

The possible contribution of qualitative research approaches to epidemiological studies

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Summary

Two qualitative research studies were carried through in order to describe and analyse farmers' perspectives on their own choices with regard to the decision to have cows treated for mastitis. Through qualitative research interviews of 16 Danish dairy farmers (15 conventional and 1 organic), four levels of the decision making were identified: symptom level, cow level, herd level and level of alternatives. All four levels could be recognised in all herds, but with different weight on and importance of each factor within the level, and of each level. This provides a model of understanding farmers' choices in relation to their context and in general. Twenty farmers, 18-26 months after conversion, were interviewed focusing on changes in strategies, choices and daily routines linked to mastitis handling, including treatments. Most change related to conversion or organic farming was perceived as taking place in the crop side of the farm. Veterinarians were not involved in health planning or promotion in the herds, but only in disease treatment. Farmers expressed perceptions of veterinarians as not interested in the development of organic animal husbandry.

Introduction

Farmers' decisions influence all actions and management strategies in a herd. A substantial need exist for knowing farmers' own version of why and how decisions are made. Qualitative research interviews offer a possibility to create insight into human decision making, which cannot be appropriately described by quantitative research methods. It is the purpose of this paper to discuss possibilities for using such knowledge directly in relation to epidemiological observational and intervention studies. This paper is based on concrete research results from Danish research studies, where qualitative and quantitative research approaches were combined.

Material and Methods

In the first study, 16 farmers (15 conventional and 1 organic) were interviewed about their treatment routines, based on concrete treatments in their herds. In the second study, 20 organic farmers were interviewed 18-26 months after their conversion to organic farming. In both studies, thematic questions of relevance for the study formed basis for the interview, and all interviews were tape recorded, transcribed and analysed used a grounded theory approach.

Results

Two Danish studies about mastitis treatment form basis for this paper (Vaarst et al., 2002; Vaarst et al., 2003). Both studies had parallel epidemiological and qualitative part projects, which were combined. The results of these studies are currently implemented into practice in decision support frameworks for mastitis treatment

strategies. In the first study (Vaarst et al., 2002), a systematic way of describing the decision taking in mastitis cases was described. Decision making was described in four levels: mastitis symptoms, single cow characteristics, the situation of the herd and the farmer's perception of existing alternatives. Based on the results of the study, these levels have been recognised and reconstructed in further studies involving interviews of farmers about treatment strategies, clearly showing that each level and different factors within each level is given different priorities between farms. Farmers were shown not to be - as sometimes claimed - irrational in their choice of treatment, but they do not necessarily have the same kind of rationality as their practising veterinarian - nor as political decision makers. The rationality of the farmer was concluded to be important and it is necessary to understand his or her decision making with regard to disease handling within the framework of the whole farm, in which the farmer is having his daily life and taking decisions and action. By identifying these four levels, a model and tool for understanding and communicating about decision making, involving farmers and their veterinarians and cattle oriented advisors is given.

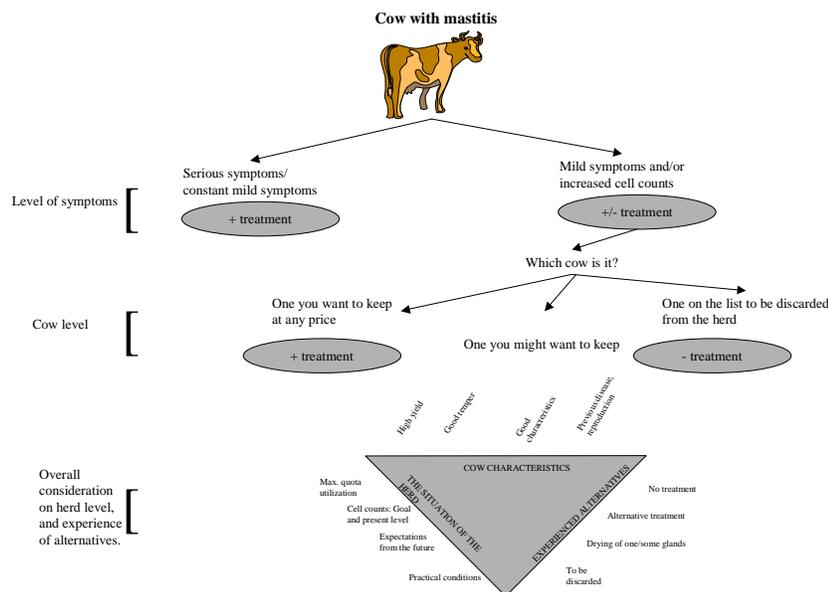


Figure 1. The four levels of choice related to mastitis treatment decision, as developed in a study on qualitative interviews of farmers. From Vaarst et al., 2002 (page 997).

In the second study (Vaarst et al., 2003), the first two years of conversion to organic farming was in focus. Antimicrobial treatment was the dominant treatment method related to acute mastitis cases, and regarded as the treatment giving the best prognosis for cure. Treatment of acute mastitis cases involving an ill cow was based on animal welfare considerations. Most other treatment choices were based on farmer's perception and expectations with regard to maintaining the present structure of the herd (e.g. size, distribution of age groups, calving patterns and milk yield) as a part of the entire farm. Minor changes took place with regard to treatment choices during the first two years of conversion. In the cases where treatment patterns were changed, it could primarily be explained by changes in priorities linked to the herd strategy, or the general development of price levels in Denmark these years, and only to a minor

degree to the conversion to organic farming. Being organic was mostly experienced as a change in farm structure and in relation to crop production and changes in housing system, herd size, or other major structural changes. Veterinary involvement in mastitis treatment choices were limited to acute cases, not including systematic discussions (e.g. health planning) about choices on herd level. Veterinary involvement was not perceived as something, which promoted the development of the 'organic characteristics' or goals on herd or management level.

Discussion

The concept of qualitative research is by nature very different from the biological and biomedical research tradition. The aim of the qualitative interview investigation is to describe, interpret and understand the spectrum of experience and choices related to a given phenomenon. Knowledge obtained through qualitative research interviews can be used in combination with epidemiological analyses for more purposes: 1) It creates background for dialogue with each farmer about their choices in relation to the context of their specific herd, including the results of health and production in the herd. 2) It provides general insight into subject areas where farmers' decisions are crucial, e.g. choice of disease treatment thresholds. 3) It offers important additional knowledge which can be directly used in understanding of epidemiological analyses and further development of decision support systems, where farmers' and veterinarians' need for knowledge and support decides the success of a given decision support systems development based on epidemiological methods. Integrating the farmer's perception, goals and possibilities directly in the discussion of the decisions on farm level must be expected to improve the use of epidemiological data and analysis, and the common understanding of farmers and their veterinarians.

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