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Human and animal health surveys among pastoralists

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Summary

Valid human and livestock health surveys, including longitudinal follow-up, are feasible among mobile pastoralists and provide fundamental information to agencies for interventions that are responsive to realities and effective in addressing the needs of pastoralists. However, pastoralists are often excluded from studies, surveillance systems and health programmes. The occurrence of preventable and treatable diseases such as perinatal tetanus, measles and tuberculosis are indicative of limited access to health providers and information. It is difficult for health services to include effective outreach with their available financial and human resources. One consequence is that maternal mortality rates among pastoralists are unacceptably high. Environmental determinants such as the quality of water and the pasture ecosystems further influence the morbidity of pastoralists. In the Sahel, the nutritional status of pastoralist children is seasonally better than that of settled children; but pastoralist women tend to have higher acute malnutrition rates. Pastoralist women are more vulnerable than men to exclusion from health services for different context-specific reasons. Evidence-based control measures can be assessed in cluster surveys with simultaneous assessments of health among people and livestock, where data on costs of disease and interventions are also collected. These provide important arguments for governmental and non-governmental agencies for intervention development. New, integrated One Health surveillance systems making use of mobile technology and taking into account local concepts and the experiences and priorities of pastoralist communities, combined with sound field data, are essential to develop and provide adapted human and animal health services that are inclusive for mobile pastoralist communities and allow them to maintain their mobile way of life.

Keywords

Health – Human – Joint assessment – Livestock – Pastoralism – Study design.

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General introduction to the health of pastoralists and their livestock

Mobile pastoral production is poorly captured by standard systems of appraisal, and pastoralists and their livestock are less likely to be included in health surveys and surveillance or in the design of development programmes. However, increasing the economic and environmental sustainability of dryland production is unlikely without reaching producers in pastoral systems with health and education services. But to provide mobile pastoralists with these services we must overcome the limitations of static health and education services; mobility is an economic and environmental necessity in the drylands, so it should not be constrained by ill-adapted services. Experiences in various settings show that more progress towards universal health coverage is achieved when coverage among disadvantaged groups is increased first (1). The physically demanding livelihood of pastoralists requires good human and animal health. Livestock-keeping confers human health benefits as well as health risks, and the relationships are not always linear (2). Only enhanced understanding of the production logic of pastoral mobility allows for the design of contextually appropriate programmes and the monitoring and evaluation of their actual effectiveness. Sound health and socio-economic surveys and follow-up studies are feasible among mobile pastoralists, and these can provide the necessary insight to create effective programmes. Developing joint integrative human and animal health interventions within a One Health logic can lead to beneficial health outcomes (3), and this fact should be more widely advertised. Below, the authors summarise results from studies on general health and demographics in pastoralist communities that have been carried out over the last 30 years, illustrating the positive impact of integrative approaches.

Livestock health

As several diseases that affect livestock in pastoralist communities also affect humans (e.g. Rift Valley fever), a One Health approach to disease control is vital. It is particularly important to control these diseases, and other highly contagious diseases of livestock (such as peste des petits ruminants), because they contribute to human food and nutritional insecurity (4). Pastoralists have strategies to help them protect their livestock from these diseases, but they also need medicines, vaccines and veterinary services. The last pockets of rinderpest remained among pastoralists because they had too little veterinary assistance. Only participatory approaches made it possible to reach these remote communities for successful disease eradication (5). Veterinary Services have successfully controlled many highly contagious cattle diseases, in addition to rinderpest, and they now focus on endemic diseases (including zoonoses and those caused by intestinal parasites) in both cattle and other livestock (6). Some livestock diseases are associated with poor animal nutrition and a lack of clean water (7) and lead to clinical signs, i.e. from selenium or vitamin E deficiency (8). Pastoralists seek effective livestock vaccines and drugs when available and apply successful herd management practices such as cross-breeding for more trypano-tolerant cattle. Mobility allows them to actively avoid areas with year-round infected vectors or fields contaminated with anthrax spores – but flexibility and mobility are constrained by fragmentation of grasslands (9) and conflicts (10, 11).

Human disease

The human diseases that affect mobile communities are often not dissimilar to those of sedentary communities in the same area. In Chad, for example, the main human health conditions found among mobile pastoralists of three different ethnic groups did not differ substantially from morbidity typical for the Sahelian population. In studies of West, Central and East Africa, frequent diarrhoea and fevers (12), respiratory infections, including lower-tract infections in children and tuberculosis in adults, and malaria had more impact on health than food-poisoning and zoonotic diseases such as brucellosis (13, 14, 15). However, pastoralists' mortality and morbidity is affected by the difficulty they have in accessing health services (7). Mortality due to infections such as measles and tuberculosis is a clear sign of insufficient access to good quality health services and exclusion from vaccination campaigns and appropriate information (16), although transmission of measles was low among Tuareg nomads in Niger due to their dispersion (17). Periodic nutritional shortages, as well as safety-related issues such as political insecurity, also have an important impact on human health among pastoralists.

In the 1980s, several studies showed marked differences in nutritional and health status between pastoralists and agro-pastoralists, e.g. higher infant mortalities among pastoralists compared to settled, crop-farming populations were reported from Mali, Kenya and Tanzania (14, 18), but no large-scale study has assessed demographic parameters, including mortalities, in the past two decades (19).

Additional problems include the lack of access to health information and the use of unsterilised instruments during childbirth and female genital mutilation, which partly explain why some pastoral communities struggle with unprecedented HIV/AIDS morbidity (20).

Challenges for women in pastoralist communities

Women's health is particularly vulnerable to political and ecological changes. For example, in post-Soviet countries, the decline of professional delivery assistance led to poor reproductive health and increased maternal mortality (21). But pastoralist women can be reluctant to seek health care because they are not always treated with respect by health staff, and language barriers can mean that they are not confident that they are receiving quality care. The unavailability of transport is an additional barrier to seeking help. Pastoralist women in Muslim African ethnic groups face particular challenges, as they cannot visit health centres, or access traditional services outside their own villages or camps, unless they are accompanied or have permission from their husbands or fathers. In other contexts, women experience difficulties in accessing health services because they lack the support of their social system and network (22). Additionally, women might feel ashamed or embarrassed to ask their husbands, particularly regarding sexual and reproductive health issues (23). The absence of a customary male chaperone due to spatial separation may make it impossible for women or their children to receive the treatment they need. Recently, studies on the use of mobile phones to seek health care have showed that this technology has both advantages and disadvantages. In areas with weak network coverage, it sometimes delayed treatment, because women no longer asked an accessible male chaperone but rather waited until they could reach their husbands by phone (24, 25). Education initiatives to empower pastoral women showed a positive impact on the health of their whole household, since these women tended to reinvest more of their income (mainly earned from selling milk), for example, by paying medical fees (26).

Joint human and animal health surveys

Whether studying women's health or health across the community, it is difficult to draw coherent conclusions on linkages between human and animal health from separated human and livestock health studies. Designing studies with a One Health approach to simultaneously assess human and animal health risk factors, perceptions and outcomes leads to a better understanding of the specific context of pastoralism, particularly when diverse disciplines such as social sciences, epidemiology and geography are associated (2). Joint human and animal health surveys are carried out concurrently in time and/or space and at different levels of aggregation: from individual, household or village level, to community, province or country level. The ideal outcome promotes improved human, animal and ecosystem health (27).

The content of this article is structured in two main parts, the first part is on results and lessons learned from comparative or integrated One Health studies and the second part is on study design and recommendations. The authors rely on their own work in Africa and Central Asia, alongside a review of findings of relevant working groups and literature. In the first part, they highlight the linkages of the pastoralists' use of grassland ecosystems with human and animal health outcomes. Where possible, results are shown by comparing pastoralists to a reference group to better perceive the specificities of pastoralist communities within the remote rural context. Both the risks and benefits of the pastoralist way of life are critically discussed. In the second part, the authors present methodological considerations for epidemiological human and animal health studies and monitoring and surveillance among mobile populations and discuss potential strategies and recommendations for using health information to develop inclusive and effective health interventions.

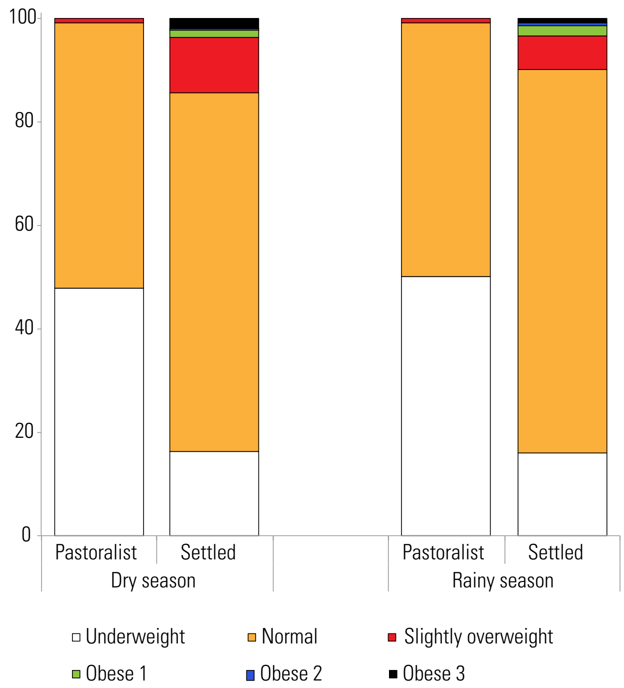
Selected health outcomes from comparative studies

Nutrition in pastoralist settings

In rural Chad, proportions of acute malnutrition were not higher in pastoral children compared to sedentary children. But both populations showed acute malnutrition proportions above 10% at the end of the dry season (13, 28) (Fig. 1). In contrast, pastoralist women were significantly more under-nourished (up to 48% in the dry season) than settled women, and obesity was only seen among settled

Fig. 1
Acute malnutrition of children in pastoralist and settled communities of Chad at the end of the dry season and the end of the rainy season
Source: Béchir *et al.* (28)

women (29) (Fig. 2). Acute malnutrition in children was significantly associated with anaemia and selected intestinal parasites (30). Other authors have observed that pastoralist mothers deprive themselves when food is in short supply (31). Among the Ariaal and Rendille in East Africa, children of three settled communities, one in a town that relies on relief agencies for food supply, showed three times the level of stunting and wasting when compared to the surrounding nomadic and semi-mobile pastoralists. These differences were attributed to greatly reduced access to milk and higher reliance on cereals in the settled communities (32). During the wet season, when milk was abundant and grain prices were highest, milk provided almost 90% of dietary energy to Turkana pastoralists and 80% to the Maasai (16, 33, 34). Milk selling tended to be the domain of women and it was also the women that decided how much milk should be allocated for home consumption. However, over the past three decades there have been a growing number of reports on how commercialisation of pastoral milk in peri-urban zones and new dairy plants in pastoral zones have become cash-making businesses taken over by men. Extra income from sales to dairy plants is sometimes invested in buying fodder for the animals to keep milk production more stable throughout the year. But this can mean that poorer pastoralist households consume less milk because they need the milk income to buy grains. It is clear, therefore, that these new milk-selling strategies have led to a relative reduction in milk consumption among pastoralists (26, 35).



Underweight: <18. 5
Normal: 18.5–25
Slightly overweight: 25–30
Obese 1: 30–35
Obese 2: 35–40
Obese 3: ≥40

Fig. 2
Body mass index (BMC) of pastoralist and settled women during the dry and rainy seasons of the Lake Chad region
Source: Béchir *et al.* (29)

Whether for sale or consumption, the milk produced can vary in quality depending on the fodder of the animals. As the quality of the fodder is in turn affected by the environment, the consumption of milk is a good example of how animals are an indirect link between humans and their environment. Milk from cows grazing on green pastures had higher βbeta-carotene levels while the pastoralist consumers of such milk had fewer deficiencies in vitamin A (36). Retinol levels showed strong seasonal variation (37). Still, milk as the primary source of vitamin A for pastoralists is insufficient. Serum retinol deficiencies were high among pastoralists, up to 32% in the cold season (37). Another study found a high prevalence of moderate serum retinol deficiency in settled children younger than five years at the end of the rainy season, and during the same period it was as low as 1% among nomadic children (38). Other sources of vitamin A are not consumed in sufficient quantities to make up for these deficiencies. For example, low fruit and vegetable consumption was seen in several studies in West and East Africa (39), with similarly low consumption levels reported for poorer pastoral households in Central Asia and Mongolia (40).

In addition to producing more milk for sale rather than for consumption, many pastoralist families have diversified their activities through crop-farming. Consequently, diets based on meat and milk, which are rich in animal protein (although calorically deficient), are changing to protein-poorer diets based on cereals. Another change in the diet of pastoralists is the increased consumption of sugar and oils as new important sources of energy (13); unfortunately, as in other settings, this may cause a rise in cases of diabetes and hypertension.

Drought situations in the Sahel, or winter disasters known as *zud* in Mongolia (when snow and ice prevent animals from grazing), can lead to malnutrition in people and livestock. Dried meat from animals that are taken off the land provides nutritional energy and protein, while money earned by selling the animals can be used to buy supplemental fodder. In addition, timely destocking can prolong the management of vegetation yield until the end of the drought. Pastoralist communities are commonly willing to sell livestock but often lack access to markets in crisis situations. Interventions that facilitate livestock purchase by providing transport subsidies to traders are successful and cost effective. In the post-drought period, governments focus on the timely replenishment of the livestock economy and continued generation of alternative livelihoods and sources of income (41, 42, 43).

Human and animal parasitic diseases

In dry areas, natural and man-made water sources are highly frequented by humans, livestock and wildlife, and the density of livestock can be very high, as can the risk of being infected by water-borne parasites. Well water is usually safer than surface water, but pastoralists often have to use the latter, either because they have lost traditional access rights to wells or because only surface water is available. However, during the rainy season, both waterholes and wells rapidly become contagious places and a source of disease (44, 45), e.g. cholera and typhus (13, 46).

Schistosomosis

In Africa, one of the parasitic diseases that affects pastoralists and their animals is schistosomosis (also known as bilharzia or 'snail fever'). The main causative agents are *Schistosoma haematobium* and *S. mansoni* in humans and *S. bovis* in cattle. The highest prevalences in humans and in cattle were found among ethnic groups which pasture their livestock on the shores or islands of Lake Chad, where the intermediate hosts – several species of freshwater snails – are present. Ethnic groups which were skilled in building wells had markedly lower prevalences (47). Another study showed that the main source of the liver fluke that causes fasciolosis in ruminants was the lake rather than rain-fed surface water areas (48). The increased concentration of people due to population growth, and utilisation of resources by pastoralists, fishermen, agriculturists and those engaged in tourism, causes the degradation of wetlands. This potentially favours an environment for disease transmission between people, livestock and wildlife populations, as groups are forced into small isolated areas with limited available water (49).

Echinococcosis

In Central Asia, Mongolia and the Tibetan Plateau, grasslands are populated with rodents, which are the intermediate host for *Echinococcus multilocularis*, the parasite that causes the severe human and animal disease alveolar echinococcosis (50). Human cystic echinococcosis is caused by infection with the hydatid cyst or larval stage of the dog tapeworm *E. granulosus*. The parasite is transmitted between dogs and domestic ungulates, especially sheep. One-third of all households in Mongolia keep sheep in extensive pastoral systems. *Echinococcus multilocularis* is found in wildlife (51) and *E. granulosis* in livestock (in one study, goats showed 9.2% seropositivity) (52). Both echinococcosis species are found in people (51, 52). After a substantial decrease in the number of cases of human echinococcosis in Mongolia, the disease spread again after the breakdown of health and veterinary services during the transition from a socialist planned economy to a market economy and privatisation (53). Since then, hydatid cysts have been found in Tibetan nomadic populations. Similarly, in the Turkana region of north-west Kenya, abdominal ultrasound screening surveys have detected hydatid cysts in 5–19% of pastoralists, with 10–20% prevalence in the 20–50 age group (45).

Other parasitic diseases

With the advent of export slaughterhouses in pastoral areas and increased testing during meat inspection, an increasing number of cases of other parasitic diseases have been detected, e.g. bovine cysticercosis. Although considered less important for the health of livestock and people, these diseases can still have a serious financial impact. When cattle are infected with bovine cysticercosis, the carcasses are condemned, causing large economic losses to pastoralists and entire regions (54).

Bacterial zoonoses

Brucellosis and Q fever

If brucellosis were not present, milk and meat production in traditional cattle production systems in sub-Saharan Africa would increase by an estimated 5–11% and 12–35%, respectively (55). The main human infection routes of several bacterial zoonoses, e.g. brucellosis, Q fever and bovine tuberculosis, vary between communities: direct contact, particularly contact with abortion by-products, dominates in livestock-keeping communities, whereas contaminated raw milk products put consumers at risk of infection. Establishing correlations between human disease and livestock zoonotic infections at household level is rarely straightforward in mobile livestock-keeping communities, because, unlike settled communities, the composition of people and livestock commonly changes from season to season. Consequently, while one cross-sectional study may reveal no zoonotic correlations between people and livestock within a pastoral camp, another study a few months later, when other relatives and their herds have joined the camp, may find that there is a correlation. For example, in Kyrgyzstan, human brucellosis seropositivity was related to sheep seropositivity at district level, but not at the household level (56). Human seroprevalences were very high (up to 30%) among pastoralists in Kyrgyzstan and Mongolia (56, 57). In Mongolia, non-pastoralist communities also showed a high prevalence (58). In Togo, human seropositivity was unexpectedly low (below 1%), although cattle seropositivity was high (9% in village cattle and 7% in transhumant cattle) (59). The Togolese *Brucella abortus* strains from cattle had a large deletion in a gene that might influence virulence and/or host predilection (60). In Chad, human Q fever seropositivity was associated with keeping camels but not cattle (61). High Q-fever seropositivities in camels have been confirmed in other studies, for example in pastoral settings in Ethiopia (62).

Tuberculosis

Among the pastoralist communities of south-eastern Mauritania, the disease with the biomedical name 'tuberculosis' (TB) is known by different names depending on the perceived causes of the disease (hereditary, warm or bitter foods [*Iguindi*], lack of sufficient milk [*Timchi*]). In addition, the different stages of the disease also have separate names. In a study carried out in Mauritania and Chad, the disease was treated by different people depending on what it was called: three types of tuberculosis-like illnesses were treated by a healer, two by a faith healer and one by a medical doctor (63). In a recent population-based study in south-eastern Ethiopia, the prevalence of presumptive TB cases was not higher among pastoralists than it was among villagers, but was high among both, indicating that the whole rural population is deprived of quality diagnostics and treatment (64). Pastoralists in south-eastern Mauritania were not aware that tuberculosis could be transmitted from cattle to humans, whereas two-thirds of mycobacterial adenitis patients in Tanzania knew about the possibility of zoonotic transmission (65). In a review of global TB occurrence over the last two decades, the proportion of human tuberculosis cases due to *Mycobacterium bovis* was generally lower (<10%) than expected. The review found median proportions of 2.8% among human TB patients in Africa and 1.4% in the rest of the world (66). A combined field, slaughterhouse and hospital study in Ethiopia showed that *M. bovis* in human TB infection was low – of 1,000 *M. tuberculosis* complex isolates from clinical suspects of pulmonary and extra-pulmonary TB, only four isolates were *M. bovis* (67). Interestingly, *M. tuberculosis* was isolated from several cattle and from one camel, suggesting more frequent transmission of TB strains between livestock and people (68). *Mycobacterium bovis* causes production losses in cattle, especially on African peri-urban dairy farms with 'exotic breeds'. However, it does not seem to cause major economic losses in extensive systems (69).

Human and animal health survey designs

The previous sections presented findings from joint human and animal health surveys and intervention assessments. The authors outline below some considerations for the design of such studies. It is rarely possible to select a simple random sample among pastoralists because this requires an accurate list of community members. Multi-stage cluster sampling is commonly used when complete registries, of humans or animals, do not exist. Herds and pastoralist camps where members move together, represent natural clusters. In contrast to settled communities, where a list of villages is either available or can be compiled, a random selection of mobile pastoralist camps from a list is usually not possible. Sampling at water bodies or wells has been suggested, but ethnic and seasonal heterogeneity in migration routes might introduce bias (70). Alternatively, random transects have been employed for random selection, although smaller camps might risk being overlooked with this approach. Generating random geo-coordinates and sampling all camps within a predefined circumference has proved to be useful. However, bias can also be introduced because camps in sparsely populated areas have a higher probability of selection than those in densely populated areas. The use of aerial photography and remote sensing has been considered to estimate population sizes, but might be less useful in the context of sampling (71).

Once camps are selected, either the whole group of people and/or animals or a random subset are enrolled. If only a single or fixed number of household members or animals within herds are selected, a 'household size bias' can be introduced. Therefore, the samples must be weighted according to the number of individuals within each camp for unbiased estimates. If animals are randomly chosen from each herd, the animal prevalence estimate will be an unbiased estimate, but this is not true for the herd prevalence. There are formulas available to calculate the corresponding herd-level prevalence, which are particularly useful when not all animals of a herd are sampled or when estimates need to be corrected for imperfect test sensitivity and specificity (72). A combined analysis of human and animal data can be challenging. However, for many research questions – for example, evaluation of the effectiveness of an intervention – a joint statistical analysis would be less important than exchange across sectors of presentations and shared interpretation of the results (27).

Health impact assessments of industrial development projects (73) should be extended to simultaneously assess livestock health. The impact of the construction of dams or mines should also be evaluated, as these can adversely affect the health of livestock, have direct implications for livelihoods and the income of communities, and indirectly affect human health.

Estimation of the coverage achieved for an intervention, for instance, vaccination, is challenging in the absence of total population size estimates for mobile pastoralist groups, who are chronically under-represented in censuses, particularly in sub-Saharan Africa. The authors have estimated that 70% of the total pastoralist population in a Chadian region was no longer present in the same area in the following year (74). There are pressing needs for baseline demographic and health-related data to plan, implement and evaluate health interventions. A biometric identification system based on the registration and identification of digital fingerprints was acceptable to pastoralist communities in Chad and allowed unique identification of individuals who did not hold governmental identification cards (75). It also reduced the minimum number of re-encounters needed to estimate the total population size. However, re-encounters during random transects were still too few (5%) to derive estimates with a meaningful precision or to establish a retrospective cohort on reported data (19). More recently, a randomised cohort was equipped with mobile phones, and this pilot study encouraged the further use of mobile phones to plan larger trials (7, 76). The pilot study led to estimates of densities for pastoralist and sedentary people and for livestock over both seasons and years. Human and livestock densities peaked at the end of the dry season. While the densities of pastoralists remained lower than those of villagers, the pastoralist livestock density was three times higher than that of the villager livestock. These very high livestock densities raised concern about the carrying capacity of pastures and ecosystem health (77).

Conclusions

Joint human and animal field health surveys are central for understanding disease dynamics and the underlying context and for the planning of evidence-based testing of control measures. Data collected from a joint survey can capture the complexities of disease dynamics in a way that aggregate data cannot. Also, in a joint survey, cost estimates of disease and interventions can be collected – and costs are important arguments for interventions supported by governments or non-governmental organisations. Including pastoralists in surveys is as feasible as including other rural communities. The additional inclusion of a non-pastoralist comparison community in the same region sheds light on the specific health needs of pastoralism – and often more commonalities than differences are found. In future, further alternative surveillance systems will continue to be evaluated; among these are syndromic surveillance, participatory epidemiology (78) and risk-based joint surveillance systems (7). Near-real-time reporting systems should be established, together with the ability to respond to reported events. There is a need for consistent, reliable data flow over a longer term. In developing health interventions and programmes for rural communities, including pastoralists, successful implementation of control measures is further strengthened by data exchange and cooperation between neighbouring countries within regions.

The health of pastoralists is shaped by access to health and veterinary services and by the ecosystem they live in, which is defined by the condition of the grasslands, the quality of the available water sources and the seasonal and inter-annual variations of weather and climate. Within the context of delivering health services to remote rural populations, the performance of services and the governmental commitment to providing quality services are still weaker for mobile pastoralists than other communities. This should not be the case, particularly as maintaining mobile livestock production is a prerequisite for maintaining healthy animals, healthy people and a healthy ecosystem. Identification of specific factors that influence human and animal health in a pastoralist setting and within their geographical and cultural context, and relating these to those of settled communities of the same area, shows what needs to be particularly addressed when developing adapted intervention strategies for pastoralists and in remote rural zones.

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La conduite d'enquêtes de santé publique et animale auprès des pasteurs

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Résumé

Il est possible de réaliser auprès des populations de pasteurs nomades des enquêtes sérieuses sur la santé des personnes et des troupeaux assorties d'études de suivi longitudinales, et de fournir ainsi aux organisations pertinentes des informations fondamentales pour la conception d'interventions adaptées à la situation réelle des pasteurs et répondant à leurs besoins. Or, les populations pastorales sont fréquemment exclues des études, des systèmes de surveillance et des programmes sanitaires. L'incidence de maladies évitables et traitables, par exemple le tétanos néonatal, la rougeole et la tuberculose dénote un accès limité à l'information et aux prestations de santé. Avec les ressources financières et humaines dont ils disposent, les services de santé ne parviennent pas à assurer une couverture efficace de ces populations. L'une des conséquences de cet état de fait est le taux de mortalité maternelle intolérablement élevé enregistré dans les communautés pastorales. Certains déterminants environnementaux comme la qualité de l'eau et les écosystèmes des prairies affectent également l'état de santé des pasteurs. Au Sahel, les enfants des communautés pastorales ont un meilleur statut nutritionnel saisonnier que les enfants sédentaires ; en revanche, chez les femmes de ces communautés la malnutrition aiguë est plus fréquente. En outre, les femmes sont plus en risque que les hommes d'être exclues des services de santé, pour différentes raisons déterminées par le contexte. Des évaluations factuelles des mesures de prophylaxie peuvent être réalisées au moyen d'enquêtes agrégatives comprenant l'évaluation simultanée de l'état sanitaire des personnes et des troupeaux, ce qui permet également de réunir des informations sur les coûts des maladies et des interventions sanitaires. Ces informations sont importantes pour étayer l'argumentaire des organisations tant gouvernementales que non gouvernementales en faveur d'un renforcement des interventions. Il est essentiel de faire appel aux nouveaux systèmes de surveillance intégrés « Une seule santé », en utilisant les technologies mobiles, en prenant en compte les concepts locaux ainsi que l'expérience et les priorités des communautés pastorales et en les complétant par des informations solides recueillies sur le terrain, afin de concevoir et d'assurer des prestations de santé humaine et animale adaptées et inclusives, destinées aux communautés pastorales nomades et leur permettant de conserver leur mode de vie nomade.

Mots-clés

Bétail – Conception d'enquêtes – Évaluation combinée – Humain – Pastoralisme – Santé.

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Estudios sanitarios y zoosanitarios en las sociedades pastorales

E. Schelling, H. Greter, H. Kessely, M.F. Abakar, B.N. Ngandolo, L. Crump, B. Bold, J. Kasymbekov, Z. Baljinnyam, G. Fokou, J. Zinsstag, B. Bonfoh, J. Hattendorf & M. Béchir

Resumen

La realización de estudios válidos de salud humana y animal, con seguimiento longitudinal de cohortes, no solo es un procedimiento factible entre los pastores nómadas, sino que además proporciona información básica a los organismos encargados de realizar intervenciones que se ajusten a la realidad sobre el terreno y respondan eficazmente a las necesidades de las sociedades pastorales. Estas, sin embargo, quedan con frecuencia excluidas de estudios, sistemas de vigilancia y programas sanitarios. La aparición de enfermedades que se pueden prevenir y tratar, como el tétanos perinatal, el sarampión o la tuberculosis, es indicativa de un acceso deficiente a los proveedores de asistencia sanitaria y a la información sobre cuestiones de salud. Con los recursos humanos y económicos de que disponen, a los servicios de salud les resulta difícil instaurar mecanismos para llegar eficazmente a esas poblaciones, lo que, entre otras consecuencias, se traduce en tasas de mortalidad materna inaceptablemente altas en las sociedades pastorales. En la morbilidad de esas poblaciones también influyen determinantes ambientales como la calidad del agua o los ecosistemas de pradera. En el Sahel, el estado de nutrición de los niños de las comunidades de pastores es mejor, según las estaciones, que el de los niños sedentarizados. Las mujeres de las sociedades pastorales, sin embargo, tienden a presentar índices más elevados de malnutrición aguda, y por diferentes razones ligadas al contexto, están más expuestas que los hombres a verse privadas de servicios de salud. Las medidas de control basadas en datos empíricos pueden ser evaluadas mediante estudios por conglomerados con valoración simultánea del estado de salud de las personas y el ganado, en los que también se obtienen datos sobre el costo de las enfermedades y las intervenciones sanitarias, datos que ofrecen a los organismos oficiales o no gubernamentales poderosos argumentos a la hora de definir intervenciones. Para concebir y dispensar servicios adaptados de salud humana y animal, que sin dejar de lado a las comunidades de pastores nómadas a la vez les permitan mantener su modo de vida itinerante, es esencial poner en solfa nuevos sistemas integrados de vigilancia, que se ajusten a los principios de «Una sola salud», aprovechen las tecnologías móviles y tengan en cuenta los conceptos y experiencias locales y las prioridades de las comunidades de pastores, combinándolos con la obtención de datos sólidos sobre el terreno.

Palabras clave
Concepción de estudios – Evaluación conjunta – Ganado – Pastoreo – Salud – Ser humano.

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