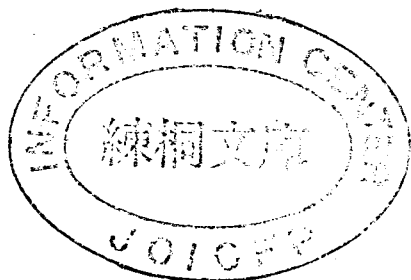


English Pamphlet Series No. 62
Institute of Population Problems
May 20, 1966



SOME DEMOGRAPHIC IMPLICATIONS OF
POST-PARTUM AMENORRHEA

In Commemoration of the Fiftieth Anniversary of the
American Family Planning Movement

by

Minoru TACHI and Eiko NAKANO

Institute of Population Problems
Ministry of Health and Welfare

Tokyo, Japan

Some Demographic Implications of Post-Partum Amenorrhoea

In Commemoration of the Fiftieth Anniversary of the
American Family Planning Movement

Minoru TACHI and Eiko NAKANO

1. Introduction

This year of 1966 falls on the fiftieth anniversary year of the first establishment of the American birth control clinic by Mrs. Margaret Sanger in 1916. In memory of this occasion, the American family planning movement, taking note of the growing importance of population problems in the world, is planning various memorial programmes.

In 1923, Mrs. Sanger founded the Birth Control Clinical Research Bureau in the City of New York. On her request to the Milbank Memorial Fund as the Director of the Bureau, started the study on the evaluation of the function of the clinic services by Dr. Regine K. Stix and Prof. Frank W. Notestein, a great contribution to world demography.^{1/} In this study, "pregnancy rate" and "ratio of effectiveness" were distinctively formulated and in that connection, "post-partum amenorrhoea" must be taken into consideration. In memory of the 50th anniversary of the American family planning, we have taken up

^{1/} R. K. Stix and F.W. Notestein, Controlled Fertility, an evaluation of clinic service, Baltimore, 1940, pp. xiii-xiv.

this problem for discussion.

In preparing this paper, the generous cooperation of many colleagues was gratefully received, but particular acknowledgements are due to Prof. Seiichi Matsumoto of the Faculty of Medicine of Gunma University, Dr. Minoru Muramatsu of the National Institute of Public Health, Dr. Yasushi Narabayashi, and Miss Seiko Takahashi of the Institute of Population Problems to whose help we are greatly indebted.

2. Purpose

The purpose of this paper is to suggest, in regard to the demographic implications of the post-partum amenorrhea, the necessity and the possibility of the approach to this problem in researches on fertility, particularly in action researches.^{2/}

^{2/} For the outline of this suggestion, see Minoru Tachi, "A comment on action research in family planning (presented in paper, at the forenoon meeting on 27 May 1965)", International Planned Parenthood Federation, Proceedings of the Regional Conference, Western Pacific Region, Seoul, Korea, May 1965, Tokyo, 1965, pp. 127-128.

3. Demographic Implications

It is needless to say that the measurement of effectiveness of fertility control on births is demographically important. One of the principal methods of measurement is the pregnancy rate and the ratio of contraceptive effectiveness introduced by Stix and Notestein.^{3/} This method is said to base on the idea of Raymond Pearl (1879-1940),^{4/} and defines the rate of pregnancy as the following:^{5/}

$$\text{Pregnancy Rate} = \frac{\text{no. of pregnancies}}{\text{no. of years of exposure to risk}} \cdot 100$$

The ratio of contraceptive effectiveness is the ratio of the pregnancy rates of the group with the use of contraceptives and that with no use of contraceptives, or the ratio of contraceptive pregnancy and noncontraceptive pregnancy within a group.^{6/}

^{3/} Minoru Tachi, Formal Demography, Tokyo, 1960, pp. 695-697.

^{4/} R. K. Stix and F. W. Notestein, op. cit., p. 168.

^{5/} ibid., pp. 168-173.

^{6/} ibid., pp. 174-182.

"The number of years of exposure to risk of pregnancy" in the formula of the rate of pregnancy is the number of years obtained by deducting the number of years pregnant, non-conceptive period of lactation or puerperium and years of separation from the years of marriage of women before menopause.

The first study and application of this method in Japan was in the research on the measurement of effectiveness of the practise of birth control undertaken in the Institute of Population Problems of the Ministry of Health and Welfare.^{7/} The main issue in this research was how to decide the non-conceptive period after delivery. Stix and Notestein assumed one month as the non-conceptive period of lactation and puerperium. In the above research, in the absense of the appropriate data in Japan, Stix-Notestein's one-month was tentatively followed.

^{7/} Nobuo Shinozaki and Kazumasa Kobayashi, Effectiveness of birth control -- Stix-Notestein study on groups of women in New York City, (mimeograph), Institute of Population Problems Research Series No. 62, 1 August 1950.

Hisao Aoki, "The effectiveness of birth control practise in Japan -- reexamination of post surveys in the Tokyo Metropolis by R. Pearl's method", Institute of Population Problems, Journal of Population Problems, Vol. 6 No. 2, September 1950.

Hisao Aoki, "The effectiveness of birth control practice in local districts -- model survey in 15 cities, towns and villages in Yamagata Prefecture", Institute of Population Problems, Journal of Population Problems, Vol. 7 No. 2, September 1951.

In later years, Dr. Yoshio Koya and Dr. Hideshi Kubo took note of the fact that in Japan, comparing with the United States, the period of lactation was longer in less popularization of artificial feeding, that the nutrition level was lower, and that the number of conception sharply increased after post-partum six months, and concluded that six months were more representative under Japan's circumstances as the post-partum non-conceptive period rather than one month.^{8/}

4. Recent Studies in Japan

In the recent family planning movement in Japan, interest has grown in changes in duration and regional distinction of post-partum amenorrhea, and various results of studies have come to be reported though still in rather elementary and insufficient stages, a few of which are introduced hereafter.

8/ Yoshio Koya ed., Public health study on population problems -- particularly in a model village, Japan Society for the Promotion of Science, Tokyo, 1952.

Hiroshi Ogino, "Rate of Pregnancy", The World of Obstetrics and Gynaecology, Vol. 6 No. 11, November 1954.

Yoshio Koya, Hideshi Kubo, Hiroshi Ogino and Shu Yuasa, "Seven years experiment of family planning in Japanese agricultural villages", Japanese Medical Journal, No. 1787, 26 July 1958.

Yoshio Koya (with the assistance of H. Kubo, S. Yuasa and H. Ogino), "Seven years of a family planning program in three typical Japanese villages", The Milbank Memorial Fund Quarterly, XXXIV, No. 4, October 1958.

(1) Survey by Satte Health Center in Saitama Prefecture.

On the occasion of the 4th Kanto-Koshinetsu Regional Eugenic Protection Symposium met on 4th and 5th of October 1956, Dr. Osamu Shibuya, Director of Satte Health Center, reported the result of a maternity survey conducted in September 1955 to 650 mothers within a year after delivery at the time of the simultaneous examination of children and infants of the year.^{9/} This Health Center is the one of rural type which has the jurisdiction over 5 local towns (Machi) of Miyashiro, Saginomiya, Sugito, Kurihashi and Satte and 52% of the mothers surveyed were wives of agricultural households. Among them, mothers who ever experienced contraception were only 18%.^{10/} According to Table 1, among 650 mothers, those who re-menstruated within one year after delivery was 39% and for the mothers of post-partum 10 months to one year, the ratio was 55%. When the distribution by number of months from the delivery to remenstruation for the mothers who remenstruated within one post-partum year was studied, the highest percentage of 41% fell in the period from 4 to 7 months,

^{9/} Osamu Shibuya et al., Maternity Survey -- post-partum contraception, (mimeograph), printed material for the 4th Kanto-Koshinetsu Regional Eugenic Protection Symposium, 1956.

^{10/} According to other surveys around in 1955, the ratio of wives who ever experienced contraception in towns and villages to the couples whose wives were under 50 years of age were assumed at around 47%.

Table 1.

post-partum no. of months	no. of mothers surveyed (1)	no. of the re-menstruated among (1)		monthly distribution of re-menstruation	
		number (2)	ratio (1)/(2)	number (4)	ratio (5)
total	650	251	39%	251	100%
2 - 4	69	4	6	91	36
4 - 7	188	51	27	103	41
7 -10	225	103	45	46	18
10-13	168	93	55	11	4

* calculated from data in footnote 9/.

the average being 5.4 months. Among this 650, 9 became pregnant within a year after delivery and among 251 mothers who resumed menstruation, 43 had begun contraception. This report emphasizes the need of thorough contraceptive guidance and early post-partum guidance.

(2) Survey by Tokyo Suginami West Health Center.

Another important report was presented at the aforementioned 4th Kanto Koshinetsu Regional Eugenic Protection Symposium, which was, on the results of a survey on 2,655 mothers of post-partum 3 months to 2 years at the time of the said simultaneous examination of children and infants conducted by Dr. Yasushi Narabayashi at the Suginami West Health Center.^{11/}

11/.Yasushi Narabayashi, Report to be presented at the 4th Kanto Koshinetsu Regional Eugenic Protection Symposium, (mimeograph), 1956.

Table 2.

post-partum no. of months	natural feeding			mixed feeding			artificial feeding		
	surveyed	remenstruated	ratio	surveyed	remens truated	ratio	surveyed	remens truated	ratio
total	1,440	1,090	76%	664	582	88%	551	536	97%
3 - 4	28	6	21	4	1	25	5	4	80
4 - 7	218	87	40	114	76	67	86	78	91
7 -10	224	132	59	125	103	82	120	116	97
10-13	228	159	70	121	107	88	74	74	100
13-19	394	360	91	163	158	97	142	140	99
19-25	348	346	99	137	137	100	124	124	100

* calculated from data in footnote 11/.

This Health Center covers a district which includes 2/3 of the Sugunami Ward population of Tokyo City and is a typical large-city type Center. Present practice ratio of contraception of the surveyed is high at 57%. As shown in Table 2, among the mothers surveyed, natural feeding occupies 54%, mixed feeding 25% and artificial feeding 21%. For the ones of natural feeding, 40% of the mothers experienced remenstruation within the post-partum period of 4 to 7 months, 70% within 10 to 12 months, 91% in 12 to 18 months. For mothers in mixed feeding, the ratio of mothers who had remenstruation within post-partum 4 to 7 months was as high as 67%, 88% for 10 to 12 months, and 97% for 12 to 18 months. As regards artificial feeding, the ratio was already 91% for the group of 4 to 7 months and reached 100% in the group of 10 to 12 months. It was previously mentioned that 57% of the surveyed practised contraception, and 20% of the mothers practising

contraception had resumed contraception before the post-partum remenstruation, 32% resumed it directly after remenstruation, 26% started over one-month after the remenstruation and for 20% of mothers, it was unknown.

- (3) Research by the laboratory of Prof. Seiichi Matsumoto of the Faculty of Medicine, Gunma University.^{12/}

In this research, following cases have been surveyed; as cases of a large city in Tokyo Metropolis 578 cases, totalling 396 deliveries during January 1959 to September 1960 in Gynecological Hospital of Tokyo University surveyed in June-July 1961, 100 deliveries during January to April 1961 in Aiiku Hospital surveyed in October of the same year, and 82 deliveries during January and February 1960 in Kanto Communication Hospital surveyed in August 1961; as data of a middle-size city in Sendai City 188 cases delivered during April 1955 to February 1956 at the Gynecology Hospital of Tohoku University surveyed in May 1956; and as rural data in 2 agricultural villages in Gunma Prefecture 127 cases of house deliveries during April 1959 to November 1960 surveyed in February and September of 1961. As shown in Table 3, "remenstruation within 3 months is most frequent in Tokyo and longer periods increase in the order of Sendai and Gunma.....

^{12/} Seiichi Matsumoto, Menstruation and Its Disorders, Tokyo 1962, pp. 78-86.

Table 3.

post-partum no. of months	Tokyo		Sendai		Gunma villages	
	number	ratio	number	ratio	number	ratio
total	578	100%	188	100%	127	100%
0 - 3	266	46	69	36	34	27
3 - 6	161	28	53	29	30	24
6 -12	106	18	58	31	46	36
12 and over	45	8	8	4	17	13

* based on footnote 12/. p. 79.

Within one year, most resumed menstruation in any of these areas. If this is compared with the result of the survey by Fujisawa in 1947 (remenstruation rates within 3 months being 22% in urban areas and 21% in rural areas, within 6 months 44% urban and 40% rural (cumulative), within 12 months 70% urban and 60% rural), the period is short both in urban and rural areas particularly in the former."^{13/} An attempt is being made here in calculating the average post-partum period of remenstruation according to the data provided by Prof. Matsumoto, obtaining 4.6 months for Tokyo Metropolis, 5.2 months for Sendai City and 6.5 months for 2 agricultural villages in Gunma Prefecture. Prof. Matsumoto has given further detailed gynecological analysis on the post-partum remenstruation.

^{13/} ibid., pp. 79-80.

- (4) Collaborative study by new-life movement leaders at Japan Steel and Tube Company.

In the Kawasaki Iron Works of the Company, "new-life movement" including family planning has been developed since 1953 in collaboration with the Foundation-Institute for Research of Population Problems,^{14/} and in the symposium for the new-life movement leaders of Kanto-area enterprises held in September 1964, Mrs. Sei Matsumura reported the result of a collaborative study guided by the leaders on 300 cases of deliveries in 1953, 1,260 deliveries of 1954-57 and 190 deliveries of 1963.^{15/} Table 4 shows the marked concentration of the time of remenstruation under post-partum 4 months in 1954-57 and 1963 compared with 1953. Trial computation of the average period reveals 6.7 months for 1953, 4.6 months for 1954-57 and 4.9 months for 1963. Dividing the data of 1954-57 and 1963 into natural feeding and mixed feeding, the average period of post-partum remenstruation is the same for both groups and was shortened from 7.3 months in 1954-57 to 5.6 months in 1963. For the group of

^{14/} Clyde V. Kiser ed., Research in Family Planning, Princeton University Press, 1962, pp. 570-572. Foundation-Institute for Research of Population Problems, The New Life Movement through Enterprises in Japan, Tokyo, February 1965.

^{15/} Sei Matsumura et. al., Remenstruation after Deliveries (mimeograph), submitted to the Symposium for New-Life Movement Leaders in Kanto-Area Enterprises, 1964.

Table 4.

post-partum no. of months	ratio of mothers remenstruated		
	1953	1954-57	1963
total	100%	100%	100%
0 - 4	16	51	45
4 - 7	24	31	30
7 -10	12	7	16
10-13	30	9	7
13 and over	18	2	3

* calculated from data in footnote 15/.

artificial feeding, it decreased from 3.8 months in 1954-57 to 2.9 months in 1963. In 1954-57, among the mothers surveyed, 75% is natural feeding, 15% mixed feeding and 9% artificial feeding, but in the data of 1963, natural feeding decreased to 67% and mixed and artificial feeding expanded to 16.5% respectively. Although the degree of concentration in under 4 months seems to have declined in 1963 compared to 1954-57 in Table 4, since the number of cases is relatively small, it is assumed to have been affected greatly by the change of distribution by post-partum numbers of months of mothers categorized by the type of feeding. In view of the relatively upwarding trend of artificial feeding and declining trend of post-partum amenorrhea, the reporter emphasizes the need "to avoid the unplanned pregnancy in full realization of shortening post-partum amenorrhea in practising better family

planning and to furtherly deepen the consciousness of the importance of family planning practice including premarriage counselling (counselling for the unmarried) and health guidance for pregnant women."

Although the survey examples above mentioned are still very immature, these are the action researches undertaken in Japan and are indicating the demographic significance of researches on post-partum amenorrhea and thier necessity and possibility.^{16/}

5. Conclusive Remarks

It is too hasty to decide the period of post-partum amenorrhea in recent Japan from the above limited data, but what is already evident is that the length is rapidly changing and that the regional distinction is becoming clear. Corresponding to these trends, it is meaningful that the interest of guidance in family planning has increasingly

^{16/} Same may not only be said to Japan but to other countries. The following distinctive report indicates the necessity and possibility of such researches in Korea.

Jae Mo Yang, "Study on Rural (Koyang) Population Control", International Planned Parenthood Federation, Proceedings, op. cit., pp. 108-117.

been concentrated in the premarriage counselling and post-partum guidance.

Causative factors of the post-partum amenorrhea are highly complicated. Not only such gynecological factors as method of lactation, frequency of child births, pregnancy period, and parturition bleeding,^{17/} but important are such economic and social factors as levels of family income, social status and role of women, working conditions, health, nutrition, dietary habit, common belief connected to pregnancy and parturition, distribution of public and private maternity institutions. Post-partum amenorrhea not only holds important demographic implications but, as mentioned above, is one of the non-monetary general indices of the level of living or the welfare level. This may also be indicative of the effectiveness of public health activities including family planning. Thus, we strongly hope for the future promotion of researches and follow-up studies on the problem of post-partum amenorrhea.

^{17/} Seiichi Matsumoto, op. cit.

