

The Philippines:

***Childbearing and Women's Work
In Cebu: Secondary Analyses***

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**Summary of Final Report Prepared for
The Women's Studies Project
Family Health International**

June 1998

**This summary highlights findings from a larger scientific report
and includes recommendations from in-country researchers**

The Philippines· Cebu Longitudinal Study– Secondary Analysis

I Introduction

To examine the effects of family planning on women's lives — particularly the relationships between number of children and pace of childbearing and women's work — the Women's Studies Project (WSP) at Family Health International (FHI) supported secondary analyses of the Cebu Longitudinal Health and Nutrition Survey (CLHNS). Researchers from the University of North Carolina, FHI, and the University of San Carlos in Cebu, Philippines, analyzed data collected from the original CLHNS in 1983-86 and from the follow-up study in 1991-92. The original survey recruited 3,327 pregnant women from 33 *barangays* of the metropolitan Cebu area who subsequently had a birth or pregnancy termination in a one-year period beginning in 1983. A follow-up survey was successfully conducted with 2,395 of the women in 1991. The analysis for the present study focused on the 2,395 women remaining at follow-up.

The CLHNS contains data on women's work patterns, earnings, and reproductive events in a large cohort of women over an eight-year period. Prospective data allow examination of changes in women's labor force participation and earnings following a pregnancy, but also conditioned on prior reproductive experiences and a wide range of maternal, household, and community characteristics. Detailed data allow differentiation of type of work by wage (formal), self-employment (informal), and piece work. This provides the opportunity to explore work sector effects on women's earnings while adjusting for hours of work.

II Background

Family planning use and smaller family size have been theorized to improve child health and survival and also to improve the quality of women's lives. While the effects on child health and survival are well documented, questions remain about how family planning use influences various aspects of women's lives. There are significant health costs of high levels of reproductive stress for women in developing countries, especially when stress is coupled with chronic undernutrition and physically demanding work. Repeated cycles of pregnancy and lactation can deplete maternal energy and nutrition stores. There are hypothesized effects of childbearing on women's economic and psychosocial well-being and overall quality of life.

Women are faced with the competing demands of reproductive and productive roles. It has been argued that by limiting family size, constraints on productive economic activities are reduced. With fewer children, women can theoretically earn more income and thereby improve their own well-

being, as well as that of other family members. While this hypothesis is appealing, there is a lack of empirical evidence from developing countries supporting a strong effect of childbearing on women's earnings.

The relationship between women's work and childbearing is complex. Because decisions about childbearing and work are likely to be made jointly (and with input from a spouse or partner) it is challenging to disentangle cause and effect. Working women may choose to limit childbearing so they can continue to work and earn income. Conversely, childbearing may decrease women's opportunities for work or affect type of work, place of work, or work hours. Either sequence would result in a negative association between work and childbearing. However, increased economic demands of larger family size may push women into the labor force, resulting in a positive association of work and childbearing. In either case, the nature of the work-childbearing relationship depends on the type of work women do, the place of work, the hours of work, the availability of child care, and individual household, and contextual factors.

The type of work (i.e., formal wage sector versus informal sector or piece work) and the hours of work can affect women's earnings. Women may increase earnings by working more hours, but this may create more competition between productive and reproductive roles and may negatively influence other quality of life outcomes. Because of the time demands of child care, women may select jobs with more flexible hours, or jobs that are less labor-intensive, but generally at lower pay. Childbearing is likely to affect women's earnings in two major ways: by influencing whether or not women work for pay at various phases of their lives, and through the influence of having young children on women's work.

Finally, the effects of childbearing are likely to depend on a woman's reproductive phase and her life course. Late in pregnancy, women may find it difficult to continue working because of physical constraints. Mothers of infants and young children face the time demands of more intensive child care and breastfeeding. As children grow older, these demands may decline or child care may be more easily assumed by alternate caregivers. Older children (especially girls) may provide time-saving help in household tasks and child care.

III Study Goals

The goals of this secondary analysis were to

- 1 Determine the most common patterns of reproductive events in women's lives, considering age at marriage and number and pace of pregnancies, and then relating these patterns to education, labor force participation, quality of life, and health status.

- 2 Explore the impact of family size and pace of childbearing on women's work patterns in terms of type of work, progression of jobs, income and compatibility of work with child care
- 3 Explore the impact of family size and pace of childbearing on objective indicators of quality of life, including quality of housing, value of selected household assets, presence of conveniences and labor-saving devices, mother's nutritional status children's nutrition and physical and mental development

IV Study Design

This analysis began with a description of life patterns related to age, age at marriage and number and pace of pregnancies. Researchers identified patterns after examining available data to determine appropriate dimensions for categorizing women and constructing complex variables. The patterns were then described according to the distribution of relevant variables in the population. Following this description, associations between reproductive patterns and selected characteristics of the women such as education, health and nutrition status, work status and income, were examined.

Women's health was measured using two types of variables: body mass index (BMI), which served as a measure of her overall health and nutrition status, and other health-related variables to indicate whether the woman had any chronic problems that would interfere with her ability to care for her children.

The overall work pattern of a woman was examined using variables such as percentage of reproductive years spent in the labor force and progression of jobs as her family size and composition changed. For the purpose of this study, labor force participation was defined as working for pay. The concept of labor force participation, which may partially control for a set of underlying characteristics of "workers" in general, is represented by a dichotomous variable indicating whether the women worked before marriage. Income was determined for each individual in the household based on a series of questions about earnings in primary and secondary jobs and in family businesses. Women's income was computed separately.

A series of cross-sectional, multivariable analyses modeling women's work status and earnings as a function of women's reproductive patterns were conducted. Control variables included mother's age, education, urban or rural residence, household income, family structure (extended versus nuclear, presence of spouse, presence of alternative caregivers), and community-level information about commodity prices. In the second stage, longitudinal models used data from the 1983 and 1991 panels of the CLHNS. These models used currently available methods for dealing with selectivity, endogeneity, and unobserved heterogeneity. The effects of endogeneity on estimates

were compared using results of random versus fixed effects models and using Hausman test procedures. Random effects models produced substantively different estimates of coefficients on childbearing, work sector, and household composition variables, confirming a high level of endogeneity of childbearing variables in income and hourly earnings models.

V Results

A *Profile of High Fertility Women in the Philippines*

On average, high-fertility women (defined as having six or more pregnancies regardless of outcome) were older than low-fertility women by five years, with a greater proportion over age 35. Higher-fertility women had two years less education. They came from households with lower weekly incomes (1,205 pesos versus 1,399 pesos for low-fertility women) even though there were more income earners per household (6.6 versus 4.8). While approximately the same proportion of high-fertility as low-fertility women worked for pay (67 percent versus 71 percent), mean weekly income was lower among the high-fertility group (246 pesos versus 308 pesos). High-fertility women were more likely to live in rural areas (30 percent versus 22 percent) and were less likely to have electricity in their homes.

High-fertility women had poorer diets, reporting significantly lower intakes of energy, protein and fat. Iron intake, however, was comparable between groups. Overall, almost all women in the sample were below recommended levels of energy, fat and iron intake. High-fertility women weighed on average one kilogram less than low-fertility women. While a greater proportion of high-fertility women was categorized as underweight (body mass index ≤ 18.5), on average, BMI (kg/m^2) was only slightly lower among high- than low-fertility women. One exception to this pattern was that among currently breastfeeding women who had also breastfed within the past six months, low-fertility women had lower weights than high-fertility women.

Age at first marriage and age at first pregnancy were both significantly lower for high-fertility women. The time span between first and most recent pregnancies among high-fertility women was double that of low-fertility women (14.5 years versus 7.1 years). Current use of family planning was more common among low-fertility women (57.7 percent versus 47.3 percent for high-fertility women) as was modern family planning method use (30.4 percent versus 22.1 percent). High-fertility women reported greater reliance on traditional contraceptive methods.

High-fertility women experienced a greater percentage of fetal losses, at 9 percent of total pregnancies, compared to 6 percent of low-fertility women's pregnancies. Forty-eight percent of high-fertility women experienced at least one pregnancy loss, compared to 22 percent of low-fertility women. Birth intervals were shorter (25.6 months versus 31.8 months) among high-fertility

women. There was no significant difference in breastfeeding duration between the groups (only those who initiated breastfeeding were analyzed), but high-fertility women breastfed a greater proportion of their children for longer than 12 months and were more likely to be currently breastfeeding (28 percent versus 14 percent of low-fertility women). Twice as many high-fertility (68 percent) as low-fertility women experienced at least one episode of lactation overlapping with pregnancy. Overlap was more likely among women who were older and who came from lower-income households and urban areas.

Beyond multiple pregnancies and lactation, high-fertility women were stressed by multiple environmental factors, including low income, rural residence and low educational attainment. Their diets were poor, with the lowest energy intakes among the older, lower-income, rural high-fertility women.

B Effect of Childbearing on Labor Force Participation and Earnings

At the baseline in 1983, 47 percent of survey participants were working for pay. Logistic regression results indicated that workers were more likely than non-workers to be of higher parity, to be from a household with lower income, to have worked prior to marriage and to have a higher education. Having a child under age two decreased the probability of a woman working. Of those working for pay, 42 percent were self-employed (most in small stores or as street vendors), 31 percent were paid set wages (salary based on hours or days of work), 21 percent did piece work (mostly handicrafts) and 7 percent worked in family businesses.

In 1991, 74 percent of the women in the study were working for pay. Characteristics of workers were the same as in 1983 (more children, lower household income, worked prior to marriage, higher education, negative effect of child under two). In 1991, working women were significantly older than non-working women. Total number of children was not different between working and non-working women. The percentage of women doing piece work declined to 15 percent, while the percentage of women who were self-employed rose slightly to 44 percent. The likelihood that a woman was working in 1983 and 1991 was higher if she had several children in 1983, and was lower if she had a child under two years of age in 1991.

Among the 837 women who worked at both points in time, mean income increased about 47 pesos per week from 1983 to 1991. The mean change in income for women with no subsequent surviving child in the 8.5 year period was 2.3 times higher than that of women with at least one additional child (70 versus 26 pesos per week, respectively). The change in income in part reflects an increase in average hours worked, from 42 hours in 1983 to 46 in 1991. Piece workers had the lowest gains in wages, while wage workers had the highest (average total increases of 19 and 63 pesos per week, respectively). Earnings per hour increased by a mean of 0.6 pesos, with the greater advances in hourly earnings in the wage sector.

The final models included dummy variables representing the number of live births in the interval from 1983 to 1991 (1,2,3,4+), change in the number of children younger than two years old, presence of spouse and other adult females in the household, change in hours, change in household income exclusive of the mother's income, remaining in the wage or self-employment sectors, and maternal age. Maternal education, work before marriage and urban residence had no significant effect on earnings. Parity at baseline (1983) did not affect changes in earnings, but children born during the eight-year interval meant a significant decrease in earnings. The effect of children was non-linear. Compared to having no children in the interval, having only one additional child decreased weekly earnings by about 11 pesos and hourly earnings by about 0.3 pesos, whereas having four or more additional children decreased weekly earnings by about 56 pesos and hourly earnings by 1.2 pesos.

The birth of additional children reduced the number of hours women worked, with the strongest effects associated with children under two years of age. Since the effects of childbearing on weekly income were significant after controlling for change in hours worked and since there were negative effects of childbearing on earnings per hour, researchers concluded that the negative effect of additional children on women's earnings represents both a reduction in work hours and a shift to lower-paying jobs.

Maternal age is inversely related to total earnings and earnings per hour. Continued presence of a spouse significantly increased hourly earnings, and increases in earnings of others in the household were positively related to women's weekly and hourly earnings. A strong effect on change in earnings was seen with job stability. Those women who remained in the wage sector earned 54 pesos more per week, and one peso more per hour, than women who did piece work or who changed sector of employment.

The effect of childbearing on income operates only partly through the number of hours worked, with each additional child associated with a decrease in hours worked. This effect remains significant even after controlling for hours worked, suggesting that earnings per unit of work time also decline with increased childbearing. This supports the hypothesis that childbearing women shift to lower-paying jobs that are more compatible with reproductive roles. Furthermore, how earnings are increased varies by sector of employment. Women who remain in the wage sector increase earnings through improvements in hourly wages, while self-employed women increase earnings by increasing hours worked.

Researchers were unable to demonstrate a differential effect of childbearing by sector of employment. Still, they found that remaining in the same sector of employment has a strong positive effect on earnings over time. This job stability may make women more "resistant" to the effects of childbearing.

Since gains in women's income were made partly through increases in hours worked, this effect may exacerbate the conflict between women's reproductive and productive roles. Given that women's work hours increased to an average of 46 hours per week in 1991 and women also reported, on average, spending more than 23 hours per week doing household chores and related activities, one might question the extent to which improvements in income translate into overall improvements in women's lives.

C Effects of Childbearing on Quality of Women's Lives

Using the 1983 and 1991 CLHNS data, the longitudinal secondary analysis found that childbearing significantly reduced the likelihood that women work for pay and that, among working women, childbearing reduced both hourly and total earnings during the eight-year study interval. Additional analyses examined the impact of childbearing on other aspects of the quality of women's lives.

Quality of life was not measured by self-report but rather by summary measures of the quality of housing, the value of selected household assets, the presence of conveniences and labor-saving devices, mother's nutritional status, and measures of child nutrition and physical and mental development status. Our results, therefore, may not necessarily reflect women's actual sense of the quality of their lives. Nonetheless, descriptive analyses consistently showed that women with no subsequent pregnancy scored higher on **all** measures than women who continued childbearing and, with the exception of maternal nutritional status, the differences were all significant. Women with no further pregnancies started out "better off" and remained better off.

Among the sample of women who experienced at least one pregnancy during the study interval, those with no subsequent pregnancies were significantly older, of higher baseline parity, more educated and more likely to be living in an urban area. Women who had no subsequent pregnancies due to tubal ligation, compared to those having no further pregnancies for other reasons, did not differ significantly in terms of education, parity, income or place of residence. The only difference was that the ligated women were significantly less likely to be primiparas at baseline.

Among women without further pregnancies, only maternal nutritional status at baseline differed significantly. Ligated women had poorer scores than those not continuing childbearing for other reasons. This suggests that the women may have chosen tubal ligation chosen for health reasons.

Multivariate analyses that controlled for measures of quality of life at baseline and other relevant co-variables showed that for all measures of quality of life, subsequent pregnancy had a significant negative effect on the outcome. Each additional pregnancy significantly decreased the quality of life score in 1991. Primiparity at baseline had non-significant negative effects on housing, conveniences and mother's nutrition, significant negative effects on assets, and significant positive effects on child development.

Based on BMI scores, there was a dramatic decline over time in the number of undernourished women in the sample overall. Controlling for age (which is typically associated with an increase in BMI), women with no subsequent pregnancies experienced larger increases in BMI than those women who continued childbearing.

Maternal education was strongly associated with positive scores on each measure, as was urban residence. Maternal age did not show a consistent predictive pattern. Change in residence had a strong negative correlation to housing and asset scores, however, in some cases this indicated that the families were moving from an extended to a nuclear family household and hence, smaller quarters.

VI Conclusions and Recommendations

The study results have several policy implications.

A Nutritional Status of High-fertility Women

- 1 Family planning can be promoted as a means for women to achieve adequate birth spacing that will allow women the time necessary to recuperate between pregnancies and lactation.
- 2 Nutrition policies should focus on ensuring adequate dietary intake among older high-fertility women.
- 3 Policies should be put in place to emphasize both the importance of breastfeeding as well as meeting the increased energy and nutritional needs of lactating women.

B Effect of Childbearing on Labor Force Participation, Earnings, and Quality of Life

- 1 Study findings may be used by policy makers to promote the advantages of family planning for facilitating women's employment, particularly in the higher paying formal sector. Spaced or reduced childbearing and increased women's earnings can translate into improved quality of life for women such as improved nutritional status, household labor-saving devices, and improved child nutrition and physical and mental development.
- 2 Currently, most women who work outside the home are confined to low paying jobs with no benefits. Women would benefit from policies and programs that improve women's access to technical training and higher paying formal sector work.

- 3 Women's multiple work burdens and time constraints support the need for women-centered health care that can provide a range of services in central locations at times convenient for women
- 4 Given the increased number of women in the workforce, it should be cost-effective to provide family planning and reproductive health information and services in the workplace

We hope that women's advocates will be able to use these findings in their work on legislation and policies that promote gender equality in the workplace. They could also be used to educate youth and adults concerning gender roles such as task sharing in the household, especially when women are working for pay.