

## **MATERIALS AND METHODS**

### **Geographical and ethnographic background**

The study area, the Yagha, is located in the north-eastern corner of Burkina Faso and is culturally heterogeneous, with a population mainly composed of Fulani (Fulbe and Rimaibe, former Fulbe vassals) and a few thousand Gurmance. The Rimaibe, many of them of Gurmance origin, are now the most important single ethnic group, accounting perhaps for 40% of the population. Minorities include Mossi, Sonrhai, Hausa, and Bella.

Fulbe/Rimaibe and Gurmance differ on many determinants of social organization, including modes of production and religion. The Fulbe are traditionally pastoralists, with their life revolving around their herds. A strong behavioural code expressed in the concept of Pulaako (Fulani-ness), prescribes self-discipline and reservedness for both males and females (11), a feature which, among other things, strongly influences data-collection choices. In contrast, the Gurmance are traditionally agriculturalists, and of a typically-gerontocratic society in the sense of Meillassoux (12), with the elders and the patrilineal family traditionally exercising strong control over younger men's marriage and women's fertility and sexuality. The Rimaibe are agriculturalists as well, their ancestors having cultivated fields for Fulbe herders for several generations.

The Fulbe, Rimaibe, and assimilated minority groups speak Fulfulde, while in a few non-assimilated villages, Gurmanema is spoken. The Fulbe and Rimaibe are Muslims, whereas the Gurmance are mostly adhering to their own traditional belief. The Yagha has undergone several waves of Islamic reform in recent decades, which led to the expansion of Islam to all but a few Gurmance villages, the spread of more radical brotherhoods, such as Hamallism since the 1950s and the Wahabiya since the 1970s, and a gradual deepening of beliefs and stricter adherence to Islamic principles among the majority Muslims. Imams and Marabus are now being consulted for all important life events, such as marriages, naming ceremonies and funerals, and act as arbiters of land, divorce, and inheritance disputes (10).

The Yagha has had very little intervention from development programmes. Enrollment in modern schools is very low, and the literacy rate is 5% in Burkina Faso. An unknown proportion of both boys and girls attend Koranic schools. Health services have remained weak, with only three health centres serving the entire area at the time of the survey, including the provision of a limited range of family-planning commodities. A mobile vaccination team regularly visits most villages and has started promoting the use of modern child-spacing methods during consultations.

### **Data sources**

Data were collected by asking several open-ended and closed questions on child-spacing, postpartum sexual abstinence, amenorrhoea, and breast-feeding in a small-scale DHS type reproductive health sample survey. In addition, a series of in-depth key-informant interviews were conducted.

### **The survey**

Ninety-four villages had been officially recognized in the Yagha at the time of the survey, but about half of these villages had not yet been enumerated. During previous surveys, community and religious leaders had shown great reluctance to allow villagers to participate. Despite these constraints, the United Nations Sahelian Office (UNSO), in an economic household survey the year before our reproductive health survey, had attempted to select a representative sample of men, by dividing the area into six socioeconomically, historically and geographically distinct zones, and, according largely to geographical criteria (e.g. distance to rivers or lakes), selecting three or four villages per zone (13). After several sensitization meetings with village elders, the number of sub-villages, their ethnic composition, and relative size had been estimated, and approximately, 10 heads of household per village selected for the survey.

To overcome opposition by village leaders, we essentially used the same sampling frame, interviewing the wives of those heads of households interviewed by UNFPA the previous year, and systematically adding younger women. As the men selected by UNFPA had all been between 30 and 60 years old, most of their wives were expected to be at least 25 years old. Therefore, in each village, the wives of (two or three) heads of household married to at least one younger woman were added to the sample, and their wives were interviewed. The intended sample size was 350 women of reproductive age.

Five interviewers were recruited from among the few women in the wider region, who were literate in both French and one of the two main local languages: Fulfulde and Gurancema. They were taught the main topics of the survey, including child-spacing, abstinence, amenorrhoea, and breast-feeding, and were trained in interview techniques in a two-week course, and then conducted the survey under the supervision of an experienced field worker recruited from outside the study area. The Gurancema-speaking interviewer was a nurse from the hospital in the regional capital in Dori. The questionnaire was pre-tested among 25 women in five ethnically-diverse villages.

### **Variables**

Questions referred to demographic variables, such as age, ethnic affiliation, religion, and education; knowledge and ever-use of modern and traditional child-spacing methods; the women's postpartum practices during the last five years preceding the survey, including breast-feeding, amenorrhoea, and durations of abstinence; and the place where the women had delivered their children. Additional questions on the current age of children and the number of menstruations between the end of amenorrhoea and the succeeding pregnancy served as consistency checks and to minimize recall errors.

The range of modern contraceptives available in the study area was known to be too limited to prompt respondents on all methods individually. Following introductory questions on whether they had ever considered the spacing or stopping the births of their children, and if so, if they had ever taken contraceptive action, the women were only prompted for their knowledge and ever-use of pill, condom, and traditional methods. A question referring to coitus interruptus had proved too sensitive in the pre-test and was removed from the questionnaire.

Attitudes towards abstinence, durations of amenorrhoea, and child-spacing methods were elicited by asking open-ended questions on reasons for stopping lactation, adhering to abstinence norms and using or not using modern and traditional contraception.

The interviews were held in the women's huts and, depending on the interviewees' responses to open-ended questions and consistency checks, took between two and three hours to complete. The entire survey took three months to complete.

### **Key-informant interviews**

During the questionnaire pre-test survey, all women had been asked who in their village or area they thought would be best to provide further and in-depth information on attitudes, norms, and practices towards child-spacing in the study area. Key eligibility criteria, therefore, included in-depth knowledge of, and/or significant influence on, social norms regarding attitudes towards child-spacing and behaviours in the area. From the persons nominated, four rural birth attendants, three nurses of the health centres, and three male village leaders, including two Imams, were selected, in seven villages. Ten in-depth interviews were conducted by the author, either in French or with the assistance of one of the interviewers as translators. A semi-structured questionnaire was used, comprising questions regarding all the main topics included in the sample survey as well as questions on possible changes in postpartum behaviours over time and the reasons for such changes.

## Data analysis

Closed questions were analyzed using EPI Info software. The responses were discussed with the interviewers, checked for consistency, and data entered on the day of the interview. Several women were revisited the following day, when responses appeared inconsistent or otherwise not plausible.

Knowledge of, attitudes towards, and ever-use of, child-spacing were analyzed by individual woman, while abstinence, breast-feeding, amenorrhoea, and durations of breast-feeding were analyzed by birth event. The proportions of women reporting knowledge and ever-use of child-spacing methods as well as median postpartum events were calculated and tabulated by ethnic affiliation, religion, and education.

Median durations of postpartum behaviours were determined for the full sample of birth events during the five years preceding the survey, by survival analysis as first described by Potter *et al.*, with the relevant event of the occurrence of weaning, menses, or resumption of sexual relations as recalled by the respondents, and the dependent variable—the time from delivery to the occurrence (13).

Non-parametric c-equivalent tests, and where sample sizes were very small, Fisher's exact tests, were employed to demonstrate significant differences, with 0.05 as the critical level.

The interviewers' notes on open-ended questions and those on key-informant interviews were transcribed as fully as possible. The data were then analyzed with the assistance of a word processor by grouping responses to each question and inspecting them for common themes, separately by ethnic group, religion, and education. In some cases, responses to open-ended questions were converted into categorical data and entered into the EPI Info database. The four main reasons of weaning, for instance, were, thus, associated with median durations of breast-feeding, ethnic affiliation, and religion.