

Perceived quality of care of primary health care services in Burkina Faso

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Introduction: Patients' views are being given more and more importance in policy-making. Understanding populations' perceptions of quality of care is critical to developing measures to increase the utilization of primary health care services.

Objective: Documentation of user's opinion on the quality of care of primary health care services.

Methods: A 20-item scale, including four sub-scales related to health personnel practices and conduct, adequacy of resources and services, health care delivery, and financial and physical accessibility, was administered to 1081 users of 11 health care centres in the health district of Nouna, in rural Burkina Faso.

Results: The respondents were relatively positive on items related to health personnel practices and conduct and to health care delivery, but less so on items related to adequacy of resources and services and to financial and physical accessibility. In particular, the availability of drugs for all diseases on the spot, the adequacy of rooms and equipment in the facilities, the costs of care and the access to credit were valued poorly. Overall, the urban hospital was rated poorer than the average rural health care centre. Analysis of variance showed that, overall, health system characteristics explain 29% of all variation of the responses.

Conclusion: Improving drug availability and financial accessibility to health services have been identified as the two main priorities for health policy action. Policy-makers should respect these patient preferences to deliver effective improvement of the quality of care as a potential means to increase utilization of health care.

Key words: quality of care, primary health care, consumer perception, measurement

Introduction

In the past decade, increasing attention has been paid to quality of care as a means to enhance the effectiveness of health care systems in developing countries. In many developing countries, various actions have been taken to look into quality of primary health care, through either research and development (recently Bojalil et al. 1998; Brugha and Zwi 1998; Haddad et al. 1998a, b; Hotchkiss 1998; Newman et al. 1998; Archibong 1999; Noorali et al. 1999) or full-blown quality assurance (QA) (Chase and Carr-Hill 1994; Palestine National Health Authority 1994; Whittaker et al. 1998; Tassara 1999).

Typically, a distinction is made between observed quality of care and perceived quality of care (Palmer et al. 1991). The former, focusing merely on structural and process measures, relates to professionally defined standards of care, and refers to whether health care services adhere to these standards. The latter relates to the views of patients, which are attracting more and more importance (Donabedian 1980; WHO 1990). Patients' perception of quality of care is critical to understand the relationship between quality of care and utilization of health services, and increasingly it is treated as an outcome of health care delivery (Ross et al. 1993; Susman 1994; Reerink and Sauerborn 1996). Experiences in Bangladesh (Andaleep 1999), China (Yip et al. 1998), Nepal (Lafond 1995), Sri Lanka (Akin and Hutchinson 1999) and Vietnam (Guldner and Rifkin 1993) provide growing evi-

dence that the perceived quality of care of health care services has a strong impact on utilization patterns.

This paper reports on the measurement of perceived quality of care of primary health care services in the health district of Nouna, Burkina Faso. Previous qualitative research on perceived quality of care in the same district showed that consumers were not satisfied with the health care services offered (Nikiéma-Heinmüller and Borchert 1998). Government services are only consulted by 19% of the population, others choose home treatment (52%), traditional healers (17%) or local village health workers (5%) (Sauerborn et al. 1995). This translates in a utilization of government services as low as 0.17 consultations per capita in 1997 (DRS Cantaloup 1997). Understanding patients' perceptions on the quality of care of government facilities may allow policy-makers to improve this quality of care, and hence increase the services' utilization (Parker and Knippenberg 1991; Bitran 1995; Hotchkiss 1998). The present research acts as a baseline measurement for a Quality Assurance project started in 2000 in the health district of Nouna.

The measurement of perceived quality of care is still in its infancy, and its measurement tools are often not well described and/or validated (Bryce et al. 1992; Maynard-Tucker 1994; Newman et al. 1998), with a few exceptions. Recently, Andaleep (2001) has studied several dimensions of perceived quality of care in Bangladesh including

responsiveness, assurance, communication, discipline and *baksheesh* (unofficial payments). He argues, arbitrarily, that these factors have a relatively greater influence on individuals' decisions regarding utilization compared with access and costs. Haddad et al. (1998b) developed and validated a scale in Guinea. This paper applies this instrument, adjusted for the specific context of Burkina Faso, and covers individual perceptions on health personnel practices and conduct, adequacy of resources and services, health care delivery, and financial and physical accessibility of care. This comprehensive approach allows us to assess the relative importance of determinants of quality of care that affect utilization patterns.

The aim of this paper is to inform policy-makers about the strengths and weaknesses of the quality of government primary health care services, as perceived by users, which can help define starting points to improve quality of care. Moreover, the present paper aims to contribute to the further development of an analytical framework for the measurement of perceived quality of care.

Methods

The study population

Data were collected on 1081 visitors of one urban hospital and 10 rural health care centres in the district of Nouna, in

north-west Burkina Faso. The rural health centres provide basic outpatient services and include a dispensary and maternity unit staffed by a certified nurse and a trained midwife. The urban district hospital, with some 100 beds with surgical facilities, is the first referral level for the rural health centres and has a physician on staff. Visitors to the health facilities were approached as they left the facilities evaluated. They were included in the study, and an appointment was made for an interview at home, if their reason for the visit included a consultation with the staff. During the interview, a questionnaire was administered to the patients themselves or, in the case of children younger than 15 years, to the accompanying adult. The response rate to the interview questions was 96%. In addition to the items dealing with quality, the questionnaire included questions on respondents' socio-demographic characteristics. The majority of the respondents were female (57%), and 82% of the respondents were uneducated. The average age was 34 years.

Questionnaire

The instrument for quality assessment was based on an instrument developed and validated earlier for documenting quality of care in Guinea (Haddad et al. 1998b). The results of an exploratory study in Nouna district in Burkina Faso were used to assess whether the same items, as selected in the Guinea study, were also relevant for Burkina Faso

Table 1. Results of factor analysis^a

Items	Factors				Communalities after extraction
	1	2	3	4	
Health personnel practices and conduct					
Compassion, support for patients	0.76	-0.02	-0.01	0.03	0.63
Respect for patients	0.75	0.05	-0.10	-0.01	0.62
Reception of patients	0.75	-0.07	-0.01	0.07	0.51
Honesty	0.67	0.10	-0.06	0.02	0.36
Follow up	0.67	-0.04	0.15	-0.05	0.44
Good clinical examination	0.61	0.11	0.20	-0.08	0.50
Adequacy of resources and services					
Adequacy of medical equipment	-0.03	0.83	0.06	-0.02	0.49
Adequacy of rooms	0.09	0.76	0.10	-0.15	0.57
Adequacy of doctors for women	-0.08	0.68	0.05	0.11	0.58
Number of good doctors	0.00	0.68	-0.02	0.13	0.56
Availability of drugs for all diseases on the spot	0.19	0.46	-0.11	0.14	0.49
Health care delivery					
Good diagnosis	0.01	0.09	0.78	-0.04	0.26
Prescription of drugs by doctors	0.00	0.12	0.77	-0.04	0.58
Quality of drugs	0.10	-0.10	0.47	0.34	0.63
Recovery, cure	0.21	-0.04	0.32	0.31	0.17
Financial and physical accessibility of care					
Payment arrangements	0.07	0.13	-0.09	0.73	0.53
Adequacy of costs	0.16	0.05	-0.11	0.70	0.51
Ease of obtaining drugs	0.02	-0.04	0.22	0.64	0.69
Distance	-0.11	0.06	0.02	0.41	0.60
Allowing sufficient time for patients	0.27	0.08	-0.01	0.31	0.36
% of variance explained by the factor after rotation	29%	9%	7%	6%	

^a Principal component analysis with four factor extraction. Factor coefficients after oblimin with kaiser normalization.

Table 2. Description and reliability analysis of subscales and total score

	Subscale				
	Health personnel practices and conduct	Adequacy of resources and services	Health care delivery	Financial and physical accessibility	Perceived quality (total score)
No. of items	6	5	4	5	20
Possible range	-12 to +12	-10 to +10	-8 to +8	-10 to +10	-40 to +40
Mean	6.43	0.37	4.23	1.64	12.80
Median	7	1	4	2	13
Standard deviation	3.13	3.91	1.88	3.27	9.20
Cronbach's alpha	0.78	0.79	0.55	0.62	0.86

(Nikiéma-Heinmuller and Borchert 1998). This study consisted of 20 focus groups in five villages, and aimed to identify the criteria lay people use to judge quality of care. The exercise resulted in a selection of a large number of items that were found to be important determinants of quality of care. There was a complete overlap with the pool of 20 items as defined by Haddad et al. Regrouping led to a questionnaire including 23 items.

The items were translated into the four main local languages (Bwamou, Djoula, Marka, Mooré) using the method of back-translation. It was then pre-tested on 25 people to allow for adjustment of wording. For each question, respondents could express one of five opinions: very unfavourable (-2), unfavourable (-1), neutral (0), favourable (+1) and very favourable (+2). The respondents were asked to express their opinion about the services in general, not on the one specific consultation after which they were approached by the research team. An unweighted aggregation procedure was used to calculate summary scores.

Results

Scale properties

On the basis of item analysis, 20 items were selected (Table 1). Factor analysis, to break down the items into homogeneous sub-scales, resulted in an item grouping which is coherent with the quality dimensions as proposed by various authors such as Donabedian (1980). Consequently this grouping has been used for the definition of four sub-scales (Table 1). The first sub-scale consists of six items related to the practices and conduct of the health personnel: patient follow-up, clinical examination, the reception of the patient, compassion, respect, time spent, and honesty of the staff. The second sub-scale includes five items related to the adequacy of resources and services in the facility, i.e. adequacy of the number of doctors, adequacy of doctors for women's treatment, adequacy of equipment, adequacy of rooms and availability of drugs. The third sub-scale includes four items including measures of health care delivery, i.e. prescription, quality of drugs, diagnosis and care outcomes. The fourth sub-scale includes five items related to the financial and physical accessibility of health care, i.e. the adequacy of fees, the

possibility of making special payment arrangements, distance, the ease of obtaining drugs and the time devoted by the doctor.¹

The results show that the respondents were favourable regarding the dimensions, 'health personnel practices and conduct' and 'health care delivery', but less so regarding 'adequacy of resources and services' and 'financial and physical accessibility'. The total score and the scores for three out of four sub-scales show mean scores that are larger than the median scores, indicating a skewed distribution which is often the case in studies on people's satisfaction or perceptions on the quality of care (Haddad et al. 1998b) (Table 2). The reliability of the scores, as indicated by the Cronbach's alpha values, ranges from 0.55 for the sub-scale health care delivery, to 0.86 for the total score. Modest reliability scores for the sub-scales health care delivery and accessibility can be explained by the limited number of items and the relative heterogeneous character of this sub-scale, and is not uncommon in opinion interviews (Haddad et al. 1998b).

Subgroup analysis

The impact of individual and system characteristics on the various scores are presented in Table 3. The results show that health personnel practices and conduct are perceived as poorer by relatively young people and those with at least primary education; the perceived adequacy of resources and services is judged poorer by relatively old people, females, those with at least primary education, and by those who live where the centre is located. Males and those with at least primary education rated health care delivery lower; respondents who live in another village than where the centre is located and with at least primary education rated financial and physical accessibility lower. Overall, the quality was judged lower by those with at least primary education.

Perceived quality of the health centres

To determine which centres differ in terms of perceived quality of care, we performed post-hoc tests, using a procedure (Tukey's honestly significant difference test) that allows for adjustment of the observed significance level for multiple comparisons. For the total score as well as for the

Table 3. Factors related to perceived quality: multivariate response model^a

Independent variable	Dependent variable (scale)													
	Health personnel practices and conduct			Adequacy of resources and services			Health care delivery			Financial and physical accessibility			Perceived quality (total score)	
	B ^b	95% CI	B	95% CI	B	95% CI	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Intercept	4.86^c	4.11	5.62	-1.90	-0.18	4.57	-0.62	-1.38	0.14	7.30	5.24	9.36	7.30	5.24
Age ≤ 25	-0.73	-1.14	-0.32	0.21	1.15	0.22	0.21	-0.21	0.62	0.11	-1.02	1.24	0.11	-1.02
Woman	0.05	-0.34	0.43	-0.90	-0.02	0.46	-0.26	-0.65	0.12	0.22	-0.46	0.60	-0.46	-1.51
No education	0.58	0.10	1.05	0.54	1.63	0.66	0.62	0.13	1.10	2.64	1.33	3.95	2.64	1.33
Live where the centre is located	0.02	-0.36	0.40	-0.98	-0.11	0.38	1.28	0.90	1.66	0.90	-0.14	1.94	0.90	-0.14
Centre (Ref = Urban hospital)														
Rural health centre #1	1.99	1.16	2.81	3.86	5.74	1.12	3.57	2.74	4.41	10.97	8.71	13.22	10.97	8.71
#2	1.59	0.78	2.40	-0.98	-0.06	-0.24	-1.27	-2.08	-0.45	-1.41	-3.62	0.81	-1.41	-3.62
#3	1.82	0.99	2.64	1.13	2.07	0.28	1.18	0.34	2.01	3.88	1.62	6.15	3.88	1.62
#4	2.75	1.96	3.54	3.60	4.50	1.34	4.50	3.71	5.30	11.71	9.55	13.86	11.71	9.55
#5	2.08	1.28	2.88	2.28	3.19	0.36	0.21	-0.60	1.02	4.43	2.24	6.62	4.43	2.24
#6	0.35	-0.49	1.19	0.22	1.18	-0.55	2.21	1.37	3.06	1.71	-0.59	4.01	1.71	-0.59
#7	0.75	-0.13	1.63	-3.06	-1.06	-0.42	0.44	-0.45	1.33	-1.84	-4.25	0.56	-1.84	-4.25
#8	-0.50	-1.22	0.23	-2.70	-1.05	-0.27	0.53	-0.20	1.26	-2.57	-4.55	-0.58	-2.57	-4.55
#9	4.19	3.38	5.00	2.19	3.11	0.45	1.08	0.26	1.89	7.40	5.19	9.61	7.40	5.19
#10	-0.32	-1.19	0.55	0.49	1.49	-0.33	0.52	-0.37	1.40	-0.19	-2.58	2.20	-0.19	-2.58
Variance explained (R ²)		21.9%		33.4%		11.4%		25.9%			30.6%			29.1%
Eta ² (health centres)		20.0%		30.4%		10.6%		23.6%						

^a The associations were studied using multivariate response models which allow the simultaneous inclusion of various dependent variables in regression analyses, and improves the quality of estimators.

^b The B values given have a direct interpretation: e.g. -0.73 for age ≤25 years on Health Personnel Practices & Conduct means that the younger patients give a score 0.73 lower than other patients, after adjusting for other variables such as gender, educational status, place of residence, and centre.

^c Values printed in bold are significant at p < 0.05.

four sub-scales, the perceptions on the quality of care often differ significantly between one health centre and the others (Table 3). In other words, the measures of perceived quality discriminate strongly between the different health centres.

The adjusted R^2 value, representing the percentage of variance explained by the various models, is larger than 20% for four of the five models. The health centres explain much of this variance.² This indicates, *in our model*, a high impact of health care system characteristics on the valuation of quality of care, relative to that of socio-demographic characteristics.

Discussion

This paper examines the quality of care of primary health care facilities in a rural region of Burkina Faso. There is a tendency for respondents to respond favourably to questions, as is systematically noted in research on perceived quality or satisfaction (Bitran 1995; Wouters 1995; Haddad et al. 1998b; Newman et al. 1998). This implies that results should be interpreted carefully and in a relative rather than an absolute sense. Despite this tendency, respondents' opinions are not very favourable in this study, as has also been shown by other studies in the same region (Nikièma-Heinmüller and Borchert 1998).

Respondents in various health centres (including the urban hospital) were relatively negative on items related to health personnel practices and conduct. The behaviour of health personnel has also been found to depress patient satisfaction in other studies (Abu-Zaid and Dan 1985; Waddington and Enyimayew 1989, 1990; Bichman et al. 1991; Haddad et al. 1995). The problem, however, rarely receives attention by health planners who seem to focus more on the technical aspects of quality (Bichman et al. 1991; Jarrett and Ofusu-Amaah 1992; Haddad and Fournier 1995). Consequently, the importance of interpersonal skills has been largely overlooked, an important quality aspect which in certain settings had been found to be mutually reinforcing the technical quality component (Gilson et al. 1994). Improving the attitudes of health personnel towards patients seems, therefore, a promising way to enhance perceived quality of care. The overall positive attitude of the respondents to health care delivery seems to conflict with earlier research in the same district which has shown inadequate physical examination, diagnosis and prescription by personnel (Krause et al. 1998a, b, 1999). Patients appear not to notice poor compliance rates with respect to these issues (Bitran 1995; Wouters 1995).

The quality of 'adequacy of resources and services' was valued as relatively poor. Respondents especially criticized the absence of drugs for all diseases on the spot. Many studies have shown that drug supply is a very important determinant of the utilization of health services (Abu-Zaid and Dann 1985; Waddington and Enyimayew 1989, 1990; Parker and Knippenberg 1991; Litvack and Bodart 1993; Bitran 1995; Haddad and Fournier 1995). These findings suggest that appropriate drug policies are likely to be among the single

most important policy actions that could improve quality of health care.

Respondents judged the financial and physical accessibility of care relatively poorly. In particular, the high costs of care and the lack of access to credit were factors that considerably hampered perceived quality of care. They are closely linked to the existing fee-for-service payment scheme, which has been introduced as part of the Bamako Initiative. The identification of 'financial and physical accessibility' as a distinct dimension of quality of care is an important asset of this study. This adds to earlier empirical (Haddad et al. 1998b) and theoretical (Donabedian 1980) work which relates quality of care to the traditional factors mentioned above, 'health personnel practices and conduct', 'adequacy of resources and services' and 'health care delivery'.

The findings of this study have demonstrated the feasibility of conducting a detailed assessment of indicators of perceived quality across a variety of health centres. Socio-demographic characteristics had only limited impact on the respondents' perceptions on quality of care: in all sub-scales and the total score, they contributed less than 10% to the explained variance. The study was able to detect some significant impacts of respondents' age, sex, educational status and place of residence on their perceptions, but these were relative small. Moreover, since the population is relatively homogeneous in terms of these variables (obviously except for age and sex), the overall impact of these variables is also small. The role of socio-demographic variable effects on people's satisfaction has been widely studied (Hall et al. 1987) and is still controversial (Haddad et al. 1992). This study has shown that the observed variation in the perceived quality of care is largely explained by health centres' variations: the health centre variable contributed always more than 90% to the explained variance. Overall, more than 30% of all variation in respondents' perceptions was explained by both socio-demographic and health system variables, a proportion which can be considered as satisfactory in social science research (Kennedy 1998). Adding more items to the measurement scale would increase its explanatory power but also decrease its practicality. Moreover, respondents seem to discriminate well between the various dimensions of quality of care. Also, it has demonstrated that the population makes sensitively different judgements on the different health centres. This means that, even when at first sight the responses are generally positive, they are at the same time sensitive and discriminative and therefore potentially very useful for quality evaluations (Ross-Davies and Ware 1988; Haddad et al. 1992).

The scale by Haddad et al. (1998b) appeared an appropriate instrument to assess patient perceptions on quality of care with precision, and can be usefully applied to acquire further understanding of quality of care in other countries too. In the case of Burkina Faso, improving drug availability and accessibility to health services have been identified as the two main priorities for health policy action. Policy-makers should respect these patient preferences to deliver effective improvement in the quality of care and thereby increase utilization of health care.

Endnotes

¹ With the exception of two items, all subscales show communalities higher than 0.30. More than half (50.5%) of the 20 items-space variance is explained by a four-factor extraction.

² This is indicated by the Eta², which is larger than 0.20 for four of the five models.

References

- Abu-Zaid HA, Dann WM. 1985. Health services utilisation and cost in Ismailia, Egypt. *Social Science and Medicine* **15b**: 451–61.
- Akin J, Hutchinson P. 1999. Health-care facility choice and the phenomenon of bypassing. *Health Policy and Planning* **14**: 135–51.
- Andaleeb SS. 1999. Public and private hospitals in Bangladesh: service quality and predictors of hospital choice. *Health Policy and Planning* **14**: 135–51.
- Andaleeb SS. 2001. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Social Science and Medicine* **52**: 1359–70.
- Archibong UE. 1999. Evaluating the impact of primary nursing practice on the quality of nursing care: a Nigerian study. *Journal of Advances in Nursing* **29**: 680–9.
- Bichman W, Diesfeld HJ, Aagboton Y, Gbaguidi EAC, Simhauser U. 1991. District health systems: users' preferences for services in Benin. *Health Policy and Planning* **6**: 361–70.
- Bitran R. 1995. Efficiency and quality in the public and private sectors in Senegal. *Health Policy and Planning* **10**: 271–83.
- Bojalil R, Guiscafre H, Espinosa P et al. 1998. The quality of private and public primary health care management of children with diarrhoea and acute respiratory infections in Tlaxcala, Mexico. *Health Policy and Planning* **13**: 323–31.
- Bryce J, Toole MJ, Waldman RJ, Voigt A. 1992. Assessing the quality of facility-based child survival services. *Health Policy and Planning* **7**: 155–63.
- Chase E, Carr-Hill R. 1994. The dangers of managerial perversion: quality assurance in primary health care. *Health Policy and Planning* **9**: 267–78.
- Donabedian A. 1980. *The definition of quality and approaches to its assessment*. Vol 1. Ann Arbor: Health Administration Press.
- DRS Cantaloup. 1997. Burkina Faso: Ministry of Health.
- Gilson L, Aliolio M, Heggenhougen K. 1994. Community satisfaction with primary health care services: an evaluation undertaken in the Morogoro region of Tanzania. *Social Science and Medicine* **39**: 767–80.
- Guldner M, Rifkin S. 1993. *Sustainability in the health sector, Part 1: Vietnam case study*. London: Save the Children Fund.
- Haddad S, Potvin L, Pineault R. 1992. Les études de satisfaction mesurent-elles des attributs des patients ou les caractéristiques des services qui leur sont fournis? (Do satisfaction studies measure attributes of patients or the characteristics of services provided?) In: Chytil MK, Duru G, Van Eimeren W, Flagle CD (eds). *Health Systems, the Challenge of Change*. Fifth International Conference on Health System Science, Prague, July 1992. Omnipress Publisher: pp. 1169–73.
- Haddad S, Fournier P. 1995. Quality, costs and utilization of health services in developing countries. A longitudinal study in Zaire. *Social Science and Medicine* **40**: 743–53.
- Haddad S, Fournier P, Machouf N, Yatara F. 1998a. What does quality mean to lay people? Community perceptions of primary health care services in Guinea. *Social Science and Medicine* **47**: 381–94.
- Haddad S, Fournier P, Potvin L. 1998b. Measuring lay people's perceptions of the quality of primary health care services in developing countries. Validation of a 20-item scale. *International Journal for Quality in Health Care* **10**: 93–104.
- Hall JA, Roter DL, Katz NR. 1987. Task vs. socio-emotional behaviours in physicians. *Medical Care* **25**: 399–412.
- Hotchkiss DR. 1998. The trade-off between price and quality of services in the Philippines. *Social Science and Medicine* **46**: 227–42.
- Jarret SW, Ofusu-Amaah S. 1992. Strengthening health services for MHC in Africa: the first four years of the 'Bamako Initiative'. *Health Policy and Planning* **7**: 164–72.
- Kennedy P. 1988. *A guide to econometrics*. Cambridge: The MIT Press.
- Krause G, Benzler J, Heinmuller R et al. 1998a. Performance of village pharmacies and patient compliance after implementation of an essential drug program in rural Burkina Faso, West Africa. *Health Policy and Planning* **13**: 159–66.
- Krause G, Schleiermacher D, Borchert M et al. 1998b. Diagnostic quality in rural health centres in Burkina Faso. *Tropical Medicine and International Health* **3**: 962–74.
- Krause G, Borchert M, Benzler J et al. 1999. Rationality of drug prescriptions in rural health centres in Burkina Faso, West Africa. *Health Policy and Planning* **14**: 288–91.
- Lafond AK. 1995. Improving the quality of investment in health: Lessons on sustainability. *Health Policy and Planning* **10**: 63–76.
- Litvack JL, Bodart C. 1993. User fees plus quality equals improved access to health care: results of a field experiment in Cameroon. *Social Science and Medicine* **37**: 369–83.
- Maynard-Tucker G. 1994. Indigenous perceptions and quality of family planning in Haiti. *Health Policy and Planning* **10**: 306–17.
- Newman RD, Gloyd S, Nyangezi JM, Machobo F, Muise J. 1998. Satisfaction with outpatient health services in Manica Province, Mozambique. *Health Policy and Planning* **13**: 174–80.
- Nikiéma-Heinmüller B, Borchert M. 1998. Appréciation de la qualité des soins par la population dans un district sanitaire du milieu rural au Burkina Faso (Appraisal of the quality of care by the population in a rural health care district in Burkina Faso). Nouna, Burkina Faso: PRAPASS.
- Noorali R, Luby S, Rahbar MH. 1999. Does use of a government service depend on distance from the health facility? *Health Policy and Planning* **14**: 191–7.
- Palestine National Health Authority/Ministry of Health and Palestine Council of Health, Quality of Health Care Unit. 1994. *The strategic plan for quality for health care in Palestine*. Gaza City and Jerusalem: Ministry of Health.
- Palmer RH, Donabedian A, Povar GJ. 1991. *Striving for quality in health care: an inquiry into policy and practice*. Washington, DC: Health Administration Press.
- Parker D, Knippenberg R. 1991. *Community cost-sharing and participation: a review of the issues*. Bamako Initiative Technical Report Series 9. New York: UNICEF.
- Reerink IH, Sauerborn R. 1996. Quality of care in primary health care settings in developing countries: recent experiences and future directions. *International Journal of Quality in Health Care* **8**: 131–9.
- Ross-Davies A, Ware J. 1988. Involving consumers in quality of care assessment. *Health Affairs* **7**: 33–48.
- Ross CK, Steward CA, Sinacore JM. 1993. The importance of patient preferences in the measurement of health care satisfaction. *Medical Care* **25**: 1138–49.
- Sauerborn R, Ibrango I, Nougara A et al. 1995. The economic costs of illness for rural households in Burkina Faso. *Tropical Medicine and Parasitology* **46**: 54–60.
- Susman JL. 1994. Assessing consumer expectations and patient satisfaction. *Archives of Family Medicine* **3**: 945–6.
- Tassara GG. 1999. Making a commitment to quality: development of the quality assurance programme in Chile, 1991–1999. *International Journal of Quality in Health Care* **11**: 443–5.
- Waddington CJ, Enyimayew KA. 1990. A price to pay, part 2: the impact of user charges in the Volta region, Ghana. *International Journal of Health Planning and Management* **5**: 287–312.
- Waddington CJ, Enyimayew KA. 1989. A price to pay: the impact of user charges in Ashanti-Akin district, Ghana. *International Journal of Health Planning and Management* **4**: 17–47.
- Whittaker S, Burns D, Doyle V, Lynam PF. 1998. Introducing quality assurance to health service delivery—some approaches from South Africa, Ghana and Kenya. *International Journal of Quality in Health Care* **10**: 263–7.

- WHO. 1990. *Measuring consumer satisfaction with health care*. Copenhagen: WHO Regional Office for Europe.
- Wouters A. 1995. Improving quality through cost recovery in Niger. *Health Policy and Planning* **10**: 257–70.
- Yip W, Wang H, Liu Y. 1998. Determinants of patient choice of medical provider: a case study in rural China. *Health Policy and Planning* **13**: 311–22.

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