

EXTRAPOLATION OF IUD RETENTION RATES: AN EVALUATION OF SOME MODELS

K. ARUNA RAO AND M. V. SHOLAPURKAR

Introduction

IN estimating the number of births averted, the contraceptive retention rates play a vital role. In doing so, the data requirement of retention rates will have to be for a longer period. Normally the data based on follow-up studies are of a short duration of one or two years, thus necessitating the use of the continuation curves for extrapolating the retention rates.

The most widely used curve for extrapolating the IUD retention rates is negative exponential of Mauldin *et al.*¹ Modified versions of the above curve and other alternative curves have also been proposed such as a negative exponential with an age parameter in its exponent by Kelly²; the modified exponential of Srikantan and Siddiqui;³ a mixture of two exponentials by Liu, Chow and Abbey;⁴ the type III exponential of Potter and Avery⁵ and the type I geometric and its modified version by Kulkarni and Potter.⁶

The above curves have been used in different situations and this needs to evaluate before making use of them for a particular country. Therefore, an attempt has been done in this paper to evaluate the various precited curves so as to find a suitable method of extrapolation for Indian conditions, i.e. to find out a method which would give better results for a short span of five to six years and for which estimates of the parameters could be obtained over desk calculators.

¹ Mauldin, W. P., Nortman, D. and Stephen, F. F., "Retention of IUD's; An International Comparision" Studies in Family Planning, No. 18, April 1967, pp. 1-12.

² Kelly, W. J., "Estimation of Contraceptive Continuation Functions" Demography, 8, August 1971, pp. 335-339.

³ Srikantan, K. S., and Siddiqui, M. K., 'IUD Retention Rates: Projection by Curve Fitting', unpublished draft, 1973.

⁴ Liu, P. T., Chow, L. P., and Abbey, H., "A Study on IUD Retention by Curve Fitting", Demography, 9, February 1972, pp. 1-12.

⁵ Potter, R. G., and Avery, R. C., "Use Effectiveness of Contraception", in Chandrasekaran, C., and Hermalin, A., (eds.), Measuring the effect of Family Planning Programmes on Fertility, IUSSP, Liege.

⁶ Kulkarni, P. M., and Potter, R. G., "Extrapolation of IUD Continuation Curves", Population Studies, 30, July 1976, pp. 353-368.