

# The two faces of enhancing utilization of health-care services: determinants of patient initiation and retention in rural Burkina Faso

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**Objective** To explore the factors that determine whether a patient will initiate treatment within a system of health-care services, and the factors that determine whether the patient will be retained in the chosen system, in Nouna, rural Burkina Faso.

**Methods** The data used were pooled from four rounds of a household survey conducted in Nouna, rural Burkina Faso. The ongoing demographic surveillance system provided a sampling framework for this survey in which 800 households were sampled using a two-stage cluster sampling procedure. More than one treatment episode was observed for a single episode of illness per patient. The multinomial logit model was used to explore the determinants of patient initiation to systems of modern, traditional and home treatment, and a binary logit model was used to explore the determinants of patient retention within the chosen health-care provider system.

**Findings** The results suggest that the determinants of patient initiation and their subsequent retention are different. Household income, education, urban residence and expected competency of the provider are positive predictors of initiation, but not of retention, for modern health-care services. Only perceived quality of care positively predicted retention in modern health-care services.

**Conclusion** Interventions focusing on patient initiation and patient retention are likely to be different. Policies directed at enhancing initiation for modern health-care services would primarily focus on reducing financial barriers, while those directed at increasing retention would primarily focus on attributes that improve the perceived quality of care.

**Keywords** Delivery of health care/statistics; Health services accessibility; Patient acceptance of health-care/psychology/statistics; Patient satisfaction/economics; Patient compliance; Fees and charges; Health services/standards; Home nursing/utilization; Choice behavior; Medicine, Traditional; Quality of health care; Health services, Indigenous/utilization; Socioeconomic factors; Rural health services; Policy making; Sampling studies; Burkina Faso (source: MeSH, NLM).

**Mots clés** Délivrance soins/statistique; Accessibilité service santé; Acceptation des soins/psychologie/statistique; Satisfaction malade/économie; Observance prescription; Tarifs et honoraires; Services santé/normes; Soins infirmiers domicile/utilisation; Comportement choix; Médecine traditionnelle; Qualité soins; Service santé indigène/utilisation; Facteur socio-économique; Service santé milieu rural; Choix d'une politique; Etude échantillon; Burkina Faso (source: MeSH, INSERM).

**Palabras clave** Prestación de atención de salud/estadística; Accesibilidad a los servicios de salud; Aceptación de la atención de salud/psicología/estadística; Satisfacción del paciente/economía; Cooperación del paciente; Tarifas y honorarios; Servicios de salud/normas; Cuidados domiciliarios de salud/utilización; Conducta de elección; Medicina tradicional; Calidad de la atención de salud; Servicios de salud autóctonos/utilización; Factores socioeconómicos; Servicios rurales de salud; Formulación de políticas; Muestreo; Burkina Faso (fuente: DeCS, BIREME).

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## Introduction

Enhancing the utilization of health-care services has two faces: one, increasing initiation of patients to appropriate treatment and two, ensuring their subsequent retention. Initiation refers to the choice of health-care services made by the patient seeking

treatment for the first time, while retention refers to a follow-up visit to the same health-care services in order to seek treatment for the same episode of illness. The former deals primarily with reducing barriers that prevent access to appropriate treatment, including financial constraints, reducing distances to health-care

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facilities, and improving education. The latter, retention, deals with maintaining appropriate treatment and ensuring proper monitoring in the case of patients who have a chronic disease or who have not been cured by the first treatment. Although initiation has been the subject of extensive research (1–7), retention has received less attention. Of the few studies on retention that have been conducted, one concerns health-care switching behaviour of patients with malaria in a Kenyan rural community (8), and one relates to gynaecological care (9). Other studies that have looked at switching have mainly been concerned with insurance providers (e.g. 10, 11) and drug regimes (e.g. 12).

The reason for the concentration of research efforts on initiation may be the assumption that the factors that determine initiation into a health-care system are the same as those that determine retention, and the fact that the number of patients to be retained is a small proportion of the number required to initiate treatment. However, if the determinants of initiation and retention are different, then there may be a need to look more closely at existing policies and strategies in order to ensure that both types of determinant are taken into account. Moreover, if the determinants of retention are likely to have a multiplier effect on the determinants for initiation, then the effect on overall utilization may be much greater. For example, if people were to choose a health-care provider on the basis of advice from a neighbour (the “neighbourhood effect”), a person who is dissatisfied with their own experience of treatment received will be less likely to advise a neighbour to initiate treatment.

In the dataset from rural Burkina Faso used in this paper, we observed multiple episodes of treatment, in chronological order, for a single episode of illness, per person. We explored the determinants of patient initiation to treatment and their subsequent retention, if a second treatment episode was sought.

## Methods

### Sampling procedure and data collection

The data used to explore the determinants of initiation into a health-care system and of retention in that system were pooled from four rounds of a household survey conducted in Nouna, rural Burkina Faso. The survey was carried out within the framework of the ongoing demographic surveillance system (DSS), which involves the quarterly collection of demographic and health data from the same household members. A two-stage cluster sampling procedure was used in urban and rural areas of Nouna. During the first stage of cluster sampling, clusters were selected at random from rural areas (twenty clusters) and from urban areas (seven clusters). In the second stage, respondent households were selected at random from each of these 27 clusters. In total, 800 households were selected into the sample; 480 of these were in rural areas and 320 were in urban areas, representing 62% and 38% of all the households in these areas, respectively. All observations for the four rounds of the survey were pooled to obtain a sample that was of sufficient size to allow both patient initiation and retention to be analysed.

Individuals were asked whether or not they had been ill in the preceding one month. Each individual reporting an episode of illness was asked whether he/she had sought treatment from a health-care worker, a traditional healer or a relative/friend/self. For each episode of illness, individuals who had had more than one episode of treatment were asked to report the chronological order in which they had sought treatment from health-care providers. For example, a person who decided to go to the modern health-care provider and later change to the traditional healer

would report “modern” for the first episode of treatment and “traditional” for the second. For each episode of treatment, we collected additional information on the perceived quality of the care received and expenditure necessary. This chronology of events allowed us to examine whether a patient had sought more than one episode of treatment and, if so, whether the patient had changed health-care provider (i.e. had switched) or not (i.e. had been retained).

### Definition of variables

Commonly used variables are listed in Table 1, while others are described in the text.

*Treatment choice* was divided into three distinct systems of health care; “home”, including treatment by self, friend, or relative; “modern”, including treatment by health-care personnel including a nurse, midwife, doctor, pharmacist or dentist; and “traditional”, including treatment with herbs and other African traditional medicines administered by the traditional healer.

*Retention* was coded as 0 when a patient was retained in a health-care system (home, modern or traditional) for at least two episodes of treatment and 1 if the patient had switched from one system to another during the same episode of illness. Thus if a patient had sought treatment from a health-care worker in a health clinic and then went to a hospital, the patient was considered to be retained in the modern system of health care. Likewise, if a person had sought treatment from a hospital during the first episode of treatment and went to the traditional healer during the second episode of treatment for the same illness, the person was considered to have changed system and had therefore not been retained by the modern system.

For *type of illness*, malaria and fever were coded as 1, and other illnesses (e.g. diarrhoea, snake-bite, influenza, stroke, mumps) as 0. The literature suggests that people are less likely to seek treatment if they perceive the illness to be malaria (5). *Total health care expenditure* during the first episode of treatment comprised expenditure on transport, medication and consultation. *Reasons for treatment choice* included lack of money for an alternative, trust in the perceived competency of the system, and nearest choice. This was coded as 1 for competency and 0 otherwise. *Perceived quality of care* is considered to be a summary of the different attributes of the health-care provider in the opinion of the patient. It was defined on a five-likert scale, for which 1, 2, 3, 4 and 5 represented “very poor”, “poor”, “fair”, “good” and “very good” perceived quality, respectively, although for the analysis these were regrouped to “poor”, “fair” and “good”. *Education* of the head of the household was considered and classified as primary, secondary or alphabetization (a form of adult education in which people are taught to read and write, and also involves limited skills training).

### Statistical analysis

To explore the determinants of patient retention we used a binomial logit model, in which we concurrently compared patients who did not switch health-care providers with those who did, and with patients who did not seek a second episode of treatment. A multinomial model was used to concurrently compare different treatment choices for the first episode of treatment. The multinomial logit model can be thought of as an extension of the binary logit model (13). The multinomial logit model allows the effects of the independent variables to differ for each system of health-care provision. It can be thought of as simultaneously estimating binary logits for all possible comparisons

among the categories of health-care provider and estimates from binary logits provide consistent estimates of the parameters of the multinomial logit model (14).

## Results

The results suggest that the factors determining whether a patient is initiated into a system of health care and factors determining whether a patient is retained by that system are different. While household income, education, and type of illness determine the initial choice of provider (i.e. initiation), they do not determine whether patients switch health-care providers for subsequent treatment, if the illness requires more than one episode of treatment.

Table 2 shows the distribution of patients who sought treatment from the three health-care provider systems for the first episode of treatment. The results show that a greater proportion of rural residents seek health care from home and traditional systems. Patients who sought treatment from the modern system had had a higher level of education than those who sought treatment from the traditional system. Most patients (and a similar proportion of patients in each case) who chose the modern or

the traditional systems did so because of perceived confidence in the provider. The head of the household was more likely to seek treatment from the traditional or modern systems than were other members of the same household. Malaria was more likely to be treated at home.

Table 3 shows the distribution of patients who were retained, chose to switch to another system or never sought a second episode of treatment. The results show that men, the employed, those who had confidence in the provider system at the time of initiating treatment and household heads were more likely to change provider. Patients with malaria, rather than any other illness, and patients with a lower level of education were less likely to seek a second episode of treatment, and patients in urban areas were more likely to be retained than patients in rural areas.

### Determinants of choice at initiation of treatment *Modern versus home treatment*

The multinomial logit model was used to compare the factors influencing choice of health-care provider for modern versus home, traditional versus home, and traditional versus modern systems (Table 4). When modern treatment was compared to

Table 1. Definition and coding of commonly-used variables

Variable	Definition	Mean	Coding
Sex	Sex of the individual	0.50	1 = male, 0 = female
Cma	Household head	0.24	1 = household head, 0 = other
Mala	Type of illness	0.36	1 = malaria, 0 = other illnesses
Residence	Residence type	0.37	1 = urban, 0 = rural
Hcome	Annual household income	696 203	Numerical values
Employ	Paid employment	0.19	1 = yes, 0 = no
Cost	The total expenditure on health care for the first episode of treatment	1 546	Numerical value in CFA francs (currency of Burkina Faso)

Table 2. Distribution (%) of patients at initiation of treatment, Nouna, Burkina Faso

Variable	Category	Treatment system		
		Home (n = 966)	Modern (n = 323)	Traditional (n = 113)
Sex	Male	51.8	46.8	48.7
	Female	48.2	53.2	51.3
Residence	Rural	64.8	54.8	69.0
	Urban	35.2	45.2	31.0
Paid employment	Yes	15.7	27.2	27.4
	No	84.3	72.8	72.6
Education	None	67.8	56.5	71.7
	Primary	15.2	17.4	12.4
	Secondary	15.3	25.1	8.0
	Alphabetization	1.7	1.0	7.9
Reason for choice	Confidence in provider	41.6	61.9	64.6
	Others	58.4	38.1	35.4
Household head	Yes	22.4	27.2	28.3
	No	77.6	72.8	71.7
Illness category	Malaria	41.5	32.2	2.7
	Other illness	58.5	67.8	97.3
<b>Total</b>		<b>68.9</b>	<b>23.0</b>	<b>8.1</b>

Table 3. Distribution (%) of patients according to whether they were retained by a provider at second episode of treatment, Nouna, Burkina Faso

Variable	Category	Retained (n = 57)	Switched (n = 110)	No second treatment (n = 1235)
Health-care provider	Home	2.4	7.35	90.3
	Modern	8.4	7.74	83.9
	Traditional	6.2	12.39	81.4
Sex	Male	51.8	61.4	49.7
	Female	48.2	38.6	50.3
Residence	Rural	73.6	57.9	62.1
	Urban	26.4	42.1	37.9
Paid employment	Yes	27.3	36.8	17.8
	No	72.7	63.2	82.2
Education	None	59.1	56.1	66.5
	Primary	22.7	22.8	14.5
	Secondary	14.6	17.5	17.2
	Alphabetization	3.6	3.6	1.8
Reason for choice	Confidence in provider	37.3	68.4	48.2
	Others	63.7	31.6	51.8
Household head	Yes	30.9	36.8	22.8
	No	69.1	63.2	77.2
Illness category	Malaria	18.2	22.8	38.5
	Other illness	81.8	77.2	61.5
<b>Total</b>		<b>7.8</b>	<b>4.1</b>	<b>88.1</b>

home treatment, it was found that the perceived competency of the modern system, household income, whether an individual is employed and having secondary education versus no education positively influence people seeking modern health care, and this effect is significant at the 99% confidence level. Those that perceive themselves to be suffering from malaria are less likely to seek modern treatment. Women are also more likely to seek modern treatment than their male counterparts, with a result that was significant at the 95% confidence level.

### **Traditional versus home treatment**

We compared factors determining whether a patient sought treatment in the traditional system or at home. Patients who perceived the traditional system to be competent were more likely to use it. Perceived competency of the provider was more important for persons choosing the traditional system than for those choosing the modern system (1.02 versus 0.77), although not statistically significant. The effect of employment is significant and is greater for the traditional system than the modern system, i.e. employed people were more likely to choose the traditional system. Patients with malaria were less likely to seek treatment from the modern or traditional systems than to treat themselves at home, and those who did seek treatment outside the home were most likely seek it from the modern system, rather than the traditional system. Patients living in households with lower incomes were more likely to use the traditional system.

### **Traditional versus modern treatment**

Comparison of the factors determining whether a patient sought treatment in the traditional or the modern system, showed that persons aged 36–46 years were more likely to seek traditional health care than younger or older people. A higher household

income, alphabetization rather than having no education, and the perception of the illness to be malaria had a negative effect on the likelihood of seeking care from the traditional system. Patients from households in which at least one member had had a secondary-school education were more likely to seek health care from the traditional system.

### **Determinants of patient retention**

When comparing patient switching and patient retention during the second episode of treatment (Table 5), three key findings emerge. First, patients that perceived the quality of care during the first episode of treatment to be poor were more likely to switch to another provider system. Second, patients that had confidence in the provider at initiation of treatment were more likely to switch to another provider at the second treatment. Third, those that sought treatment at the modern facility were more likely to switch to either traditional or self-treatment. According to these results, the competency of the health-care provider was perceived before any encounter with the provider, while the quality of care was perceived after the first episode of treatment. Therefore, while the quality of care is determined after experiencing treatment, perceived competency of the provider is determined before that experience. It was anticipated that perceived quality of care would be most highly correlated with choice of the modern health-care provider. The model was run separately to determine the correlation between perceived quality of health care and type of health-care system, but this did not improve the specification of the model nor affect results.

When persons who switched or who were retained for the second episode of treatment were compared with patients who did not seek a second episode of treatment, a similar pattern in respect of perceived quality of health care again emerged (Table 5).

Patients who perceived the quality of the first treatment to be poor sought a second episode of treatment. Other statistically significant results suggest that patients who perceived the provider to be competent at the start of the treatment process were more likely to switch than those who did not seek a second treatment, although this was not the same for those who maintained treatment with the same provider. Patients in urban areas were less likely to be retained than those in rural areas. Finally, when switching was compared with not seeking a second episode of treatment, it was found that patients who went to a modern health-care provider for the first episode of treatment were more likely to switch to another provider than to refrain from seeking further treatment.

### Comparing determinants of patient initiation and retention

We set out to explore whether the determinants of initiation into and retention by a particular health-care provider differ if the patient seeks a second treatment option for the same episode of illness. The results suggest that the determinants do indeed differ. The perceived competency of the provider is an important determinant of choice and has the strongest effect for the modern health-care system. It is also significant in determining switching, that is, patients who had perceived the health-care provider to be competent chose to switch to another provider. Other than perceived provider competency, none of the factors that determine patient initiation are the same as those that determine whether a patient switches health-care providers.

### Discussion

We were motivated to compare determinants of patient initiation and patient retention by the fact that, although enhancing utilization of health services encompasses two faces — initiation of patients to seek treatment in a particular system, and retention by that system should the illness require further treatment or in the case of future illnesses — only initiation has been a subject

of extensive research (1–7). However, if the determinants differ, it is likely that different policy options may be required in order to increase utilization of modern health services.

Of the few studies relevant to retention, one concerns health-care switching behaviour of patients with malaria in a Kenyan rural community (8), and one relates to gynaecological care (9). In the former, based on ethnographic interviews, the author suggests that patients are more likely to start with self-treatment at home and to decide on the basis of their progress whether or not to switch to treatment from another provider. The author proposes that this allows the patient to minimize expenditure incurred as a result of the illness. It is also suggested that people are subsequently more likely to choose treatments available outside the home, including visiting a private health-care practitioner, a government health centre or a hospital, when the situation becomes serious. In the second study in women who had return appointments at an academic primary care centre for internal medicine, 23% of the 121 patients who initially had been treated by a non-primary care centre gynaecological-care provider indicated that they did not plan to return. Other studies that have looked at switching have mainly concerned insurance providers (e.g. 10, 11). The authors of one study (10) explored the effect of the adoption by the University of California of a policy of limiting its contribution to the cost of the least expensive insurance plan. The results suggest that out-of-pocket premiums increased for roughly one-third of University of California employees and individuals facing premium increases of less than US\$ 10 were roughly five times more likely to switch insurance plans than those whose premiums remained constant. Another study undertook a consumer survey to gauge the importance of 41 variables in making the decision to enrol or re-enrol/switch health maintenance organization. Using logistic regression analysis, they concluded that variables associated with access to emergency care services had the greatest impact on decisions to switch. This was contrary to results of other studies, which ranked access to emergency care much lower (11).

Table 4. Logit coefficients for a multinomial logit model of patient choice during the initiation of treatment, Nouna, Burkina Faso

Comparison <sup>a</sup>		Logit coefficients for									
		reason	sex	cma	mala	urban	hcome	employ	Education <sup>b</sup>		
									pri	sec	alph
M/H	$\beta_{M/H}$	0.77	-0.31	0.28	-0.46	-0.28	0.12	0.53	0.11	0.69	-0.69
	$\exp(\beta_{M/H})$	2.16	0.74	1.33	0.63	0.76	1.13	1.70	1.12	2.00	0.50
	$\rho$	<0.01	0.04	0.11	<0.01	0.26	0.01	0.01	0.43	0.01	0.31
T/H	$\beta_{T/H}$	1.02	0.01	-0.03	-3.15	-0.43	-0.53	0.93	-0.64	1.11	-0.35
	$\exp(\beta_{T/H})$	2.77	1.02	0.97	0.04	0.65	0.59	2.53	0.53	3.03	0.70
	$\rho$	<0.01	0.96	0.90	<0.01	0.23	0.04	0.01	0.11	0.04	0.46
T/M	$\beta_{T/M}$	0.25	0.31	-0.31	-2.70	-0.15	-0.63	0.40	-0.75	1.80	-1.05
	$\exp(\beta_{T/M})$	1.28	1.38	0.73	0.07	0.86	0.53	1.49	0.47	6.05	0.35
	$\rho$	0.29	0.20	0.29	<0.01	0.71	0.01	0.28	0.08	0.02	0.03
Number of observations											1401
Likelihood ratio $\chi^2$ ( $df = 20$ )											212.12
Pseudo $R^2$											0.10

<sup>a</sup> M = modern, H = home, T = traditional.

<sup>b</sup> Level of education: pri = primary; sec = secondary; alph = alphabetization.

Table 5. Logit coefficients for a multinomial logit model of patient switching and retention at second treatment episode, Nouna, Burkina Faso

Comparison <sup>a</sup>	Logit coefficients for													
	Perceived quality of care <sup>b</sup>		reason	hcome	Education <sup>c</sup>			employ	mala	sex	urban	Health-care system		
	Q-fair	Q-good			pri	sec	alph					Modern	Traditional	
S/R	$\beta_{S/R}$	-0.61	-1.53	1.24	0.00	-0.58	0.00	-0.85	0.20	0.69	0.50	0.72	1.01	0.11
	$\exp(\beta_{S/R})$	0.54	0.22	3.47	1.00	0.56	1.00	0.43	1.22	2.00	1.65	2.06	2.73	1.12
	$\rho$	0.13	0.02	<0.01	0.95	0.29	1.00	0.20	0.68	0.13	0.16	0.17	0.01	0.84
S/N	$\beta_{S/N}$	-3.10	-5.62	1.38	0.00	0.31	1.11	0.22	0.81	0.67	0.61	-0.71	1.48	0.23
	$\exp(\beta_{S/N})$	0.05	0.00	3.99	1.00	1.36	3.02	1.24	2.24	1.96	1.84	0.49	4.41	1.26
	$\rho$	<0.01	<0.01	<0.01	0.31	0.54	0.23	0.71	0.06	0.09	0.06	0.15	<0.01	0.66
R/N	$\beta_{R/N}$	-2.48	-4.09	0.14	0.00	0.89	1.11	1.07	0.61	-0.02	0.11	-1.43	0.48	0.12
	$\exp(\beta_{R/N})$	0.08	0.02	1.15	1.00	2.42	3.03	2.91	1.84	0.98	1.11	0.24	1.61	1.13
	$\rho$	<0.01	<0.01	0.58	0.19	0.03	0.17	0.03	0.08	0.95	0.65	<0.01	0.10	0.75
Number of observations													1392	
Likelihood ratio $\chi^2$ ( $df = 26$ )													375.60	
Pseudo $R^2$													0.30	

<sup>a</sup> S = switched providers at second treatment episode; R = retained by provider at the second treatment episode; N = no second treatment sought.

<sup>b</sup> Perceived quality of health care during the first treatment episode: Q-fair, perceived to be fair, Q-good, perceived to be good.

<sup>c</sup> Level of education: pri = primary; sec = secondary; alph = alphabetization.

The fact that while household income, urban residence, type of illness, and education are significant determinants of patient initiation into a treatment system, they do not determine patient retention, and that only the perceived quality of care during the initial treatment does is in line with health belief models (15). One of the key descriptors of the health belief model is the perceived benefit of taking action; taking action toward the prevention of disease or toward dealing with an illness is the next step to expect after an individual has accepted that they are susceptible to a disease and recognized it as serious. During the initial episode of treatment, the patient chooses a system of health-care services because the associated benefits are perceived to be higher than those of alternative systems. However, at the second episode of treatment, the quality of care previously experienced is used as a learning opportunity and the patient will only return to the same provider if there is a perceived benefit. These results are similar to those of studies reviewed above in which switching was determined by the enrolment experience in the case of the health maintenance organization and emergency services (11), prices in the case of insurance plans (10) and the motivation to reduce costs, in the case of Nyamongo's study in rural Kenya (8).

We recognize that the variable "perceived quality of care" used in the paper is not decomposable into different attributes, such as availability of drugs, conduct of personnel, equipment and costs (16), but is taken as an index of the different attributes. We therefore suggest that further research could attempt to decompose the five-likert-scale to identify different attributes of quality, as perceived by patients. In this case, the same instrument would elicit information on different attributes of quality and an overall assessment of quality using a likert scale.

The likelihood that a patient will switch from the modern health-care facilities, i.e. will not be retained, deserves comment. This has been investigated in a number of studies and the quality of modern health-care services has repeatedly been found to be

poor (15, 16). Baltussen et al. (16) used an instrument containing a 20-item scale, including four subscales related to personnel practices and conduct, adequacy of resources and services, health-care delivery, and financial and physical accessibility, which was administered to 1081 users of 11 health-care centres, found that overall, the urban hospital was rated less highly than the average rural health-care centre. Drug availability and financial accessibility to health services were identified as the two main priorities for health policy action. Krause et al. (17) presented a quantitative estimate of community effectiveness of treatment for malaria in Nouna, Burkina Faso, on the basis of population surveys, observational studies of health services and user surveys. They estimated the overall community effectiveness to be 3%, that is, efficacy of treatment with antimalarial drugs was reduced drastically by lack of effective distribution and administration.

Household income has been shown elsewhere to predict utilization of health care services (2, 4, 18). In this study, households with higher incomes were more likely to choose modern health care. A study in the United Republic of Tanzania (4) showed that socioeconomic status of the respondent's family predicted utilization of modern health-care services. Similarly, lack of money was a significant barrier to utilization of dental services, and income also predicted use of primary curative services in South Africa (2). Financial barriers were also reported in Zambia (19) and Burkina Faso (5). On the other hand, poorer households were more likely to use the traditional system. Perceived poverty predicted utilization of traditional health care services in the United Republic of Tanzania (4). The results of this study therefore agree with those of other studies showing that the higher the household income, the greater the likelihood that the household uses modern health-care services. Therefore minimizing financial barriers is likely to have a bigger impact in improving utilization of modern health-care

services than previously thought. This is because it is likely to shift patients from the traditional to modern health-care services, at least at initiation of treatment.

Employed people are more likely to seek treatment from the modern and traditional systems than at home, although the magnitude of effect is higher for the modern than for the traditional system. This is in agreement with the findings of a study in South Africa that showed that employed people were more likely to use primary curative services than unemployed people (2).

In this study, when the type of illness was perceived as malaria, the patients' preference was for home treatment, followed by modern and finally traditional treatment. In previous work (5), we showed that people chose home treatment for malaria because they perceived that they were sufficiently competent to treat the illness. Type of illness was also a significant determinant of choice of modern treatment in South Africa (2).

## Policy implications and conclusion

The immediate implication of our results for health-care policy is that interventions focusing on patient initiation and patient retention are likely to be different. For example, interventions to enhance patient initiation would probably focus on reducing financial barriers, since people with low incomes are less likely to use modern health-care services. Interventions to increase patient retention would primarily focus on improving attributes of health services that are likely to ameliorate the perceived quality of care. Therefore focusing only on patient initiation does not sufficiently capture the full picture and misses an important aspect that is likely to affect overall utilization of health-care services. ■

**Conflicts of interest:** none declared.

## Résumé

### Les deux aspects du renforcement de l'utilisation des services de santé : déterminants du premier recours à un système de soins de santé et de la fidélité du patient au système choisi dans les régions rurales du Burkina Faso

**Objectif** Explorer les facteurs qui déterminent le premier recours à un système de soins de santé et la fidélité du patient au système choisi, à Nouna, dans une région rurale du Burkina Faso.

**Méthodes** Les données utilisées ont été regroupées à partir de quatre passages d'une enquête dans les ménages réalisée à Nouna, dans une région rurale du Burkina Faso. Le système de surveillance démographique a fourni le cadre d'échantillonnage de cette enquête, au cours de laquelle 800 ménages ont été vus selon la méthode du sondage par grappes à deux degrés. On a observé plus d'un épisode de traitement par épisode de maladie par patient. On a utilisé un modèle logit multinomial pour explorer les déterminants du premier recours à un système de traitement – moderne, traditionnel ou à domicile – et un modèle logit binaire pour explorer les déterminants de la fidélité au système choisi.

**Résultats** D'après les résultats, les déterminants du premier

recours à un système de soins de santé et de la fidélité du patient au système choisi sont différents. Pour les services de santé modernes, le revenu du ménage, le niveau d'études, la résidence en zone urbaine et la compétence attendue du prestataire de soins sont des facteurs prédictifs positifs du premier recours à un système de soins, mais non de la fidélité du patient, pour laquelle seule la qualité perçue des soins était un facteur prédictif positif.

**Conclusion** Les interventions axées sur le premier recours d'un patient à un système de soins de santé et sur sa fidélisation seront probablement différentes. Les politiques visant à augmenter le premier recours à un système de traitement dans des services de santé modernes seront probablement axées sur la réduction des obstacles financiers, tandis que celles qui visent à fidéliser les patients seront principalement axées sur les aspects qui améliorent la qualité perçue des soins.

## Resumen

### Las dos facetas del fomento de la utilización de los servicios de salud: factores determinantes del comienzo del tratamiento y de la retención de los pacientes en la Burkina Faso rural

**Objetivo** Estudiar en Nouna, Burkina Faso rural, los factores que determinan si un paciente iniciará el tratamiento necesario dentro de un sistema de servicios de atención de salud, así como los factores que determinan si el paciente permanecerá o no en el sistema elegido.

**Métodos** Los datos proceden de cuatro tandas de una encuesta de hogares realizada en Nouna, localidad rural de Burkina Faso. El sistema de vigilancia demográfica en marcha permitió incluir a 800 hogares en un procedimiento de muestreo del conglomerados en dos etapas. Se observó más de un episodio de tratamiento por episodio de la enfermedad del paciente. Se usó un modelo logit multinomial para estudiar los factores determinantes del tratamiento inicial de los pacientes en el marco de sistemas de tratamiento moderno, tradicional y domiciliario, y un modelo logit binario para analizar los factores determinantes de la retención de los pacientes en el sistema elegido de dispensadores de salud.

**Resultados** Los datos obtenidos parecen indicar que los factores

determinantes del inicio del tratamiento por el paciente y de la retención posterior de éste son diferentes. Los ingresos familiares, la educación, el entorno urbano y la competencia esperada del dispensador son factores predictivos positivos del primer contacto, pero no de la retención, en el caso de los servicios de atención de salud modernos. El único factor predictivo positivo de la retención en tales servicios, en cambio fue la calidad de atención percibida.

**Conclusión** Las intervenciones tenderán a ser distintas según se centren en el comienzo del tratamiento de los pacientes o en la retención de los mismos. Las políticas dirigidas a facilitar el contacto inicial con los servicios de atención de salud modernos se centrarán principalmente en la reducción de los obstáculos financieros, mientras que las orientadas fundamentalmente a aumentar la retención se centrarán en los factores que mejoran la calidad de atención percibida.

## ملخص

الوجهان الأساسيان لتحسين الاستفادة من خدمات الرعاية الصحية: العوامل المحددة لبدء معالجة المرضى واستبقائهم، في أرياف بوركينافاسو

**الغرض:** استطلاع العوامل التي تحدد ما إذا كان المريض سيبدأ تلقي المعالجة في إطار نظام للخدمات الصحية، والعوامل التي تحدد ضرورة استبقاء المريض في نظام الخدمات الصحية المختار، وذلك في منطقة نونا في أرياف بوركينافاسو. **الطريقة:** تم جمع المعطيات المستخدمة في هذه الدراسة من مسح سكاني أجري على أربع جولات في منطقة نونا في أرياف بوركينافاسو. وقد اعتمد هذا المسح على إطار أخذ العينات الخاص بنظام الترصد الوبائي المستمر، وتم أخذ ٨٠٠ عينة من الأسر بطريقة عنقودية على مرحلتين. وتم تقديم أكثر من مقرر علاجي واحد للهجمة المرضية ذاتها لكل مريض. وقد استُخدم النموذج اللوغاريتمي المتعدد الحدود لاستطلاع العوامل المحددة لبدء تلقي المريض للمعالجة في نظم المعالجة الحديثة والتقليدية والمزلية، واستُخدم النموذج اللوغاريتمي الثنائي الحدود لاستطلاع العوامل المحددة لاستبقاء المريض في نظام لتقديم الرعاية الصحية المختار.

**الموجودات:** تشير النتائج إلى أن العوامل المحددة لبدء تلقي المريض للمعالجة تختلف عن العوامل المحددة لقرار استبقائه. ويعتبر دخول الأسرة، ومستوى التعليم، والإقامة في المدن، والكفاءة المتوقعة لمقدم الخدمة من العوامل الإيجابية التي تنبئ بإقبال المريض على تلقي المعالجة، لا لاستبقائه، في مرافق الرعاية الصحية المتطورة. والعامل الوحيد الذي ينبئ باستبقاء المريض في مرافق الرعاية الصحية المتطورة هو الجودة العالية للرعاية. **الخصيصة:** تختلف التدخلات التي تركز على بدء تلقي المريض للمعالجة عن التدخلات التي تركز على استبقاء المريض. فالسياسات التي تستهدف زيادة إقبال المريض على تلقي الخدمات الصحية المتطورة تركز بشكل أساسي على الحد من العوائق المالية، في حين أن السياسات التي تستهدف زيادة استبقاء المرضى تركز بشكل أساسي على الخصائص التي تحسن مستوى جودة الرعاية المقدمة.

المسح على إطار أخذ العينات الخاص بنظام الترصد الوبائي المستمر، وتم أخذ ٨٠٠ عينة من الأسر بطريقة عنقودية على مرحلتين. وتم تقديم أكثر من مقرر علاجي واحد للهجمة المرضية ذاتها لكل مريض. وقد استُخدم النموذج اللوغاريتمي المتعدد الحدود لاستطلاع العوامل المحددة لبدء تلقي المريض للمعالجة في نظم المعالجة الحديثة والتقليدية والمزلية، واستُخدم النموذج اللوغاريتمي الثنائي الحدود لاستطلاع العوامل المحددة لاستبقاء المريض في نظام لتقديم الرعاية الصحية المختار.

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