher educated patients. *Higher educated patients* placed greater emphasis on self referral to a specialist and the possibility of attaining a second opinion; they also desired more active participation in the health care delivery, process involvement in decisions and a more democratic doctor than lower educated patients. Higher educated patients showed a higher information seeking preference, a greater desire to receive the most detailed information, and also placed a greater

emphasis on sickness disclosure and being told the truth than lower educated patients. Finally, the higher educated patients placed relatively greater emphasis on prevention, blood tests, genetic testing and information about prevention.

Perhaps not surprisingly, patients with a *lower economic status* were found to place greater emphasis on the cost of treatment than patients with a higher economic status. Patients with a *higher economic status* were found to place greater emphasis on self-referral and open access to specialist care; these patients were also willing to travel further and pay more for treatment than patients with a lower economic status. Patients with a higher economic status place greater emphasis on involvement in decisions, had a higher information seeking preference and valued being told the truth and genetic testing more than patients with a lower economic status.

Also not surprisingly, patients with a *poorer health status* placed greater emphasis on such disease-related topics as the prescription of drugs, attaining a second opinion, and the receipt of disease-specific information in addition to a greater emphasis on personal care in the form of personal attention, and opportunities to talk at length about a problem when compared with patients with a better health status. In addition, patients with a poorer health status valued shorter waiting times and physician-assisted death more than patients with a better health status. Patients with a *better health status* emphasized disease prevention in the form of vaccinations, smears and regular health checks when compared with patients with a poorer health status.

Patients with a *lower utilization of health care* appeared to value more self-referral, a chaperone during consultation and a male doctor when compared to patients with a *higher utilization of health care* who placed a relatively greater emphasis on continuity of care, GP guidance of specialist care and having the same physician for all symptoms. Patients with a higher utilization of health care also showed a relatively higher preference for a female doctor than patients with a lower utilization of health care.

Table 6 Relations between patient characteristics and patient preferences: qualitative results (description of significant relations)*

(a) Age	
Availability	<p><i>Younger</i> patients give greater preference to hospital emergency treatment (Mold), home care rather than hospital care for low risk pneumonia (Coley), self-referral rather than a gate keeper system (Gross, Himmel, Tabenkin), trying different doctors (Beisecker); younger adolescents place greater emphasis on having the same physician as their parents (Kapphahn).</p> <p><i>Older</i> patients give greater preference to a group family practice (Al-Bashir), a nurse on premises (Smith), medical student participation (Simons), a physician rather than a medical student (Glasser), general practice care rather than specialist care (Poole); older adolescents place greater emphasis on having a different physician than their parents (Kapphahn).</p>
Accessibility	<p><i>Younger</i> patients give greater preference to appointments within a short time (Jung).</p> <p><i>Older</i> patients place greater emphasis on keeping costs low (Fletcher), home visitation when seriously ill (Jung), short waiting time for radiotherapy close to home (Palda), short waiting time for <i>in vitro</i> fertilization (Ryan), operation in hospital close to home (Finlayson).</p>
Organization and cooperation	<p><i>Younger</i> patients place greater emphasis on physician responsibility (Fletcher) and on cooperation of the GP with other care providers (McBride).</p> <p><i>Older</i> patients place greater emphasis on the GP guiding of hospital care (Al-Bashir), treatment of the entire family by the same physician (Bartholomew), the same physician every visit (Fletcher), usually the same physician (Smith CH), well-decorated premises (Smith CH), continuity of care from the same doctor (Himmel); older patients give greater preference to their usual physician for breathing difficulties, high blood pressure, relation problems and sore throat (Murphy, four comparisons), older patients find new doctors less comfortable (Murphy) and do not expect the usual care from a new doctor (Murphy).</p>
Preventive services	<p><i>Younger</i> patients place greater more emphasis on vaccinations and smears (Al-Bashir), regular health checks [Al-Bashir, Romm (two comparisons)], all children immunized (Smith CH), regular screening for cancer (Smith CH), health checks for children (Smith CH), preventive care (McBride), prenatal care (Roberts), PSA screening (Wolf), genetic testing for breast cancer (Tambor).</p> <p><i>Older</i> patients give greater preference to influenza vaccination (Romm), cholesterol measurement (Van de Voort), genetic testing for breast cancer (Jacobsen PB), pre-symptomatic testing of their children for Huntington disease (Markel) and only an echo during pregnancy when necessary (Van de Voort).</p>
Medical care	<p><i>Younger</i> patients give greater preference to the physician going on courses (Smith CH), quick referral (Van de Voort), diagnosis and treatment of illness (McBride), correct use of technology (McBride), prostatectomy (Hunter), availability of a doctor with hospital experience (Murphy).</p> <p><i>Older</i> patients place greater emphasis on complete health care (Fletcher), prescribing drugs (Wolinsky, Van de Voort), treatment of fracture of clavícula by physician him/herself (Van de Voort).</p>
Burden on the patient	<p><i>Younger</i> patients give greater preference to a standing position during genital examination (Heaton), cardiac pulmonary resuscitation (Mold), artificial respirator (Mold), aggressive treatment for a life threatening condition (Eisemann), physician-assisted death via pills (Jacobsen JA), physician-assisted death via injections (Jacobsen JA), trade quality of life for extended survival (early vs. advanced cancer) (Yellen '94, two comparisons).</p> <p><i>Older</i> patients have greater willingness to undergo vaginal ultrasound (Bennet), accept expected management for prostate cancer (as opposed to surgery) (Mazur '96), also a greater preference to die at home (Gilbar) and greater emphasis on treatment for menstrual disorders (Coulter).</p>
Doctor-patient relation	<p><i>Younger</i> patients give greater preference to asking about life events (Yaffe), receiving a hug (Moore).</p> <p><i>Younger</i> patients place greater emphasis on enough time (Jung), physician generally offering a chaperone for: genital examination when the physician is of the opposite sex, for heart/lung/abdominal investigation, for first-time examination of the genitals (all Penn, four comparisons), family member as chaperone (Phillips), chaperone for vaginal examination by own doctor and doctor other than your own (Jones, two comparisons). <i>Younger</i> adolescents place greater emphasis on parental presence (Kapphahn, two comparisons).</p> <p><i>Older</i> patients give greater preference to the physician being kind and attentive and also a friendly staff (Al-Bashir, two comparisons), the physician wearing a white coat (Anvik), the physician providing information on sex (Poma), the staff knowing the patients (Smith CH). <i>Older</i> male adolescents give greater preference to being alone with the physician (no chaperone) (Phillips).</p>

Table 6 (Continued)

Age and sex of doctor	<p><i>Younger</i> patients give greater preference to a female physician (Patton, Kerssens), have no preference regarding the sex of the individual performing pelvic examination (Patton). Younger adolescents have a higher health care provider sex preference (Kappahn, two comparisons).</p> <p><i>Older</i> patients give greater preference to a male physician for rectal examination (Heaton), older physicians (McKinstry), male physicians (Poma).</p>
Involvement in decisions	<p><i>Younger</i> patients give greater preference to involvement in decision-making (Thompson, Cassileth, Ende, Degner, Llewellyn '95, Bilodeau, Nease (two comparisons), Beisecker, Catalan, Beaver, Ruzicki, Vertinsky, Degner '97), an active role (Degner), family involvement in decisions (Degner), doctors making a treatment recommendation (Johnson), challenging authority (Haug, Beisecker), desire for control of health care (Woodward), making joint decision about treatment (Vick), suggesting different treatments from those prescribed by doctor (Beisecker), not placing oneself completely in doctor's hands (Beisecker), the right to make own medical decisions (Beisecker), locus of authority at patient (Beisecker), less preference for doctor making decisions (Kim), patient-centred style (Smith DH).</p> <p><i>Older</i> patients give greater preference to allowing a second opinion (Al-Bashir), a dominant (traditional) doctor (Elstad), the doctor making treatment decisions (Liu).</p>
Informativeness	<p><i>Younger</i> patients give greater preference to information on alternative treatment (Buckley), have a higher information seeking preference (Ende), give higher priority to communication with patients (McBride), have a higher desire for information (Ewart), desire to obtain all available information (Van der Waal), prefer sickness disclosure (Adib), desire pre-test education regarding possible emotional reactions to genetic counselling, post-test counselling and support after genetic counselling (Audrain, two comparisons), prefer being told the truth about prognosis (Blackhall), prefer having all information, good and bad (Cassileth), want maximum detailed information (Cassileth), want to be told the truth when patient may die soon, told that patient will die, but not soon (Dalla-Vorgia, two comparisons), clear desire for information (Deber), desire for information of influence treatment on body and sexuality (Degner), desire for information on treatment options (Meredith C), desire for information (Nease), emphasis on right to medical information (Beisecker), desire for information to parents of cancer patients, desire of information on job and career relations of cancer patients, information regarding family concerns: the spouse of cancer patients (Derdarian, three comparisons).</p> <p><i>Older</i> patients give greater preference to information on what is arthritis, occupational therapy, physiotherapy, understanding of medication and communication with physician (Buckley, five comparisons), talk to someone other than the physician about problems (Poma), educational pamphlets (Shank, two comparisons), greater explanation by doctors (Van de Voort), physician initiation of discussion regarding physical symptoms and daily activities (Detmar, two comparisons), information regarding care for oneself at home (Degner), discussion of sexually transmitted diseases and contraception (Malus, two comparisons).</p>
Counselling and support	<p><i>Younger</i> patients give greater preference to receipt of information on effects of treatment on sex life (Buckley), counselling on seatbelt usage, home safety issues (Price, two comparisons), family planning (Starr).</p> <p><i>Older</i> patients give greater preference to regular visitation of the elderly (Al-Bashir), counselling on weight reduction, sleep difficulties, financial problems (Price, three comparisons), physician initiation of discussion of relations with partner and family (Detmar), provision of self-care information in connection with breast cancer (Bilodeau).</p>
(b) Sex	
Availability	<p><i>Males</i> give greater preference to convenient surgery times (Smith CH), medical student participation (Simons).</p> <p><i>Females</i> give greater preference to a nurse as opposed to a doctor for consultation (Drury), availability of a female physician (Smith CH), self-referral (vs. gate keeper role for the physician) (Gross), physician respecting second opinion (Jung). Female adolescents give greater preference to a different physician than their parents (Kappahn).</p>

Table 6 (Continued)

Accessibility	<i>Males</i> give greater preference to waiting times under 20 minutes (Smith CH). <i>Females</i> give greater preference to easy phone consultation with the doctor (Allen), home baby delivery (Van de Voort).
Organization and cooperation	(-)
Preventive services	<i>Males</i> give greater preference to save injection rooms for drugs users (Fry). <i>Females</i> give greater preference to regular screening for cancer (Smith CH), echo only when necessary during pregnancy (Van de Voort), preventive care (McBride), genetic testing for breast and ovarian carcinoma (Struewing).
Medical care	<i>Males</i> give greater preference to the doctor sorting out problems and doctor attendance of courses (Smith CH, two comparisons). <i>Females</i> give greater preference to thorough examination (Vertinsky).
Burden on the patient	<i>Females</i> give greater preference to die at home (Gilbar), are more willing to undergo cardiac catheterization (Saha).
Doctor-patient relation	<i>Males</i> give greater preference to a male chaperone for teenagers (Philips). <i>Females</i> give greater preference to the physician wearing a white coat (Anvik), ethical conduct (McBride), a chaperone for genital examination when the physician is of the opposite sex, for heart/lung/abdominal examination, for the first time examination (genitals), a nurse offering to chaperone (Penn, five comparisons), a female chaperone, a low number of students present during examination (Bishop, two comparisons), a female chaperone for teenagers (Philips). Female adolescents give greater preference to parental presence (Kapphahn).
Age and sex of doctor	<i>Males</i> give greater preference to a male doctor in general, a male doctor for anal/genital examination (Fennema, two comparisons), a male doctor for general physical examination, examination for sexual problems, or examination for blood in the urine (Ackerman-Ross, three comparisons), males have no clear physician sex preference (Graffy). <i>Females</i> give greater preference to a female doctor in general, a female doctor for anal/genital examination (Fennema, two comparisons), a female doctor (Kerssens, Radius), a female doctor for general physical examination, examination for sexual problems, or examination for blood in the urine (Ackerman-Ross, three comparisons). Females (Kerssens) and female adolescents (Kapphahn) place greater emphasis on gender preference.
Involvement in decisions	<i>Females</i> place greater emphasis on having control of their health care (Eisemann), doctor making treatment decisions (Liu), participating in treatment decisions (Llewellyn-Thomas '95), no delegation of decision-making to doctor (Vertinsky), decision-making (Nease), treatment being a joint decision (Vick). Females give less preference to doctor making decisions for them (Kim).
Informativeness	<i>Males</i> give greater preference to sickness disclosure (Adib), information on cancer tests, the physical well-being of cancer patients and information about family concerns (attention to the spouses of cancer patients) (Detmar, three comparisons). <i>Females</i> give greater preference to information on diets and understanding medication (Bucley, two comparisons), treatment options (Meredith C), information in general (Nease), discussion of sexually transmitted diseases and contraception (Malus, two comparisons), information on the psychosocial well-being of cancer patients, information for the siblings and parents of cancer patients, and information on the prognosis of cancer patients (Derdiarian, four comparisons).
Counselling and support	<i>Males</i> give greater preference to doctor discussing relations with partner and family (Detmar). <i>Females</i> give greater preference to discussion of effects of illness on self-image (Buckley), help for personal problems (Kiraly). The physician's opinion regarding sex is more important for females than for males (Boekeloo).
(c) Education	
Availability	<i>Higher educated</i> give greater preference to availability of emergency services all day (Starr), self-referral rather than a gate keeper system (Gross), the possibility of a second opinion (Jung), reduction of consultation barriers (practice hours, baby sitting, transport to practice) (Meredith K), direct access to specialist care (Tabenkin).
Accessibility	<i>Lower educated</i> give greater preference to home visits in the case of serious illness (Jung), operation in hospital close to home (Finlayson).

Table 6 (Continued)

Organization and cooperation	<i>Lower educated</i> give greater preference to continuity (Van der Waal).
Preventive services	<i>Higher educated</i> give greater preference to yearly blood stool tests, yearly prostate exams, yearly cervical smears, preventive dental care (Price, four comparisons), post-mortem organ donation (Mold), genetic testing (Glanz), genetic testing breast-ovarian susceptibility (Lerman '94), genetic testing for colon carcinoma (Lerman '96). <i>Lower educated</i> give greater preference to cholesterol measurement (Van de Voort), genetic BRAC1 testing (Hughes).
Medical care	<i>Lower educated</i> give greater preference to drugs prescription (Wolinsky).
Burden on the patient	<i>Higher educated</i> give greater preference to treatment for menstrual disorders (Coulter, two comparisons). <i>Lower educated</i> give greater preference to trade of survival for sexual potency (Singer).
Doctor-patient relation	<i>Lower educated</i> give greater preference to a chaperone when the physician is male (Patton), lower educated adolescents give greater preference to parental presence (Kappahn, two comparisons).
Age and sex of doctor	<i>Higher educated</i> give greater preference to a female physician (Elstad).
Involvement in decisions	<i>Higher educated</i> give greater preference to involvement in decision-making (Ende, Strull, Thompson, Cassileth, Deber, Degner, Llewelyn-Thomas '95 (two comparisons), Hack, Nease (two comparisons), patient involvement in discussion (Strull), a more 'democratic' doctor (Elstad), the patient making decisions about life support technology (Blackhall), a patient-centred style (Dowset), seeing treatment as a joint decision (Vick). <i>Lower educated</i> give greater preference to a more 'traditional' doctor (Elstad).
Informativeness	<i>Higher educated</i> give greater preference to information seeking (Ende), attaining to most detailed information possible (Stewart), sickness disclosure (Adib), being told the truth about diagnosis and prognosis (Blackhall, two comparisons), the most detailed information possible (Cassileth), being told the truth when the patient may die soon, being told the truth when the patient probably may die but not soon, being told the truth the truth about a low probability of dying (Dalla-Vorgia, three comparisons), medical journals as a source of information about breast cancer (Bilodeau), information (Nease). <i>Lower educated</i> give greater preference to information about venereal diseases (Starr), the physician initiating discussion of physical symptoms (Detmar).
Counselling and support	<i>Higher educated</i> place greater emphasis on help and advice from the physician for smoking cessation, exercise programs, teaching breast self-examination, limiting alcohol consumption, difficulties sleeping (Price, five comparisons). <i>Lower educated</i> give greater preference to help with situational life support (financial, transport, housing) (Meredith K), self-care information for breast cancer (Bilodeau).
(d) Economic status	
Availability	Patients with <i>higher</i> economic status give greater preference to availability of nursing home care (Starr), self-referral rather than a gate keeper system (Gross, three comparisons), free access to specialist care (with or without financial incentives (Himmel, two comparisons).
Accessibility	Patients with <i>lower</i> economic status place greater emphasis on the costs of <i>in vitro</i> fertilization (Ryan). Patients with <i>higher</i> economic status give greater preference to the doctor being easy to consult on the phone (Allen), short waiting times for <i>in vitro</i> fertilization (Ryan), are willing to travel further to the practice (Shannon), are more willing to pay for abortion (Gibb).
Organization and cooperation	Patients with <i>lower</i> economic status give greater preference to continuity of care (Van der Waal).
Preventive services	Patients with <i>lower</i> economic status have more negative attitudes towards genetic testing (BRAC1) (Hughes, two comparisons). Patients with <i>higher</i> economic status give greater preference to annual eye examinations, annual blood stool tests every year (Starr, two comparisons), genetic testing for breast cancer (Tambor), genetic testing for colon cancer risk (Smith KR).
Medical care	Patients with <i>lower</i> economic status give greater preference to prescription of drugs (Wolinsky, two comparisons).

Table 6 (Continued)

	Patients with <i>higher</i> economic status give greater preference to diagnosis and treatment of illness and correct use of technology (McBride, two comparisons), are more willing to undergo percutaneous transluminal coronary angioplasty (PTCA) and coronary artery bypass graft surgery (CABG) (Saha, two comparisons).
Burden on the patient	Patients with <i>lower</i> economic status give greater preference to radiation therapy (Palda), are more willing to trade off survival for sexual potency (Singer).
Doctor-patient relation	Patients with <i>higher</i> economic status give greater preference to treatment for menstrual disorders (Coulter), are more willing to undergo cardiac catheterization (Saha).
Age and sex of doctor	Patients with <i>higher</i> economic status give greater preference to ethical conduct (McBride). Patients with <i>lower</i> economic status give greater preference to a female physician for cervical screening (Nichols). Adolescent patients with <i>higher</i> economic status have a more marked physician sex preference (Kappahn).
Involvement in decisions	Patients with <i>higher</i> economic status give greater preference to involvement in decision-making (Ende, two comparisons, Strull, Nease, three comparisons, Beaver), patient-centred style (Smith DH, two comparisons), patient making decisions about life support technology (Blackhall).
Informativeness	Patients with <i>lower</i> economic status give greater preference to education on staying healthy (Starr). Patients with <i>higher</i> economic status have a higher information seeking preference (Ende, two comparisons), value more communication with patients (McBride), prefer being told the truth about diagnosis and prognosis (Blackhall, two comparisons), prefer being told the truth when the patient may die soon (Dalla-Vorgia), value more information in general and particular with regard to treatment options (Meredith C, two comparisons), place greater emphasis on information (Nease, two comparisons).
Counselling and support	(-)
(e) Health status	
Availability	Patients with <i>poorer health status</i> give greater preference to a cardiologist vs. a primary care physician for chest pain, for syncope, for serious illness, for advice on sport participation, for sport physical examination, for antibiotic advice, for dental visit (Miller, six comparisons), a physician rather than a medical student (Glasser). Adolescent patients with a poorer health status give preference to a different physician as their parents (Kappahn, 11 comparisons). Patients with <i>better health status</i> give greater preference to self-referral rather than the gate keeper system (Gross), general practice care (Poole, two comparisons (405 and 406).
Accessibility	Patients with <i>poorer health status</i> give greater preference to short waiting times for total joint replacement (Llewellyn-Thomas '98). Patients with <i>better health status</i> give greater preference to inexpensive drug prescriptions (Al-Bashir).
Organization and cooperation	Patients with <i>poorer health status</i> give greater preference to the same physician on every visit (Fletcher), GP guidance of specialist care (Jung).
Preventive services	Patients with <i>poorer health status</i> give greater preference to save injection rooms for drug users (Fry, two comparisons), genetic counselling (Glanz), laboratory tests (Zemencuk), pre-symptomatic testing for Huntington disease (Markel, two comparisons). Patients with <i>better health status</i> give greater preference to vaccinations and smears and to regular health checks (Al-Bashir, two comparisons), prenatal care (Roberts), PSA screening (Wolf), genetic testing for colon cancer (Croyle).
Medical care	Patients with <i>poorer health status</i> give greater preference to the GP performance of minor surgery (Al-Bashir), prescription of drugs (Wolinsky, two comparisons), prostatectomy (Hunter) and are more willing to undergo percutaneous transluminal coronary angioplasty (PTCA) (Saha). Patients with <i>better health status</i> are more willing to undergo coronary artery bypass graft surgery (CABG) (Saha).

Table 6 (Continued)

Burden on the patient	<p>Patients with <i>poorer health status</i> are more willing to undergo vaginal ultrasound (Bennet, two comparisons), give greater preference to physician-assisted death via pills (Jacobsen JA, two comparisons), physician-assisted death via injection (Jacobsen JA), expected management for prostate cancer (vs. surgery) (Mazur '96), radiation therapy for breast cancer (Palda) and are more willing to undergo cardiac catheterization (Saha).</p> <p>Patients with <i>better health status</i> give greater preference to die at home (Gilbar, two comparisons), expected management for prostate cancer (vs. surgery) (Mazur '96, two comparisons), want greater benefits before accepting anti-hypertensive therapy (McAlister).</p>
Doctor–patient relation	<p>Patients with <i>poorer health status</i> give greater preference to personal attention (Al-Bashir).</p> <p>Patients with <i>better health status</i> give greater preference to talking through a problem at length (Hopton). Adolescent patients with a better health status give greater preference to parental presence during consultation (Kapphahn, 12 comparisons).</p>
Age and sex of doctor	<p>Patients with <i>poorer health status</i> give greater preference to a female physician (Elstad), to a male physician (Kapphahn, four comparisons).</p> <p>Adolescent patients with <i>better health status</i> have a more marked physician sex preference (Kapphahn, four comparisons).</p>
Involvement in decisions	<p>Patients with <i>poorer health status</i> give greater preference to allowing a second opinion (Al-Bashir), patient involvement in discussion (Strull), shared decision-making (Stewart), active role in decision-making (Degner, two comparisons), a role in decision-making (Davison), participation in hypertension management (Sims), treatment as a result of joint decision (Vick) and value a more traditional, dominant doctor (Elstad).</p> <p>Patients with <i>better health status</i> give greater preference to involvement in decision-making (Ende, two comparisons, Thompson, Vertinsky), participation in hypertension management (Sims) and an active role in decision-making (Degner).</p>
Informativeness	<p>Patients with <i>poorer health status</i> give greater preference to information on surgery (Buckley, two comparisons), occupational therapy, physical therapy, understanding of medication (Buckley, three comparisons), sickness disclosure (Adib), being told the truth about diagnosis and prognosis (Blackhall, two comparisons), on family risk for breast cancer (Degner '97).</p> <p>Patients with <i>better health status</i> give greater preference to information about alternative treatment (Buckley), family planning, advice about overseas travel (Hopton, two comparisons), attaining the most detailed information possible (Cassileth), being told the truth when patient may die soon (Dalla-Vorgia, two comparisons), being told the truth when the patient may die but not soon (Dalla-Vorgia), information on the chances of cure, treatment options, and the side effects of treatment (Meredith C, three comparisons), information about health problem, easy to understand explanation (Vick, two comparisons), attention to family concerns (the spouse of the cancer patient) (Derdiarian).</p>
Counselling and support	<p>Patients with <i>poorer health status</i> place greater emphasis on help and advice from the doctor with regard to the effects of illness on mood, dealing with pain, how illness may affect future, work, energy, relationship and self image (Buckley, seven comparisons), emotional support (Meredith K), information on how to cope with pain, equipment which can make life easier, which can help one to get better, giving up taking medications, special diets, blood pressure (Hopton, six comparisons).</p> <p>Patients with <i>better health status</i> place greater emphasis on help and advice from the doctor with regard to HIV infection, giving up smoking, death of someone close (Hopton, three comparisons), situational life support (financial, transport, housing) (Meredith K).</p>
(f) Utilization of health care	
Availability	<p>Patients with <i>lower utilization of health care</i> have a greater preference for self-referral rather than a gatekeeper system (Gross). Adolescent patients with a lower utilization of health care have a greater preference for a different physician as their parents (Kapphahn).</p> <p>Patients with <i>higher utilization of health care</i> have a greater preference for the same physician for the whole family (Jung).</p>
Accessibility	<p>Patients with <i>higher utilization of health care</i> have a greater preference for home visiting in the case of serious illness, the doctor being easy to consult by the phone (Jung, two comparisons).</p>
Organization and cooperation	<p>Patients with <i>higher utilization of health care</i> have a greater preference for the same physician for every visit, GP guidance of specialist care (Jung, two comparisons).</p>

Table 6 (Continued)

Preventive services	Patients with <i>lower utilization of health care</i> have a more positive attitude towards genetic testing (BRAC1) (Hughes). Patients with <i>higher utilization of health care</i> have a greater preference for sigmoidoscopy colon cancer screening, coloscopy colon cancer screening (Dominitz, two comparisons), genetic testing for breast cancer (Tambor, two comparisons).
Medical care	Patients with <i>lower utilization of health care</i> have a greater preference for prescription of drugs (Wolinsky, two comparisons).
Burden on the patient	Patients with <i>higher utilization of health care</i> have a greater preference for coloscopy for detection of colon cancer with a risk of perforation (Dominitz), treatment for menstrual disorder (Coulter, two comparisons), prenatal testing with miscarriage risk (Kuppermann).
Doctor–patient relation	Patients with <i>lower utilization of health care</i> have a greater preference for the presence of a chaperone during vaginal examination by their own doctor or by a different doctor (Jones, three comparisons), adolescent patients with lower utilization of health care have a greater preference for parental presence during consultation (Kappahn).
Age and sex of doctor	Patients with <i>lower utilization of health care</i> have a greater preference for a male doctor (Fennema). Patients with <i>higher utilization of health care</i> have a greater preference for a female doctor (Kerssens), have a more marked preference regarding the sex of the physician (Kerssens).
Involvement in decisions	Patients with <i>lower utilization of health care</i> have a greater preference for not to let the doctor make decisions (Ewart), involvement in decisions (Vertinsky, two comparisons), and a greater preference for treatment as a result of joint decisions (Vick). Patients with <i>higher utilization of health care</i> have a greater preference for involvement in decisions (Ruzicki).
Informativeness	(–)
Counselling and support	Patients with <i>higher utilization of health care</i> have a greater preference for help and advice with regard to smoking cessation, home safety issues (Price, two comparisons), doctor guidance of medicine consumption (Jung).
(g) Family situation: dichotomy involving single, small number of children or no family support vs. married, with a higher number of children or family support	
Availability	Patients with <i>children younger than 5 years of age</i> have a greater preference for appointments in the morning, patients with <i>children of school age</i> prefer appointments in the afternoon (Cartwright, two comparisons).
Accessibility	(–)
Organization and cooperation	(–)
Preventive services	<i>Single</i> patients have more negative attitudes towards genetic testing (BRAC1) (Hughes), a higher intention to undertake pre-symptomatic testing for Huntington's disease (Mastromauro). Patients with a <i>small number of children</i> have a higher intention to undertake prenatal testing for Huntington's disease (Meissen), have a higher preference for prenatal testing (Roberts). Patients with <i>family support</i> have a greater preference for autopsy (Mold), genetic testing (Glanz).
Medical care	(–)
Burden on the patient	<i>Divorced</i> patients place greater value on physician-assisted death via pills or via of injection (Jacobsen JA, two comparisons). Patients with <i>family support</i> have a greater preference for cardiopulmonary resuscitation and respirator (Mold, two comparisons), patients with <i>higher family well-being</i> have a greater preference for aggressive therapy during early stages of cancer (Yellen '95), patients with <i>children</i> have greater preference for aggressive therapy during advanced stages of cancer (Yellen '95, two comparisons).
Doctor–patient relation	Patients with <i>higher family involvement</i> have a greater preference for family involvement in health care (Botelho).

Table 6 (Continued)

Age and sex of doctor	<i>Single</i> patients and patients with smaller number of children have a greater preference for a female physician (Patton, two comparisons), <i>Single</i> patients and patients with a smaller number of children have no clear preference regarding sex performing pelvic examination (Patton, two comparisons).
Involvement in decisions	<i>Single</i> patients have a greater preference for involvement in decisions (Ende). <i>Married</i> patients have a greater preference for involvement in decisions (Degner '97).
Informativeness	<i>Single</i> patients have a greater preference for information (Nease), being told the truth when the patient may die soon, being told the truth when the patient may die but not soon, being told the truth when there is a low probability of dying (Dalla-Vorgia, three comparisons), for information on self-care in the case of cancer (Davison). Patients without children have a greater preference for being told the truth when patient may die soon (Dalla-Vorgia).
Counselling and support	(-)
(h) Ethnicity	
Availability	<i>Non-white</i> adolescent patients have a greater preference for a different physician than their parents' physician (Kapphahn).
Accessibility	(-)
Organization and cooperation	(-)
Preventive services	<i>Non-white</i> patients have a greater preference for sigmoidoscopy or colonoscopy screening for colon cancer (Dominitz, two comparisons). <i>White</i> patients have a greater preference for genetic testing for breast cancer than black patients (Tambor). <i>Black</i> patients have more positive attitude towards the benefits of genetic testing for breast cancer (BRCA1 testing) (Hughes).
Medical care	<i>Black</i> patients have a greater preference for the prescription of drugs (Wolinsky). <i>White</i> patients are more willing to undergo renal transplant (Ayanian).
Burden on the patient	(-)
Doctor-patient relation	<i>Black</i> patients have a greater preference for a chaperone when the physician is female (Patton), <i>Non-white</i> adolescent patients have a greater preference for parental presence during consultation and examination (Kapphahn), patients who do not speak the official language have a higher tolerance of sexual remarks on the part of the physician and a higher behavioural tolerance for being given a hug, for example (Moore, two comparisons). Patients who speak the official language feel more comfortable during intimate examinations (Moore).
Age and sex of doctor	<i>White adolescent male</i> patients have a greater preference for a male physician (Kapphahn), <i>Black adult males</i> have a greater preference for a female physician (Van Ness).
Involvement in decisions	<i>White</i> patients have a greater preference for involvement in decisions (Strull). Patients who speak the official language have a greater preference for involvement in decisions (Degner '97), <i>African/European American</i> patients have a greater preference for involvement in decisions than Mexican American patients or Korean American patients (Blackhall, two comparisons), <i>African American</i> patients give greater preference to genetic testing for Breast-Ovarian cancer susceptibility against doctor's recommendation and place greater emphasis on parents deciding when minor children should be tested (Benkendorf, two comparisons).
Informativeness	Patients with a high level of (American) acculturation, and <i>African/European American</i> patients place greater emphasis on being told the truth about diagnosis and prognosis than patients with a lower level of (American) acculturation and Mexican American patients or Korean American patients (Blackhall, six comparisons). <i>White</i> patients have a greater preference for attaining the most detailed information possible (Cassileth).
Counselling and support	<i>African American</i> patients have a greater preference for emotional support and situational life support (housing, employment, financial aid) than <i>Caucasian American</i> patients (Meredith K, two comparisons).
(i) Religion	
Availability	<i>Non-religious</i> patients place greater emphasis on a second opinion (Vertinsky), <i>Muslims</i> place greater emphasis on the availability of an all Asian-clinic (McAvoy).
Accessibility	(-)

Table 6 (Continued)

Organization and cooperation	(-)
Preventive services	<i>Catholic or Jewish</i> patients have a greater preference for genetic testing for colon carcinoma than protestant patients (Lerman '96), <i>Non-catholic</i> patients have a greater preference for prenatal testing for Huntington's disease than catholic patients (Marke). <i>Protestant</i> patients have a greater preference for prenatal testing for Huntington's disease than Catholic or Jewish patients (Mastromauro).
Medical care	(-)
Burden on the patient	<i>Non-religious</i> patients have a more positive attitude towards physician-assisted death via pills or injection (Jacobsen, two comparisons), <i>non-religious</i> patients have a more positive attitude towards euthanasia for a competent person on life sustaining equipment, a terminal ill patient, a chronically disabled patient, a patient with AIDS, a chronically depressed patient, a patient with series of life disappointments, patients in a hospital with economic difficulties, a seriously ill and disabled child requesting euthanasia, parental refusal of the medical treatment required to save the life of a severely handicapped child (Genuis, nine comparisons).
Doctor-patient relation	(-)
Age and sex of doctor	(-)
Involvement in decisions	<i>Protestant and Christian</i> patients place greater emphasis on patient making decisions regarding life support technology than Catholic or Buddhist patients (Blackhall, one comparison).
Informativeness	<i>Non-Muslim</i> patients place greater emphasis on sickness disclosure to the patient than Muslim patients (Adib), <i>Protestant and Christian</i> patients place greater emphasis on telling the patient the truth about diagnosis than Catholic or Buddhist patients (Blackhall, one comparison), <i>Non-religious</i> patients place greater emphasis on being told the truth when patient may die but not soon (Dalla-Vorgia).
Counselling and support	(-)

*Name in parenthesis indicates the study which included that particular relation.

Patients *with family support and children* placed greater emphasis on cardiac and pulmonary resuscitation and aggressive treatment for cancer than patients without family support and children.

Patients with a *high level of American acculturation* placed greater emphasis on being told the truth than patients with a lower level of American acculturation. *White* patients valued receipt of the most detailed information possible more than non-white patients.

Non-religious patients showed a more positive attitude towards physician-assisted death than religious patients. Furthermore, non-religious patients showed a relatively greater emphasis on being told the truth that patient may die. *Muslims* placed less emphasis on sickness disclosure to patients than non-Muslims. *Protestants* placed greater emphasis on being told the truth about diagnosis than *Catholics*. And *Christians* placed greater emphasis on being told the truth about diagnosis than *Buddhists*.

Discussion

An overview was provided of 145 studies which report on the relations between patient characteristics and patient preferences. Patient characteristics were found to relate to preferences with regard to a number of different aspects of general practice care. Some 27% of the reported associations between patient characteristics and patient preferences were found to be significant. Perhaps the most obvious finding was that younger vs. older people had very different preferences. However, all of the patient characteristics examined in the various studies showed one or more associations with patient preferences.

The question is why older patients have different preferences than younger patients. Is it because older patients tend to have a poorer health status and reduced cognitive functioning¹⁵, which then give rise to other needs directly related to age (i.e. a simple age effect)? Or do older patients have different preferences because

they are from a different generation and grew up in an era in which the 'omnipotence of doctors was less likely to be challenged'¹⁶ (i.e. a cohort effect)? This is a very relevant question for the (near) future as the group of older patients is expanding rapidly and thereby placing a heavy load on the allocation of health care resources. Will the upcoming group of older patients have the same preferences, then, as older patients now?

Certain preferences are clearly related to being older. Older patients, for example, obviously consider such issues as 'family planning' and 'immunization of children' less important or relevant than 'influenza vaccination' and 'regular visitation of the elderly'. Older patients also tend to place greater emphasis on the continuity of care: 'expect a doctor to provide complete health care', 'same GP every visit' and 'prefer the staff to know them'. These sorts of preferences are unlikely to change when the present group of older patients is replaced by a new generation. However, other preferences appear to be less clearly linked to age. Why do older patients place less emphasis on involvement in decision-making, value a more dominant (i.e. traditional) doctor, wearing a white coat and opt for a less active patient role? Inglehart has identified a consistent trend in the value orientations of western industrial society with older people having an orientation towards traditional moral norms and younger people placing greater emphasis on such 'post-materialist' values as self-expression and democratic decision-making and processes.¹⁷ This trend appears to be a clear cohort effect as opposed to an age effect. And in line with such a cohort effect, the preferences of the newly emerging elderly with regard to medical decision-making and the role of the doctor can be expected to gradually shift towards more active participation on the part of the patient and a preference for a less paternalistic doctor.

Comparison of the findings of more dated vs. recent studies included in this review might prove interesting in this light. However, it is not possible to statistically compare these studies to determine whether certain relations have become stronger over time because the studies have been

conducted in very different settings and locations using very different methodologies. Perhaps the best way to approach this issue would be to repeat one of the older studies in exactly the same setting and location using exactly the same methods.

Examination of the descriptive overview of those preferences which significantly related to patient characteristics indicates a dichotomized value orientation towards health care. Patients can perceive themselves as rather passive consumers or more active participants. The typical 'active' or participatory patient places considerable emphasis on self-referral, wants direct access to specialist care, wants quick referrals and attaches considerable importance to aggressive treatment. This patient also has a high information seeking preference, desires the most detailed information possible, places considerable emphasis on being told the truth (such as sickness disclosure), values the exertion of as much self-control over his or her health care as possible, prefers a 'democratic doctor', desires active participation in the health care process and clearly desires patient involvement in decision-making. In addition, the more active patient has been found to show a greater preference for a female physician than the more passive patient. Finally, the more active patient clearly values such preventive measures as health checks, genetic testing and vaccinations. The 'active' patient is typically younger and higher educated with a higher economic status and better health status. The 'passive' patient, as already mentioned, places a greater emphasis on continuity of care, prefers to have the same physician for all symptoms, places greater emphasis on complete health care and greater emphasis on GP guidance of specialist care. In addition the more passive patient values 'wait-and-see management' as opposed to aggressive treatment, a more dominant style on the part of the doctor, a male doctor, less of an emphasis on patient involvement in decision-making and less of a focus on prevention. The 'passive' patient is also typically older and lower educated with a lower economic status and poorer health status. The sex of the patient does not appear to play an

important role in this distinction: that is, the 'active' or 'passive' patient can be either male or female.

This active-passive dichotomy appears to be reflected in the communication patterns of primary care physicians.^{18,19} When a physician is found to have a so-called consumerist pattern of communication (i.e. patient-centred), the patient is more likely to be young. When the physician displays a biomedical focus, the patient is likely to be more sick, older, and to have a lower income while the doctor is likely to be younger and male.

This distinction between a more passive vs. active role in health care coincides with a distinction which Calnan made of lay images of health in those with low norms of health vs. more 'positive' concepts of health.²⁰ The former 'see health as the absence of serious illnesses and define health care primarily in terms of the provision of curative services', while the latter define health care in terms of the provision of both prevention and curative services.

The results of the present literature analysis should be interpreted with caution. Only statistically significant findings are presented in Table 6 which means that numerous non-significant relations have been ignored. There may be a considerable publication bias, with significant results reported more frequently. Furthermore, the focus of the present study was on bivariate analyses of the relations between patient characteristics and patient preferences. Nevertheless, multiple correlations between patient characteristics may clearly influence their findings. For example, older patients are more likely to have a poorer health status, a lower economic status and a lower education. In addition, the results considered here come from very different settings with a predominance of location in the United States, the United Kingdom, and Canada which have very different health systems. The quality of the studies also varied widely along with the research methodologies, samples and response rates which means that a clear response bias may be present in some data. Certain patient characteristics and aspects of primary health care were also rarely included in the studies available

for consideration (see Table S2). The stability of the correlations (and the amplitude of the confidence intervals for the correlations) clearly depends on the number of studies addressing the specific relation. All of the above somewhat limit the generalizability of the present results of this systematic literature analysis. One should also keep in mind that the patient characteristics examined here explain only part of the variation in patient preferences. As Benbassat found in his literature analysis, for example, demographic characteristics could explain only 20% or less of the variability in patient preferences with regard to participation in decision-making.⁵

The present study should thus be seen as exploratory and hypothesis generating and leaves an obvious need for more research and well-constructed hypothesis testing.

An important direction for future research is gaining a further understanding of those factors which determine patient preferences. People, in general, and patients, in particular, do not always respond in rational ways to rational choices.^{21,22} Furthermore, patients' preferences are known to change over time.²³ Given these considerations and the individual variability in patient preferences, it is essential that decisions involving patients' values be clearly identified and intrusive external decision-making avoided in such cases. In order to do this, an inventory of those decisions (or types of decisions) which require the most patient participation should be developed along with a reliable method to assess patient preferences with regard to such.¹ A promising method for addressing patients preferences is the 'feeding forward' of patient preferences to physicians. One example is the feed forward form for diabetes care. Using this form, which has several components, the diabetes self-management issue or question with the most relevance for a particular patient can be identified prior to consultation for further consideration during a consult.²⁴ Controlled trials have shown such feeding forward of patient data to indeed increase physicians' recognition of patients' health problems and particular care needs.²⁵

Insight into the health care preferences of patients, as provided by this systematic literature

review, is also important for politicians, the planning and organization of services, clinical practice and education. A better understanding of patients' preferences can lead to a more patient-centred approach and thereby greater patient satisfaction, to greater adherence to treatment regimes and reduced use of other services (such as laboratory services and referral to a specialist).²⁶ However, a recent systematic literature review of the involvement of patients in health care showed very few studies to actually explore the effects of explicitly involving patients in the planning and development of health care. The effects of such patient involvement on the actual quality of the care provided have also not been considered.²⁷

Physicians do not routinely adopt a patient-centred approach to elicit patients' preferences with regard to their day to day practice.^{28,29} It appears, in fact, that physicians find it difficult to ask patients about their preferences during the course of a consultation. It is therefore essential that prospective physicians be trained to eliciting patient preferences as part of their core communication skills. Both prospective and experienced physicians should reflect on how to cope with not only the signs and symptoms presented to them but also with the individual patients' health care preferences. Research has shown that the differences between physicians with regard to the amount of prescribed drugs, the number of referrals and the conduct of surgical procedures are not so much determined by differences in the nature and seriousness of the complaints presented but by the varying manners in which the physicians address and cope with the complaints and preferences presented to them.^{30,31}

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Supplementary material

The following material is available from <http://www.blackwellpublishing.com/products/journals/suppmat/HEX/HEX221/HEX221sm.htm>

Table S1 Included studies reported in 144 articles ($n = 145$, two studies were reported in one article)

Table S2 Number of times that the relation of nine patient characteristics with the preference of patients with regard to different aspects of health care was examined. Absolute numbers, percentage between brackets ($n = 145$ studies)

Table S3 Items included, patient characteristics included, and relations analysed per study. Absolute numbers with percentages between brackets ($n = 145$ studies)

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