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Memorandum

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From: John E. Anderson, Ph.D., Demographer Program Evaluation Branch (PEB), Family Planning Evaluation Division (FPED), Center for Health Promotion and Education (CHPE)

Subject: Foreign Trip Report (AII/RSSA): Brussels, Belgium, March 11-12, 1982

To: William H. Foege, M.D.
Director, Centers for Disease Control
Through: Horace G. Ogden
Director, CHPE

SUMMARY

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I was invited to visit the Vrije Universiteit, Brussels, to discuss various aspects of our survey work, with special reference to the measurement of postpartum variables such as breastfeeding and postpartum amenorrhea and their relationship to fertility and contraceptive use, with Professors Ron Lesthaeghe and Hilary Page. They were able to make a number of valuable comments and suggestions on the analysis of our survey data in three main areas: (1) Measuring the duration of breastfeeding and postpartum amenorrhea, (2) additional questions to measure the intensity of breastfeeding, and (3) multivariate analysis.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

From London, England to Brussels, Belgium, March 11 and 12, 1982, at the invitation of Professors Ron Lesthaeghe and Hilary Page, Vrije Universteit, to discuss FPED/CDC's survey work with special reference to the measurement of postpartum variables and their relationship to fertility and contraceptive use.

II. PRINCIPAL CONTACTS

Dr. Ron Lesthaeghe, Vrije Universiteit, Brussels (VUB)
Dr. Hilary Page VUB
Dr. Camille Vanderhoeft, VUB
Dr. Stanley Becker, VUB

III. MEETINGS AT THE VRIJE UNIVERSITEIT BRUSSEL

A. Background

Drs. Ron Lesthaeghe and Hilary Page are internationally recognized authorities in the area of demographic measurement and analysis of postpartum variables--breastfeeding, postpartum amenorrhea and postpartum abstinence. Measurement of these variables is particularly important in Maternal-Child Health/Family Planning (MCH/FP) surveys because of the interrelationships of breastfeeding, postpartum amenorrhea, fertility, contraceptive use, and child health. Recent MCH/FP survey data from Brazil being analyzed by FPED/CDC demographers are important because this population was not covered by the World Fertility Survey. The surveys from Northeastern Brazil have revealed a distinct pattern of short breastfeeding duration coupled with relatively high infant mortality.

While at the Vrije Universiteit, discussions were held in three main areas: 1) measuring the duration of breastfeeding and postpartum amenorrhea, 2) measuring the intensity of breastfeeding and, 3) multivariate analysis.

B. Measuring the Duration of Breastfeeding and Postpartum Amenorrhea

With MCH/FP surveys (contraceptive prevalence surveys) we have been getting the date of the last live birth, and looking at current breastfeeding or amenorrhea status by duration since last live birth, or the length of the open birth interval. Estimates based only on the open interval are now known to be biased. It is better to base estimates on both open and closed intervals in a specific period of time. This can be done by looking at all births occurring in the 3, 4 or 5 years prior to interview. If one is willing to assume that breastfeeding of second to last or earlier births is negligible (at time of interview), which is probably reasonable, it is not necessary to add any questions on breastfeeding of births prior to the most recent. It is only necessary to obtain the dates of the earlier births.

When durations are short, as in Brazil, obtaining the date of the second to last (or penultimate) birth would go a long way toward better estimates. This would probably improve our estimates more than any other single question added to the questionnaire.

In surveys where only the date of last birth is obtained, use of adjustment methods together with the Mosley method of estimating the mean (1) is probably satisfactory, especially where durations are short.

Because durations are so short in Brazil the S-shaped model schedule developed by Lesthaeghe and Page (2) is probably not appropriate to use. An exponential function fit by regression would probably be a better approach in this case.

C. Additional Questions to Measure the Intensity of Breastfeeding

Recent endocrinological work has indicated the importance of the frequency and intensity of breastfeeding to its effect on ovulation (3). A number of questions could be added in order to measure intensity and frequency, including:

1. How many times altogether did you breastfeed the baby yesterday, not just during the day, but also during the night?

2. Do you sleep with the baby?

In Brazil a high proportion of women indicate supplemental foods were given even in the first months of life. It may be worthwhile to include a question such as the following to see if full breastfeeding was ever established:

3. In addition to breast milk, did the baby receive any other nourishment (besides water) in the first 2 weeks?

D. Multivariate Analysis

A number of multivariate analysis approaches have been attempted using current status data with WFS data. These analyses have used current status of all births in the last n years. For present CPS data sets, we can only use current status for last births, but it is worth noting that in an analysis of data from Pakistan very similar results were found with last birth data compared with data from all births in the last 5 years (4).

Two methods, a regression model proposed by David Smith (5) and a polynomial regression used by Lesthaeghe and Page (6), have the advantage of being easily understandable packages such as SPSS and SAS. Two other methods, proportional hazards (7) and the accelerated failure rate model (8), are preferred by statisticians. These models are more difficult to apply and require more sophisticated computer packages such as GLIM. In practice, results of the various methods tend to be the same when they are compared (9).

In analyzing the Bahia data, I have used a modified Smith approach, and will also use the polynomial regression and proportional hazards methods in order to compare results.

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REFERENCES

1. Mosley WH, LH Werner and S Becker, 1980. The dynamics of birth spacing and marital fertility in Kenya. Unpublished.

2. Lesthaeghe R and H Page. The postpartum non-susceptible period: development and application of model schedules. Population Studies, March 1980, 34(1);143-169.

3. McNeilly AS, PW Howie and MJ Houston. Relationship of feeding patterns, prolactin and resumption of ovulation postpartum. In GI Zatuchni, MH Labbok and JJ Sciarra, Research Frontiers in Fertility Regulations, Hagerstown: Harper and Row Medical Division, 1980.

4. Page HJ, B Ferry, IH Shah, and R Lesthaeghe. The most recent births: some analytical possibilities and underlying problems. In W Brass ed., The Analysis of Fertility Histories. Forthcoming.

5. Smith DP. Regression analysis for current status life tables on duration of breastfeeding. World Fertility Survey, TECH 1690, July 1981.

6. Page HJ, R Lesthaeghe and IH Shah. Breastfeeding in Pakistan: an illustrative analysis. World Fertility Survey, Illustrative Analysis. Forthcoming.

7. MacDonald J. A new methodological approach for the analysis of WFS current status breastfeeding data. World Fertility Survey, TECH 1732, London, August 1981.

8. Vandernoeft C. Analysis of current status breastfeeding data with accelerated failure rate models. Vrije Universiteit, Brussels, 1982.

9. Smith, cited in Ref. 5.