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Accessibility of diagnostic and treatment centres for visceral leishmaniasis in Gedaref State, northern Sudan

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Summary

OBJECTIVE To evaluate the accessibility of visceral leishmaniasis (VL) treatment.
METHOD Community-based study using in-depth qualitative interviews and focus group discussions with key informants, as well as quantitative questionnaires with 448 randomly selected heads of households in nine representative villages in three geographical sub-regions.
RESULTS Despite the high incidence of the disease, most people in Gedaref State know little about VL, and help at a treatment centre is usually sought only after traditional remedies and basic allopathic drugs have failed. Factors barring access to treatment are: lack of money for treatment and transport, impassability of roads, work priorities, severe cultural restrictions of women's decision-making power and distance to the next health center.
CONCLUSIONS To provide more VL patients with access to treatment in this highly endemic area, diagnostic and treatment services should be decentralized. Health education would be a useful tool to rationalise people's health-seeking behaviour.

keywords visceral leishmaniasis, kala-azar, epidemic, accessibility, Sudan

Introduction

Visceral leishmaniasis (VL) is endemic in 61 countries in four continents (Desjeux 1996). If untreated, its fatality rate is 95%. Worldwide, an estimated 500 000 new cases of VL occur each year and 90% of the VL disease burden occurs in Sudan, Brazil, India and Bangladesh (WHO 2001; Guerin *et al.* 2002).

In East Africa, VL (locally named kala-azar), is caused by the *Leishmania donovani* parasite, and is transmitted by the *Phlebotomus orientalis* sandfly vector, which has its habitat in *Acacia seyal* and *Balanites aegyptica* woodlands, characterized by black cotton soils (Hoogstraal & Heynemann 1969). In Sudan transmission is mainly anthroponotic (El-Hassan & Zijlstra 2001).

Large epidemics are often associated with famine, mass migration and civil disturbance. Poor economic conditions (Desjeux 1996; Thakur 2000), malnutrition (Cerf *et al.* 1987; Chin & Ascher 2000) and impaired reactivity of the immune system (Wolday *et al.* 1999; Lyons *et al.* 2003) also increase the risk of VL. Moreover, VL is also related to man-made environmental changes, such as labour migration to large agricultural schemes in previously uninhabited areas in which the parasite and the vector are endemic and animal reservoirs of the parasite exist (Hoogstraal & Heynemann 1969; Dereure *et al.* 2000; Mukhtar *et al.* 2000). Such factors may lead to an increased exposure to phlebotomine sandflies (Thomson *et al.* 1999; WHO 2001; Elnaiem *et al.* 2002).

VL is one of the major health problems in large parts of north-eastern and southern Sudan. Sporadic epidemic outbreaks occur, claiming thousands of lives (Seaman *et al.* 1992,1996; WHO 2001). Gedaref State in the north-east part of the country has been known to be endemic for VL since the early 1900s. The incidence of the disease is peri-annual but with distinct seasonal peaks in the dry, cool season between November and January just following the hot, rainy season from June to October (El-Hassan & Zijlstra 2001; MSF 2003). Cyclical, hyper-endemic periods (every 7–10 years) have been historically documented since 1980 (Seaman *et al.* 1992). During epidemics the incidence of clinical disease can surpass 50 cases per 1000 per year (Ritmeijer & Davidson 2003).

In March 1996 Médecins Sans Frontières-Holland (MSF) responded to a request from the Ministry of Health of Gedaref State to an outbreak of VL in that region and opened a treatment centre in Um-el-Kher, along the Rahad River in Rahad Province (see Figure 1). A second MSF treatment centre was established in Kassab, Galabat Province, in 1998. In order to increase access to VL treatment centres, MSF has supported the establishment of more decentralised VL diagnostics and treatment services

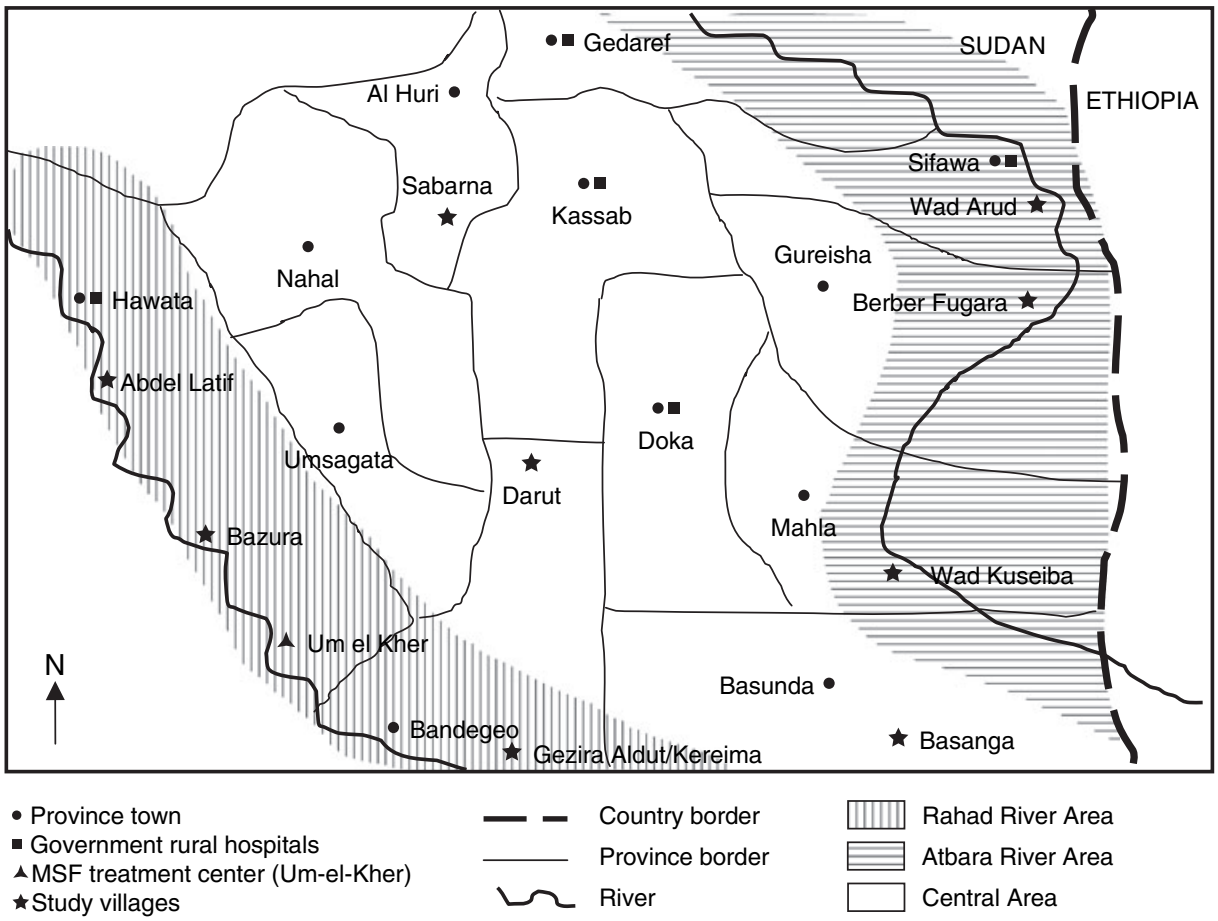

Figure 1 Map of Southern Gedaref State, Eastern Sudan.

in five governmental rural hospitals in southern Gedaref State since 2001.

From March 1996 to December 2003 about 24 300 patients were treated for VL in Gedaref state by MSF, which is an average of 3500 patients per year. Epidemic peaks have occurred during the 1997/1998 season (5747 cases treated), and a second peak occurred in 2002/2003 (5583 reported cases).

There are several factors affecting the epidemiology of VL in Sudan, from the host and the vector to the environment (Cerf *et al.* 1987; Dereure *et al.* 2000; El-Hassan & Zijlstra 2001; Elnaiem *et al.* 2002). Therefore, it has proven difficult to either predict or explain the disease pattern from year to year.

Despite the significant impact that the disease has on the health of many people in all endemic areas, most of the available epidemiological data of VL are either based on the effectiveness of different treatment possibilities (Veeken *et al.* 2000; Bryceson 2001; Boelaert *et al.* 2002) or on the number of cases reported to treatment facilities (El-Hassan & Khalil 2001; Lyons *et al.* 2003). However, this does not reflect the true disease incidence in the villages.

Therefore a key factor in beginning to understand the epidemiology of the disease is, in the absence of proper data, to gain more knowledge about the health-seeking behaviour in the population and their possibilities for seeking care in the context of educational and socio-economic levels of the population. The aim of this study was to evaluate factors affecting the accessibility of VL treatment centres and to understand barriers for seeking health care for VL. We tried to explain differences in accessibility in the population by collecting qualitative data about the perception of the disease, the education level in the population and their socio-economic status. Our findings will contribute to decision-making on how best to provide treatment and control services for VL in hyper-endemic areas in Sudan, both within MSF and in the Sudanese Ministry of Health. In addition, they will

be relevant to any country affected by this neglected disease.

Method

Study area and study villages

The study was conducted in southern Gedaref State, Sudan at the end of the dry season 2003 (May–June). The State consists of three main geographical areas, which were all included in the study: The Rahad River Area, the Atbara River Area and the Central Area between the two rivers (Figure 1). These areas reflect the main endemic regions for VL in eastern Sudan, showing the highest number of reported cases over the last few years.

To collect as much information as possible, study villages were selected that were representative of the variety of villages in Southern Gedaref State. Therefore, three different categories of villages were chosen in each area. First, villages with a high number of reported VL cases were selected by using patient admission data from the MSF VL treatment centre in Um-el-Kher and four government rural hospitals. Between 4% and 10% of the entire population of these villages had been treated there for VL over 5 years. Second, villages with either few or no reported cases were chosen using the same data. Third, villages were selected that were considered to have the worst physical access to any VL treatment centre.

Out of the three categories, one village was selected for each of the three different areas of Rahad River, Atbara River and Central. All together, nine villages were visited for 3 days each.

Study design, study population and study team

Qualitative data were obtained by interviewing key-informants in the villages using either in-depth interviews or focus group discussions. In each village a minimum of three in-depth interviews and two focus group discussions were conducted. The key-informants selected were those having respected positions in the villages. The moderator guidelines contained standardized open-end questions[1]. The following topics were discussed: general information about the village, health and illness, knowledge of VL, and accessibility to VL treatment centres.

In-depth interviews were held with the head of the village (*sheik*), the heads of the popular committee, the public school teachers and persons in charge of the health service (PCHS), such as nurses, midwifes, or village health volunteers. Women that had recently had a case of VL in their family, and elderly men of the village, participated separately in focus group discussions.

To gain additional quantitative information, heads of households were interviewed using a structured questionnaire[2]. The interviews were conducted in Arabic and the questionnaire was simultaneously completed in English. Information collected included the composition of the household, living conditions, health-seeking behaviour, and potential access to treatment centres in dry and rainy seasons. In each village, 50 households were selected via a systematic random sampling method, interviewing every second to 30th household, depending on the village population size.

The six interviewers for the study were selected according to the following criteria: (i) fluency in Arabic and good knowledge in English; (ii) experience in questionnaire-based survey research; and (iii) motivation and enthusiasm for participation in a field study during a very hot period of the year. The same interviewers were used for the whole period of data collection.

Quality control of data collection and data management

The data were collected following a series of strict criteria: (i) initial selection and training of interviewers and translators; (ii) permanent supervision of the study by the principal investigator; and (iii) frequent exchange and feedback sessions with the interviewers and the whole team in the field. In addition, a pilot study was carried out in an area, which was not part of the study (Gedaref town), so as to help the interviewers become familiar with the household questionnaire.

To obtain valid results from the qualitative data, the focus group discussions and in-depth interviews were all indexed and managed in the same systematic way. All data from the questionnaires were entered into an Excel spread sheet. Data calculations were carried out using SPSS (Version 11.1 for Windows 2002). Triangulation was used, combining qualitative and quantitative methods of the study.

Results

Gedaref State

We held 11 in-depth interviews and nine focus group discussions in the Rahad River area, 11 and six, respectively, in the Atbara River area and 13 and six in the central area. In addition, a total of 448 households with an average of eight persons per household were interviewed:

[1,2] Guidelines for in-depth interviews and focus group discussions, as well as the questionnaire for the household survey, will be provided upon request from the corresponding author.

147 in the Rahad river area, 150 in the Atbara river area and 151 in the central area.

Socio-economic status

Our in-depth interviews highlighted that those interviewed are all living in the context of a Muslim society. Some of the main tribes in the area, such as the Hausa (21% of the study population, $n = 94/448$) and the Tama (9%, $n = 39/448$) still live and act extremely conservatively: there is no school other than a Koran school, which is exclusively for boys, and women are not permitted to leave the house. This information was stated by all nine heads of the village and the nine heads of the popular committee in all nine villages visited.

More than two-thirds of the interviewed population live in closed grass huts (65%, $n = 289/448$), take their daily water from unprotected water sources such as wells and rivers (75%, $n = 334/448$), do not own any transport of their own (63%, $n = 281/448$) and have no radio at home (62%, $n = 277/448$). The main data from the household survey are summarised in Table 1.

The majority had lived for more than 5 years in the village (93%, $n = 417/448$) and almost no migration was mentioned. Only the Central Area sees an influx of migrant workers during the rainy season. These mainly come from within Gedaref State or the neighbouring Sennar State, which is one of the main endemic VL areas in Sudan (information from all three heads of the village and the three heads of the popular committee in the three villages of the Central Area).

Occupation – Harvest – Nutrition

More than 90% of all breadwinners are small farmers, mostly for subsistence production (84%, $n = 377/448$) or migrant workers on big farms (10%, $n = 43/448$). According to all interviewees in both the in-depth interviews and the focus group discussions, the last harvest season (September–December 2002) had been poor, the main reason being not enough water. The rainy season of 2002 was too short and there was too little rainfall for the main crops sorghum and sesame and for proper cultivation of vegetables.

In all areas, the key-informants mentioned during both in-depth interviews and focus group discussions that, as a consequence of this, there were many poorly nourished children in the villages. This was stated by all six village heads, five teachers and all PCHS in the Central and Atbara river areas, and by two village heads and one PCHS in the Rahad river area.

Education

Almost 90% ($n = 392/448$) of the interviewed heads of households had not received any formal education (i.e. they were either illiterate or had attended Koran school). In the household survey, on average one in four children in a household had attended any kind of school. All interviewed teachers confirmed these figures: on average only between 5% (from the teacher in Wad Kuseiba, Atbara River Area) and 50% of the households send their children to school (the latter stated by the teacher in Darut, Central Area; all other teachers (5) gave proportions within this range and two villages in Rahad river area did not have a teacher).

Two main reasons for the lack of education were cited by all of the interviewed teachers and confirmed both by the heads of the popular committee and the women in the focus group discussion: the first is financial; children have to contribute very early to the daily income of the household and thus do not have time to go to school. A second, and more important, factor in children not being

Table 1 Overview of the socio-economic status, occupation and education of the study population in Gedaref State (GS) and its three areas, the Rahad River (RA), Atbara River (AA) and Central Area (CA), Eastern Sudan, 2003

	GS $n = 448$ (%)	RA $n = 147$ (%)	AA $n = 150$ (%)	CA $n = 151$ (%)
Lodging in closed grass huts	65	75	45	73
Drinking water from a well/river	75	87	99	38
No own mean of transport	63	65	47	77
No radio at home	62	58	61	66
Living more than 5 years in the village	93	81	100	98
Small farmer	84	86	91	76
Day labourer on a big farm	10	10	3	17
No formal education†	88	89	93	81
Male (n = 305)	85			
Female (n = 143)	92			

† The interviewees were either illiterate or had attended Koran school.
Note: Only the main data are summarized in the table.

sent to school is the lack of willingness of the people. The heads of households, mainly men, do not see the importance of sending their children, especially their daughters, to school.

The results of the household survey confirm the opinion of the key-informants. There was a significant difference between men and women who had attended elementary school (36/10; $P = 0.001$). In addition only men had attended any school higher than elementary school ($n = 7$).

Perception of VL

The majority of those interviewed in Gedaref State had little knowledge about VL. Signs, symptoms, and mode of transmission of the disease are mostly unknown. Indeed, few expressed concern about VL (stated by all interviewees except two PCHS in the Rahad river area). There are many traditional and local perceptions and practices, which were consistently mentioned during the different interviews. Examples of these recorded include: (i) a special diet avoiding eggs and chicken helps to reduce fever; (ii) the perception that if malaria is not successfully treated for a long time it will turn into VL; (iii) that VL is an infectious disease and household members can catch it from each other; and (iv) that bad quality drinking water and heavy work cause VL.

Preventive measures against VL are rarely used in the villages. According to the household questionnaire, 31.5% ($n = 141/448$) did not use bednets. Those who did, did so only to protect themselves against mosquitoes, and therefore they were used mainly in the rainy season (23.4%, $n = 105/448$). 39.3% ($n = 176/448$) claimed to use bednets throughout the year. The in-depth interviews and focus group discussions showed clearly that most of the interviewees were unaware that mosquitoes and sandflies are the vectors of malaria and VL respectively. Where appropriate, interviewees were informed about further preventive methods, such as cleaning in and around the house and filling cracks in the soil. However, most did not see the need for this.

Nevertheless, most of the study population knew that they should take someone to a VL treatment centre if they had had prolonged fever for more than 2 weeks. Moreover, the locations of the different VL treatment centres were quite well known. This information transpired during focus group discussions held with men and women in all study areas, and was confirmed by the household study. In 66.7% ($n = 140/210$) of the households who brought a VL patient to a health facility in the last 3 months prior to the study, one of the existing VL treatment centres was chosen.

Factors influencing health-seeking behaviour

According to the focus group discussions held with women who had recently had a VL patient in their household, typical health-seeking behaviour consisted of three main steps in Gedaref State. Their statements were confirmed by the PCHS in all three areas. First, traditional home remedies (including traditional healers) were used to treat the sick. If there was no improvement, basic drugs were bought from local markets as a second step. The third and final step was to bring the patient to one of the health facilities. This health-seeking behaviour and the decision-making process were highly influenced by the following factors: (i) socio-economic; (ii) cultural accessibility; and (iii) geographical accessibility. These factors can all equally be seen as potential access barriers to seeking care.

The major socio-economic reasons for interviewees either not to take a patient to a health facility or to delay taking them, was cited unanimously as lack of money in the household, the cost of transport, and indirect opportunity costs in seeking care at time. If there is no money in the household, patients remain at home for a long time in the hope that they will recover spontaneously. To seek (professional) care, and to borrow money, can become a big burden to a household, as they are all faced with expenditures for transport, diagnostics, investigations, drugs, food and water. Health units were only consulted in the case of severely sick household members and patients often arrived in a very serious condition. In the household survey, 308 of the 448 interviewed households had had a sick household member during the last 3 months (69%). Of the 308 households with patients, one-third did not take them to a treatment facility (32%, $n = 98/308$). The most often-stated reason for this was lack of money at 43% ($n = 42/98$). At the time of the survey, two-thirds of the untreated persons were still sick at home ($n = 67/98$).

Being the first expense a household is confronted with when seeking care, transport cost is highly relevant in the decision-making process. Transport costs differ depending on urgency and the season. In the dry season, the heads of households estimated the median costs to reach the closest health unit by public transport at 290 SD [US$1 = SD260] in Gedaref State (Q_{25}–Q_{75}: 0–825 SD). The cost for private transport is on average two to three times higher (Table 2). In the rainy season, public transport does not exist. If people do not walk, they hire private transport, usually a tractor or a camel. These travel costs are also two to three times higher in the rainy season than in the dry season.

During the harvest season at the end of the rainy season, the first priority in the households is to harvest the grain (stated by all interview participants). Almost the whole population in Gedaref State consists of subsistence farmers

Table 2 Travel costs, time, and main means of transport mentioned by key-informants and interviewees in the household survey in the Rahad River (RA), Atbara River (AA), Central (CA) and Border Area (BA) and summarized for Gedaref State (GS) during the dry and rainy seasons, Eastern Sudan, 2003

	RA	AA	CA	BA	GS
Dry season					
Median travel costs [SD]† (HH survey‡)	270	100	400		290
Travel time (key-informants)	3h§-1d[4]	1-3h§	2h§-1d¶	≥ 1d¶	
Main means of transport (HH survey‡)	$n = 63$	$n = 75$	$n = 72$		$n = 210$
Vehicle (bus, car, truck) (%)	54	47	70		57
On foot (%)	36.5	49	29		38
Animals (%)	9.5	4	1		5
Rainy season					
Possible access to a treatment center (HH survey‡)	$n = 63$	$n = 75$	$n = 72$		$n = 210$
Yes (%)	54	80	56		64
No (%)	46	20	44		36
Travel time (key-informants)	1-3d¶	< 1d[4]	1-4 d¶	≥ 2-3 d¶	
Median travel costs [SD]† (HH survey‡)	700	1,000	350		500
Main means of transport (HH survey‡)	$n = 34$	$n = 60$	$n = 40$		$n = 134$
On foot (%)	68	50	65		59
Trucks (%)	15	33	28		27
Animals (mainly camels) (%)	18	15	3		12

† by the time of the study in 2003 US$ 1 was SD 260.
‡ household survey.
§ hours.
¶ days.

and thus depends mainly on the grain crop. They have no other source of income than their harvest. If someone becomes ill at this time, the household tries to hand over the harvest to the extended family or (less likely) to the community. However, if this is not possible, the sick person has to wait at home until the harvest is over. Enormous indirect opportunity costs would be incurred by taking somebody to a treatment centre at this time; consequently the family would struggle all year with financial problems.

Cultural factors such as traditions and preferences are main factors in seeking care (stated by the women in the focus group discussions and the PCHS in all villages and confirmed by the heads of the popular committee in all three study areas). Tradition forbids women in certain tribes to leave their houses in the absence of their husbands. Hence they are unable to take sick family members to a health unit. Furthermore, they have great faith in traditional healers and try all kinds of traditional home remedies before bringing a patient to a health unit. As a consequence, people arrive at the health facilities when the illness has become severe and with complications.

As first choice, people go to a VL treatment centre closest to their home village, regardless of the perceived quality. This was confirmed by results of the household survey: After lack of money (43%, $n = 42/98$), and that they would rather buy drugs on the market (13%, $n = 13/98$), the third main reason for not bringing a patient to a treatment centre was both (i) long distance to a health centre (9%, $n = 9/98$); and (ii) no health unit in their village (9%, $n = 9/98$). The second choice of treatment centre was related to the costs linked to the treatment facility. People chose the MSF treatment centre because of the free diagnosis, treatment, shelter and food provided.

To have geographic access to a treatment location is one of the most important conditions for seeking care. There were big differences in the ability to reach any treatment centre between the dry and the rainy seasons. Travel times also depend on means of transport (Table 2). In the dry season, the whole population is able to reach a health facility, although travel times differ between areas: in the Atbara river area, people need between 1 and 3 hours, in the Rahad river area between 3 hours and 1 day, and in the Central area, between 2 hours and 1 day. People in the 'Border Area'[3] have the longest travel time of at least 1 day in comparison to the other areas.

[3] During the evaluation of the data it was clearly seen that villages close to the Ethiopian border in South-East Gedaref (Gezira Aldut/Kereima, Rahad River Area and Basanga, Central Area) differ with regards to access to health centres from other villages within their same areas but show similarities with each other. We therefore combined these villages into the so-called 'Border Area'.

In the rainy season for one-third of the interviewed households with a sick person in Gedaref State, it is not possible to reach a VL treatment centre (36%, $n = 76/210$). In all areas access to a treatment centre is much worse in the rainy season. In the Atbara River Area people need less than 1 day to reach a VL treatment centre; in the Rahad river area between 1 and 3 days; in the Central area between 1 and 4 days, and in the border area at least 2–3 days. Especially at the end of the rainy season, access there becomes impossible.

According to the village heads, small villages do not have public transport possibilities. People often have to walk, to hire private transport or to take a donkey to reach a bigger village with regular public transport services (i.e. Gezira Aldut/Kereima, Border Area; Darut, Central Area). Villages with fixed market days have regular transport on these days (i.e. Basunda, Central Area; Wad Arud, Atbara river area). And bigger villages in general have regular public transport (i.e. Bazura, Rahad river area; Sabarna, Central area).

Discussion

Our study highlighted some interesting findings around the health and social needs of this population, their perceptions of VL, and their barriers to accessing treatment. Almost everyone in Gedaref State is a subsistence farmer and thus depends mainly on the grain crop. However, in most areas, the last harvest after the rainy season of 2002 was bad (reconfirming the pattern of worsening harvests over recent years) and little money was available in the households. This made them more vulnerable to negative events with a risk of not being able to cope with these situations (World Bank 2000/01). The deteriorating economic conditions in 2002/03 may have negatively impacted health status, resulting in increased malnutrition, and a subsequently higher risk of developing clinical VL after infection (Cerf *et al.* 1987; Desjeux 1996; Mukhtar *et al.* 2000).

VL was not perceived as a major problem in the community. People were either not aware of the disease or did not see the need for a change in their daily life. Health education campaigns to change the behaviour of the people concerning the disease might therefore be difficult. However, health education campaigns to sensitise people to come to the VL treatment centres much earlier may be successful.

VL treatment centres were chosen by the population due to their distance from their villages. A close centre distance, with low transport costs, was preferred to a further one with access difficulties, especially in the rainy season. These results clearly show that the concept of decentralised treatment services in the government rural hospitals within Gedaref State is successful and they are accepted and used in the population.

However, as soon as people have more or less the same distance to travel to reach either the MSF treatment centre or a government rural hospital they prefer to go to the MSF treatment place due to the free diagnosis, drugs, food, shelter and perceived staff attitude. As MSF conducted this study, the last argument especially could lack objectivity and be biased. However, both in the interviews and the household questionnaires people emphasised constantly the lack of money as one of the major barriers for seeking care, which makes free treatment one of the major factors in the decision-making process.

The geographical accessibility to VL treatment centres for the Rahad river, Atbara river and Central area is better than expected. Patients can reach a VL treatment centre in less than 1 day in the dry season. In the rainy season, two-thirds are able to reach a VL treatment location within 1–3 days. However, the travel costs, which are two to three times higher in the rainy season than in the dry season, have to be taken into account as a possible access barrier. The Border area is by far the least accessible, both in the dry and in the rainy season; almost no access to any health unit or VL treatment place is possible.

If early diagnosis and treatment is the main strategy for control of VL, establishing decentralised treatment services is essential in high-endemic areas, where physical and financial access barriers are main obstacles for seeking care. Another obstale was the lack of knowledge of the disease. Future health education activities should take this into account and deal with two different approaches. First, the population should be more aware of the symptoms of the disease and the consequences of delay. This would hopefully result in earlier seeking of care in the VL treatment centres and also in bringing more patients for treatment. Second, health education activities should deal with the causes of the disease and should lead to behavioural changes including prevention methods in the population.

Recognising the very low level of education in the population, the main message of all health education campaigns should be simple both to convey and to understand. Health education should mainly be person-to-person, as most people are illiterate, and only one-third of the households own a radio. Because women play a central role in the health of the household members and the implementation of disease-preventive behavioural change (McMichael 2000), they should be specifically targeted in awareness and health education activities. In addition, health education campaigns should be carefully adapted to the special beliefs, behaviours and traditions within the different (ethnic) groups living in areas that are endemic for VL.

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Accessibilité au diagnostic et au traitement de la leishmaniose viscérale dans l'état de Gedaref au nord du Soudan

OBJECTIF Evaluer l'accessibilité au traitement de la leishmaniose viscérale.
MÉTHODE Etude basée sur la communauté avec collecte de données par suite d'enquêtes qualitatives approfondies et groupes de discussions focalisé avec les informateurs clés. Des questionnaires quantitatifs avec 448 chefs de familles sélectionnés de façon randomisée ont été réalisés dans 9 villages représentatifs de 3 sous-regions géographiques.
RÉSULTATS Malgré l'incidence élevée de la maladie, la plupart des gens dans l'état de Geradef savent peu sur la leishmaniose viscèrale. Habituellement, le recours à un centre de traitement se fait seulement après échec des remèdes traditionnels et des médicaments allopathiques de bases. Les facteurs limitant l'accès au traitement sont: le maque d'argent pour le traitement et le transport, l'impraticabilité des routes, les priorités du travail, de fortes restrictions culturelles du pouvoir de prise de décision par les femmes et la distance au centre de santé voisin.
CONCLUSIONS Afin de permettre l'accès au traitement à plus de patients ayant la leishmaniose viscérale dans cette région de forte endémie, les services de diagnostic et de traitement devraient être décentralisés. L'éducation sur la santé serait aussi un outil utile pour amèliorer le comportement des gens dans la recherche de la santé.

mots clés leishmaniose viscérale, kala-azar, épidémique, accessibilité, Soudan

Accesibilidad a centros de diagnóstico y tratamiento de leishmaniasis visceral en el estado de Gedaref, norte de Sudan

OBJETIVO Evaluar la accesibilidad al tratamiento de la leishmaniasis visceral.
MÉTODO Estudio comunitario de recolección de datos a través de entrevistas semiestructuradas cualitativas y grupos de discusión focal con informantes claves, así como cuestionarios cuantitativos a 448 jefes de familias seleccionados al azar en 9 poblados representativos de 3 sub-regiones geográficas.
RESULTADOS A pesar de la alta incidencia de la enfermedad, la mayoría de las personas en el estado de Gedaref saben poco sobre la leishmaniasis visceral y la ayuda en un centro sanitario es buscada solo después de que han fallado las medicinas tradicionales y los medicamentos alopáticos básicos. Los factores que influyen sobre el acceso al tratamiento son: la falta de dinero y transporte, la inaccesibilidad de los caminos, las prioridades de trabajo, restricciones culturales severas en el poder de decisión de la mujer y la distancia al centro sanitario más cercano.
CONCLUSIONES Para proveer el acceso al tratamiento a un mayor número de enfermos de leishmaniasis visceral en esta área altamente endémica, se requiere de la descentralización de los servicios de diagnóstico y tratamiento. La educación sanitaria sería una herramienta útil para racionalizar el comportamiento de la búsqueda de cuidados de salud.

palabras clave leishmaniasis visceral, kala-azar, epidémico, accesibilidad, Sudan