

우리나라 可妊婦人의 出生間隔에 關한 研究

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1973 年 4 月

家族計劃研究院

1971 Fertility-Abortion Survey
Special Report Series, No. 3

BIRTH INTERVALS WITH AND WITHOUT FAMILY LIMITATION IN KOREA

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April 1973

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머 리 말

本 報告書는 1971年 9, 10月間에 實施한 바 있는 우리나라 婦人의 出産力과 人工流産에 關한 調査資料에서 出生間隔에 對한 內容만을 分析한 것이다.

家族計劃事業 結果는 出産力の 變動을 가져오며 이는 出生間隔의 變化로 表現 되기 때문에 出産過程의 樣相을 把握할 수 있는 指標가 되는 것입니다.

특히 종래의 出生間隔 分析에서 일어나는 問題를 是正하고자 生命表法에 依한 分析을 試圖했으며 家族計劃實施者와 非實施者들의 出生間隔을 比較分析한 것으로, 本 冊字가 앞으로 家族計劃과 人口問題에 關한 研究 및 評價에 基礎資料로 널리 活用되기를 바랍니다.

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家族計劃研究院長 車 潤 根

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I. 緒 論

家族計劃事業과 直接 關聯된 우리들의 關心事의 하나는 그 事業의 直接 또는 間接의로 影響을 주어 變化된 出産力을 어떠한 方法으로 測定하여 比較 觀察 하겠는가에 있다고 할 수 있다.

勿論 家族計劃의 窮極의인 目的은 出産率을 低下시키는데에 있는 것은 事實이지만 그 家族計劃事業으로 因한 婦人들의 出産率의 變化가 出生率의 變化로서 表面에 나타나기 爲해서는 相當한 期間이 必要하고 더욱이 出生, 死亡統計資料가 未備한 地域社會에서는 出生率의 變化를 家族計劃事業의 效果測定の 尺度로 삼기가 困難하다고 볼 수 있을 것이다.

따라서 家族計劃으로 因한 婦人들의 出産力의 變化에 가장 銳敏하게 反應하여 變化한다고 볼 수 있는 出生間隔에 關하여 理論의이며 또한 實際의인 面에서 많은 研究가 發表되어 있다.

過去 10年間 推進되어온 家族計劃事業으로 因하여 우리 나라의 婦人들의 出産力에도 적지 않은 變化가 있을 것으로 期待되며, 그 出産力의 變化를 出生間隔이라는 指標로서 比較檢討하여보기 爲하여 本論文에서는 1971年度 家族計劃研究院에서 實施한 全國出産力調査에 나타난 婦人들의 出産歷資料를 使用하여 家族計劃(人工流産을 包含한)의 實施與否에 따른 出産間隔의 變化에 關한 分析을 試圖하였다.

家族計劃을 함으로써 出生間隔이 어느 程度 延長되었는가라는 問題를 다루는 데에 있어서 우리들은 出生間隔을 出産力變化의 指標로 삼는 境遇에 惹起되는 問題點을 事前에 考慮하여보지 않을 수 없다.

主로 問題가 되는 것은 出生間隔은 面接調査의 時點에서 切斷됨으로써 일어나는 所謂 切斷效果(Truncation effect)의 影響을 받는다는 點이다⁽³⁾. 卽, 例를 들면 첫번째와 두번째의 出生間隔의 平均値를 求했다고 하면 이 平均値의 計算에는 첫번째 出生後 面接調査當時까지 두번째 出生을 갖지 못한 婦人들(이들의 첫번째와 後에 있을 두번째 出生間의 間隔이 긴 境遇)의 것은 모두 漏落됨으로써 計算된 出生間隔의 平均値는 實際보다도 짧게 나타나게 될 것이다. 또한 出生子女數 N名을 가진 婦人들만을 相對로 各 出生順位別로 出生間隔의 平均値를 求하는 境遇, 出生順位가 높을 수록 그 出生의 發生時點과 面接調査時點과의 期間이 短縮될 것이므로 自動的으로 그 出生間隔은 出生順位가 높아질수록 그 平均値는 短縮된 것으로 나타날 것이다.

이와 같은 出生間隔의 切斷效果의 影響을 完全히 除去한다고는 할 수 없으나 어느 程度 減少시키기 爲하여 Sheps⁽³⁾는 出生順位別 出生間隔의 平均値計算을 生命表 形式의 方法을 利用한 例를 提示하였다.

本論文에서는 婦人들의 出產歷資料를 家族計劃(人工流產을 包含한)을 實施한 境遇와 實施하지 않은 境遇로 나누고 이 各各에 있어서의 出生順位別 出生間隔을 生命表 形式의 方法을 適用시켜서 計算하였고, 上記한 Truncation effect를 考慮하여 各 出生順位를 發生年度別로 다시 區分하여서 平均出生間隔을 比較하였다. 勿論 여기서 家族計劃을 實施한 境遇의 出生間隔은 그 避妊이 失敗한 境遇나 또는 故意的으로 避妊을 中斷하였을 境遇에 限하여서 있을 수 있고, 避妊이 成功的으로 繼續되는 境遇는 除外된다. 따라서 例를 들어서 첫번째 出生以後에 家族計劃을 實施한 境遇와 實施하지 않은 境遇에 있어서의 첫번째 두 번째 出生間隔의 平均値의 差異는 嚴密한 意味에서는 避妊이 失敗 또는 中斷 등으로 끝난 家族計劃을 實施한 境遇와 전혀 避妊을 實施하지 않은 경우에 있어서의 平均出生間隔의 差異라고 보는 것이 妥當할 것이다.

II. 研究資料 및 方法

家族計劃研究院에서 實施한 1971年度 全國出產力調査에서 얻은 1回 以上の 正常分娩의 經驗을 가진 婦人 5,484名의 出產資料에 나타난 出生間隔에 關한 情報를 引用하여서 分析하였다.

于先 出生間隔資料를 出生順位別로 分類하였고, 이들을 다시 前回出生發生年度別로 細分하였으며, 이를 避妊實施(人工流產을 包含한) 한 群과 實施하지 않은 群으로 나누어서 出生間隔의 平均值와 分散을 求하고 그 結果를 比較 分析하였다.

面接調査時點에서 切斷되는(出生間隔의 影響(Truncation effect)을 減少시키기 爲하여 Sheps⁽³⁾가 提示한 生命表法을 利用하여서 各 出生順位別 間隔의 理論的 分布와 그의 平均間隔 및 分散을 Computer로 求하였다.

但, 여기서 生命表法을 利用함에 있어서 前回出生後 x 週 $\sim x+8$ 週의 期間內에 出生의 經驗없이 離脫되는 婦人數에는 面接調査時點으로 因하여 出產歷이 切斷된 境遇만 包含되어 있으며, 其他의 理由 卽, 死亡, 離婚 또는 50歲에 達함으로 써 出產歷의 끝나는 境遇는 情報의 末備로서 이에 包含시키지 못하였다.

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Ⅲ. 分析結果 및 考按

1. 避妊(人工流産을 包含한)을 實施하지 않은 境遇의 出生間隔

避妊을 하지 않은 境遇에 있어서의 各 出生順位別 出生間隔은 人爲的인 要素가 끼지 않은 自然的인 夫婦生活에 나타나는 出生間隔이므로 避妊이나 人工流産等의 人爲的인 要素의 影響으로 變化하여서 나타날 出生間隔과 比較하는데에 있어서는 基礎的인 尺度가 될 것이다.

여기서 出生間隔을 어머니의 年齡別로 分類하지 않고 出生順位別로 觀察한 것은 婦人들의 家族計劃實施의 決定이 그들의 年齡보다는 出生子女數(嚴密하게 말하면 現存子女數)에 의하여 크게 影響받을 것이라는 假定에 의한 것이다.

한편 出生順位別 平均出生間隔을 求하는데에 있어서 前回の 出生發生時點이 出産歷의 調査時點에 너무 接近되어 있는 境遇에는 그 다음 回の 出生이 없는 境遇가 많이 있을 것이며, 또한 있다고 하더라도 그 出生間隔은 짧은 것들만이 出産歷에 記入되겠으므로 結局 實際的인 平均出生間隔보다도 짧게 나타날 可能性이 많을 것이다. 따라서 여기서는 前回の 出生發生時點과 이 面接調査時點間이 約 5年以上 되는 境遇만을 取하여서 各 出生順位別 平均出生間隔을 計算하였으며 그 結果는 Table 1과 같다.

Table 1. Birth Intervals* by Birth Order in the Absence of Family Limitation (in months)

Birth Order	Number of Intervals	Mean	Standard Deviation	Standard Error
1~2	4,616	27.72	13.50	0.20
2~3	4,431	31.57	10.37	0.16
3~4	3,603	31.47	9.89	0.16
4~5	2,745	31.81	10.06	0.19
5~6	1,931	31.61	9.71	0.22
6~7	1,251	31.63	10.17	0.28

* Note: Only birth intervals of which the preceding birth occurred before the end of 1966(i.e. approximately 5 years preceding the interview) were included in this tabulation.

即, 出生順位 1~2(첫번째와 두번째)의 平均出生間隔은 27.72個月로서 그以後의 順位에 있어서의 平均出生間隔보다도 約 4個月이 짧게 나타나고 있으며, 出生順位 2번째以後에 있어서의 平均出生間隔은 31.47個月~31.81個月로서 出生順位에 따른 出生間隔의 變動이 別로 없음을 보여주고 있다.

2. 避妊(人工流産을 包含한)을 實施한 境遇의 出生間隔

避妊으로 因하여 出生間隔이 어느 程度 延長되었는가를 알아보기 爲하여 避妊을 實踐한 境遇에 있어서의 出生間隔을 觀察하여본 結果는 Table 2와 같다.

Table 2. Birth Intervals*by Birth Order with Family Limitation which Ended with Failure or Discontinuation (in months)

Birth Order	Number of Intervals	Mean	Standard Deviation	Standard Error
1~2	133	30.90	14.73	1.28
2~3	287	37.94	11.76	0.69
3~4	448	38.67	11.23	0.53
4~5	391	39.68	11.76	0.59
5~6	286	38.72	11.04	0.65
6~7	188	39.90	11.47	0.84

* Note: Only birth intervals of which preceding the birth occurred before the end of 1966 (i. e. approximately 5 years preceding the interview) were included in this tabulation.

勿論 여기서 指摘할 것은 避妊이 完全成功인 境遇에는 다음의 出生이 發生하지 못하여 따라서 出生間隔이란 있을 수 없으므로 結局 “避妊을 實踐한 境遇에 있어서의 出生間隔”이란 嚴密하게 말해서 “避妊이 失敗 또는 中斷 등으로 끝난 境遇에 있어서의 出生間隔”을 意味하는 것이 될 것이다.

Table 2에서 보는 바와 같이 出生順位 1~2(첫번째와 두번째)의 平均出生間隔은 30.90個月로서 그 以後의 順位에 있어서의 平均出生間隔보다도 約 8個月이 짧게 나타나고 있으며 出生順位 2번째 以上에 있어서의 平均出生間隔은 37.94個月~39.90個月로서 出生順位가 높아짐에 따라서 若干 增加하는 傾向을 보여주고 있다.

한편 避妊을 하지 않은 境遇와 避妊을 한 境遇에 있어서의 出生順位別 平均出生間隔의 差를 보면 出生順位 2~3에서 6.37個月, 3~4에서 7.20個月, 4~5에서 7.87個月, 5~6에서 7.11個月, 6~7에서 8.27個月로 各各 나타나고 있다. (Table3)

3. 前回 出生發生年度別로 본 出生順位別 出生間隔

(1) 避妊(人工流産을 包含한)을 하지 않은 境遇

面接을 通하여 얻은 婦人들의 出産歷에 나타난 出生順位別 出生間隔은 同一한 出生順位, 例를 들면 첫번째와 두번째 出生間의 間隔이라고 하더라도 前回の 出生이 언제 發生하였는가에 따라서, 或은 그 平均出生間隔에 差異가 있을지도 모른다는 假定下에서 前回出生發生年度別로 出生間隔을 觀察하여본 結果는 Table 4와 같다.

Table 3. Number of Months increased in Mean Birth Interval due to the Adoption of Family Limitation which Ended with Failure or Discontinuation

Birth Order	Number of months Increase in Mean Birth Interval	Percent of Increase in mean Birth Intervals
1~2	3.18	11.5
2~3	6.37	20.2
3~4	7.20	22.9
4~5	7.87	24.7
5~6	7.11	22.5
6~7	8.27	26.1

一般的으로 前回 出生發生年度가 1967~1970인 境遇에 있어서의 平均發生間隔이 가장 짧게 나타나고 있으며 그의 主要理由는 面接調査가 1971年度에 實施되었으므로 前回 發生發生時點과 面接時까지의 期間이 約 5年 以下로 制限되어 있어서 所謂 切斷效果의 影響을 받은 것으로 보인다. ?

한편 前回 出生發生度數가 1966年末 以前인 境遇(即 面接時點에서 最少限 約 5年 以前에 前回出生이 發生한 境遇)에 있어서는 年度別로 平均出生間隔의 어떤 特定한 樣相을 보여주지 않고 있다. 이와 같은 結果는 前回出生이 있는 後 約 5年(60個月)이 經過한 後에도 다음 回の 出生이 發生하지 않은 境遇의 大部分은 그 以後에 있어서도 結局 다음의 出生이 發生하지 않는다는 것을 暗示하여준다고 볼 수 있겠다.

(2) 避妊(人工流産을 包含한)을 한 境遇

避妊을 實施한 境遇에 있어서 避妊의 失敗 또는 中斷 등으로 出生이 發生함으로써 생긴 出生間隔을 出生順位別로 본 前回 出生發生年度別 平均出生間隔은 Table 5에 나타난 바와 같다. 이 境遇에 있어서는 出生間隔의 數가 크지 못하여 前回 出生發生年度別 傾向에 關해서 有意한 觀察을 할 수 없게 되어 있으나 첫 번째와 두 번째 出生의 平均間隔을 除外한 其他의 出生順位에 있어서는 一般的으로 前回 出生發生年度가 이를수록 平均出生間隔이 길게 나타나고 있다. 이와 같은 樣相은 避妊을 하는 境遇에 있어서는 前回出生이 있는 後 5年(60個月) 以上이 經過한 後에도 다음 回の 出生이 흔히 發生할 수 있음을 뒷바침하여주는 것으로 볼 수 있겠다.

Table 4. Birth Intervals in the Absence of Family Limitation by Birth Order and Calendar Year in which the Preceding Birth Occurred (in months)

1. Intervals between 1st and 2nd Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	729	32.38	12.17
1960~1962	2,908	25.70	14.12
1963~1966	979	30.26	11.04
1967~1970	740	24.46	8.61

2. Intervals between 2nd and 3rd Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	619	33.17	11.41
1960~1962	2,789	31.22	9.82
1963~1966	1,023	31.56	11.04
1967~1970	403	25.54	10.08

3. Intervals between 3rd and 4th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	494	33.95	10.92
1960~1962	2,470	31.05	9.42
1963~1966	639	31.18	10.53
1967~1970	83	27.56	18.52

4. Intervals between 4th and 5th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	391	34.12	11.26
1960~1962	2,020	30.99	9.40
1963~1966	334	34.08	11.57
1967~1970	*		

5. Intervals between 5th and 6th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	262	32.68	9.90
1960~1962	1,509	30.98	9.24
1963~1966	160	35.80	12.18
1967~1970	*		

6. Intervals between 6th and 7th birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	165	32.45	11.27
1960~1962	993	30.99	9.60
1963~1966	93	37.04	12.17
1967~1970	*		

* Note: Number of intervals less than 30.

Table 5. Birth Intervals with Family Limitation by Birth Order and Calendar Year in which the Preceding Birth Occurred (in month)

1. Intervals between 1st and 2nd Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	54	22.09	14.33
1963~1966	79	36.92	11.68
1967~1970	126	29.98	8.60

2. Intervals between 2nd and 3rd Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	115	40.82	12.37
1963~1966	172	36.02	10.92
1967~1970	133	33.71	13.90

3. Intervals between 3rd and 4th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	259	40.07	10.82
1963~1966	189	36.76	11.52
1967~1970	*		

4. Intervals between 4th and 5th birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	330	40.39	11.03
1963~1966	61	35.82	14.47
1967~1970	*		

5. Intervals between 5th and 6th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	252	38.72	11.04
1963~1966	*		
1967~1970	*		

6. Intervals between 6th and 7th Birth

Calendar Year	Number of Intervals	Mean	Standard Deviation
—1960	*		
1960~1962	178	39.90	11.47
1963~1969	*		
1967~1970	*		

* Note: Number of intervals less than 30.

Table 6. Number of Months Increased in Mean Birth Interval due to the Adoption of Family Limitation by calendar year

1. Intervals Between 1st and 2nd Birth

Calendar Year	Number of months Increase in Mean Birth Intervals	Percent of Increase in Mean Birth intervals
—1960		
1960—1962	—3.61	—14.0
1963—1966	6.66	22.0
1967—1970	5.52	22.6

2. Intervals. Between 2nd and 3rd Birth

Calendar Year	Number of months Increase in Mean Birth Intervals	Percent of Increase in Mean Birth intervals
—1960		
1960—1962	9.60	30.7
1963—1966	4.46	14.1
1967—1970	8.17	32.0

3. Intervals Between 3rd and 4th Birth

Calendar Year	Number of months Increase in Mean Birth Intervals	Percent of Increase in mean Birth Interval
—1960		
1960—1962	9.02	29.0
1963—1966	5.58	17.9
1967—1970		

4. Intervals Between 4th and 5th Birth

Calendar Year	Number of months Increase in Mean Birth Intervals	Percent of Increase in mean Birth Intervals
—1960		
1960—1962	9.40	30.3
1963—1966	1.74	51.0
1967—1970		

5. Intervals Between 5th and 6th Birth

Calendar Year	Number of months Increase in Mean Birth Intervals	Percent of Increase in Mean Birth Interval
—1960		
1960—1962	7.74	25.0
1963—1966		
1967—1970		

6. Intervals Between 6th and 7th Birth

Calendar Year	Number of month Increase in Mean Birth Intervals	Percent of Increase in Mean Birth Interval
—1960		
1960—1962	8.91	28.8
1963—1966		
1967—1970		

VI. 結 論

家族計劃研究院에서 1971年 9月 1日~10月 31日 사이에 實施한 家族計劃 및 出生力調査에서 얻은 Data를 利用하여서 1回 以上の 正常分娩의 經驗을 가진 婦人 5,484名의 出生經歷에 나타난 出生間隔을 基礎資料로 하여서 다음과 같은 內容의 分析結果를 얻었다.

1. 避妊(人工流産을 包含한)을 實踐하지 않은 境遇의 出生間隔

面接時點으로 인한 切斷效果(Truncation effect)의 影響을 減少시키기 爲하여 前回 出生發生이 面接時點으로부터 最少限 約 5年 以前에 있었던 境遇만을 利用하여 計算된 平均出生間隔은 出生順位 1~2에서 27.7個月(標準偏差: 13.5個月)로서 그 以後의 出生順位別 平均出生間隔들에 比較하여 約 4個月이 짧게 나타나고 있으며 出生順位 2번째 以後에 있어서의 平均出生間隔은 31.5個月~31.8個月(標準偏差: 9.7個月~10.4個月)로서 出生順位別에 따른 出生間隔의 變動이 別로 나타나고 있지 않다(Table 1參照).

2. 避妊(人工流産을 包含한)을 實施한 境遇의 出生間隔

여기서도 前回出生이 面接時點으로부터 最少限 約 5年 以前에 發生한 境遇만을 利用하여서 平均出生間隔을 計算하였다. 避妊이 完全成功인 境遇는 다음의 出生이 發生하지 못하여 出生間隔이란 있을 수 없으므로 “避妊을 實踐한 境遇의 出生間隔”이란 “避妊을 實踐하였으나 그의 失敗 또는 中斷 등으로 다음의 出生이 있었던 境遇의 出生間隔”을 意味한다. 이 境遇에 出生順位1~2에서 30.9個月(標準偏差: 14.7個月)로서 그 以後의 出生順位에 있어서의 平均值보다도 約 8個月이 짧게 나타나고 있으며 出生順位 2번째 以上에 있어서의 順位別 平均出生間隔은 37.9個月~39.9個月(標準偏差: 11.0個月~14.7個月)로서 順位에 따라 若干씩 增加하는 傾向을 보여주고 있다(Table 2參照)

한편 避妊을 하지 않은 境遇와 한 境遇에 있어서의 出生順位別 平均出生間隔의 差는 出生順位 1~2에서 3.2個月로서 가장 짧고, 그 以上の 出生順位에 있어서는 6.4個月~8.3個月 程度로 나타나고 있다.

3. 前回 出生發生年度別로 본 出生順位別 出生間隔의 傾向

(1) 避妊(人工流産을 包含한)을 하지 않은 境遇

一般的으로 前回 出生發生年度가 1967~1970인 境遇에 있어서의 出生間隔이 가장 짧게 나타나고 있으며, 그 原因으로서는 面接調査가 1971年度에 實施되었으므로 前回 出生時點과 面接時까지의 期間이 約 5年 以下로 制限되어 있어 所

謂 切斷效果의 影響을 받을 것으로 보인다.

한편 前回 出生發生年度가 1966年末 以前인 境遇에 있어서는 年度別로 平均出生間隔의 어떤 特定한 樣相을 보여주지 않고 있는데, 이것은 前回出生이 있는 後 約 5年이 經過한 後에도 다음의 出生이 없는 境遇의 大部分은 그것으로 斷産되는 것을 意味한다고 볼 수 있다(Table 4 參照).

(2) 避妊(人工流産을 包含한)을 한 境遇

이 境遇는 出生順位 1~2의 平均出生間隔을 除外한 其他 出生順位에 있어서는 一般的으로 前回 出生發生年度가 이를수록 平均出生間隔이 길게 나타나는 傾向을 보여주고 있으며 이것은 避妊을 하는 境遇에 있어서는 前回出生이 있는 後 5年 以上이 經過한 後에도 다음 回の 出生이 흔히 發生할 수 있음을 뒷바침하여주는 것으로 볼 수 있다(Table 5 參照).

ABSTRACT

Birth Intervals With and Without Family Limitation in Korea

—Based on the Pregnancy History Data of Korean Women from
the 1971 Fertility and Abortion Survey—

Ung Ring Ko · Eung Suk Kim,

The birth intervals with and without family limitation to successive birth order are analyzed from data, which were kindly made available by the Korean Institute for Family Planning, concerning the reproductive histories of 5,484 married Korean women who had had at least one live birth.

Reproductive histories from 6,285 married women aged 54 or under were collected by the Institute during the period September 1–October 31, 1971.

The computation of mean birth interval was based on the “life table technique” suggested by Sheps in order to reduce the effect of selection against long intervals due to the truncation of reproductive histories by the interview cut-off date.

A summary of the findings is as follows:

(1) Mean birth intervals by birth order in the absence of family limitation (use of contraceptive or induced abortion)

For further reduction of truncation effect on the mean interval, only birth intervals in which the preceding birth occurred before 1966 (i.e. approximately 5 years from the time of interview) were included in the calculation of mean interval.

The estimated mean interval between 1st and 2nd birth in the absence of family limitation is 27.7 months (Standard deviation: 13.5 months) which is shorter by about 4 months as compared with those of higher birth orders.

The estimated mean interval between the successive births after the second birth ranges from 31.5 months to 31.8 months (Standard deviation: 9.7 months –10.4 months) without showing any consistent tendency for the mean to change with birth order (See Table 1).

(2) Mean birth intervals by birth order with family limitation (use of contraceptive or induced abortion)

The birth interval with family limitation means the interval between two

successive births when family limitation was practiced after the preceding birth but ended up with failure or discontinuation, since had it been continuously successful there would have been no birth to follow.

The estimated mean interval between 1st and 2nd birth with family limitation is 30.9 months (Standard deviation: 14.7 months) which is shorter by about 8 months than those of higher birth orders.

The estimated mean interval between births of the second order or higher ranges from 37.9 months to 39.9 months (Standard deviation: 11.0 monthr -14.7 months) showing a slight tendency for the mean to increase with higher birth order (See Table 2).

The difference in mean interval between the two groups, one without family limitation and the other with family limitation (which ended with failure or discontinuation), is 3.2 months between the 1st and 2nd birth while it ranges from 6.4 months to 8.3 months between the higher order births (See Table3)

(3) Mean birth intervals by calendar year in which the preceding birth occurred.

Obviously due to the truncation effect, the mean intervals in which the preceding birth occurred in 1967-1970 (i.e. less than 5 years preceding the interview) are relatively shorter than those in which the preceding birth occurred before 1967.

Regarding intervals in which preceding birth occurred before 1967, there is no consistent tendency for the mean interval to decrease with calendar year.

This might imply that, in the absence of family limitation, most cases which failed to have a live birth within 5 years after the preceding one can be regarded as "sterile" (See Table 4),

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附 錄

出生間隔을 生命表 形式의 方法을 適用시켜서 計算하는 方法을 例를 들어서 說明하면 아래와 같다. 아래 表에 있어서 期間은 8 週間隔으로 나누어져 있다. 이러한 8 週間隔을 時間單位로 計算된 平均值와 標準偏差는 1 週가 0.23個月과 같으므로 月歷의 單位로 變換되었다.

例를 들어 다음 表에 있어서의 平均 出生間隔과 10.48個月의 標準偏差는 2.772 件의 觀測된 出生 (4 欄)으로 부터 直接 計算되었고, 31.22個月의 平均值와 9.8 2個月의 標準偏差는 7 欄과 8 欄에서 求한 것이다. 이 表는 두번째 出生을 經驗한 2,821名의 婦人들이 두번째 出生이 있는 後 세번째의 出生의 發生樣相을 보여주고 있다.

生命表 形式에 依한 計算例

Birth Interval Between 2-3 Live Birth Without Limitation of Family Size

(For the Women Whose Preceding Live Birth
occurred in the years of 1960~1962)

1	2	3	4	5	6	7	8
x	S_x	W_x	b_x	q_x	P_x	B_x	F_x
40	2821	0	11	.0039	1.0000	39	.0041
48	2810	1	27	.0096	.9961	96	.0100
56	2782	0	38	.0137	.9865	135	.0140
64	2744	1	42	.0153	.9731	149	.0155
72	2701	0	68	.0252	.9582	241	.0251
80	2633	1	102	.0387	.9340	362	.0376
88	2530	1	149	.0895	.8978	529	.0550
96	2380	0	205	.0861	.8450	728	.0757
104	2175	1	203	.0934	.7722	721	.0750
112	1971	0	226	.1147	.7001	803	.0835
120	1745	0	213	.1221	.6198	757	.0787
128	1532	0	212	.1384	.5442	753	.0783
136	1320	2	207	.1569	.4689	736	.0765
144	1111	1	202	.1819	.3953	719	.0748
152	908	0	152	.1674	.3234	541	.0563
160	756	0	118	.1561	.2692	420	.0437
168	638	0	106	.1661	.2272	378	.0393
176	532	0	76	.1429	.1895	271	.0281
184	456	0	54	.1184	.1624	192	.0200

192	402	1	57	.1420	.1432	203	.0211
200	344	0	40	.1163	.1228	143	.0149
208	304	0	45	.1480	.1086	161	.0167
216	259	0	26	.1004	.0925	93	.0097
224	233	0	33	.1416	.0832	118	.0123
232	200	0	13	.0650	.0714	46	.0048
244	361	32	147	.4261	.0668	285	.0296

	(4 欄으로 부터)	(7 이나 8 欄으로 부터)
平均 間隔	31.83月	31.22月
標準 偏差	10.48月	9.82月

이 表에서 보던 두번째 出生을 經驗한 2,821名의 婦人들 中 50%가 세번째의 出生을 經驗하게 될 解産에 繼續하는 期間 (두번째 出生時點으로 부터의)은 132.5週 卽 30.5月歷月로 나타나고 있다.

表中の 記號를 說明하면 아래와 같다.

1. x =두번째 出生時點으로 부터의 期間 (單位: 週)
2. S_x = x 週의 時點에서 아직 세번째 出生을 經驗하지 않은 婦人數
3. W_x = x 와 $x+8$ 週 사이에서 세번째 出生의 經驗이 없이 面接時點에서 切斷되어 $x+8$ 週 以後의 情報를 얻지 못하게 된 婦人數
5. b_x = x 와 $x+8$ 週 사이에 일어나는 出生의 數
5. q_x = x 와 $x+8$ 週 사이의 推定된 條件付 出生確率.

$$q_x = \frac{b_x}{S_x - \frac{1}{2} W_x}$$

6. P_x =前번 出生 以後 x 週 以內에 出生을 하지 않을 確率.
7. B_x =每 1,000婦人當 出生의 推定數
8. F_x =間隔의 相對變數分布

$$F_x = B_x / \sum B_x$$