

The Puerto Rico Fertility and Family Planning Assessment (PRFFPA) was conducted in 1982 by the Puerto Rico Department of Health and the University of Puerto Rico, School of Public Health, with technical assistance from the Division of Reproductive Health, Center for Health Promotion and Education, Centers for Disease Control. Financial support for the project was provided by the National Institute of Child Health and Human Development, the Bureau of Community Health Services, and the Centers for Disease Control.

The objectives of the PRFFPA study were (1) to provide family planning program information to the health department of Puerto Rico about fertility and contraceptive use at the health region level; and (2) to gather retrospective life history data on fertility, marriage, migration, contraceptive use, education, and employment from reproductive age women, which could be used in a wide range of studies concerning the determinants and consequences of various demographic events.

The purpose of this analysis is threefold: (1) Examine the internal consistency of data from the household questionnaire and the individual questionnaire of the PRFFPA by age and marital status. (2) Examine the internal consistency of the marriage and birth histories data from the individual questionnaire of the PRFFPA. (3) Compare the data from the PRFFPA with data from external sources (vital statistics, census, and other surveys) in regard to age, marital status, fertility, and contraceptive use.

The PRFFPA consisted of a two-stage disproportionate stratified-cluster sample that was representative of the entire island of Puerto Rico. Data from the 1980 U.S. census in Puerto Rico were used in selecting the sample. The fieldwork for the study was carried out from September to December 1982.

The sample included 150 primary sample units, each consisting of 30 inhabitable housing units, for a total of 4,500 households. The household questionnaire (designated HQ for the remainder of this report) was used to identify all women 15-49 years of age living in each household. Each woman 15-49 years of age was eligible for an indepth fertility and family planning interview using the individual questionnaire (designated IQ for the remainder of this report). In the 4,500 households, 3,493 eligible women were identified, and 3,175 of the women completed detailed IQs (91 percent completion rate). The IQs were weighted to adjust for (1) nonresponse at the household and individual levels; and (2) poststratification adjustments for age and residence (SMSA/NonSMSA) relative to the 1980 census distributions.

## ASSESSMENT OF QUALITY OF DATA

### AGE

The age distributions from the HQ and IQ of the PRFFPA have been analyzed for age heaping (i.e., digit preference) and age misreporting. In the HQ, age at last birthday was recorded for each household member. In the IQ, each respondent was asked month and year of birth from which current age was calculated.

The percentage distribution, by single years of age, of females in the HQ compared with the distribution for females according to the 1980 census shows very little age heaping. Myers' Blended Index value for the census was 0.9 compared with 4.6 for the HQ.

In Table 1, we examine the consistency of age reported in the HQ and IQ in terms of years and in 5-year age groups. In total, 78 percent of respondents have the same reported age in both the HQ and IQ, and 95 percent have reported ages within the same 5-year age groups. The percentage of inconsistent reports increases only slightly across the age groups--by age 45-49, 71 percent have the same reported age in the HQ and IQ, and 94 percent are in the same 5-year age group.

TABLE 1  
 Percent Age Reported in Individual Questionnaire Differs from Age Reported in Household Questionnaire by Age Reported in Individual Questionnaire, 1982 Puerto Rico Fertility and Family Planning Assessment

Difference* in years	Age From Individual Questionnaire							
	Total	14-19	20-24	25-29	30-34	35-39	40-44	45-49
-3 or more	1.4	0.2	0.4	0.6	1.0	2.4	2.9	2.9
-1 and -2	11.9	5.6	11.6	12.2	12.1	15.0	17.0	13.4
0	78.4	90.0	81.4	78.2	76.9	74.3	68.2	71.2
1 and 2	7.6	3.8	6.1	8.1	8.9	7.1	11.0	12.1
3 and more	0.7	0.5	0.6	0.6	0.5	1.2	1.0	0.3

in 5 years Age Groups	Age From Individual Questionnaire							
	Total	14-19	20-24	25-29	30-34	35-39	40-44	45-49
-3 or more	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.0
-1 or -2	3.0	0.0	2.5	3.9	3.2	5.0	3.4	4.8
0	95.1	98.5	95.0	94.4	94.3	93.8	92.4	94.2
1 or 2	1.7	1.2	1.5	1.7	2.5	1.2	3.9	0.0
3 or more	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0

(3175) (611) (528) (482) (438) (420) (383) (313)

n=unweighted numbers  
 \*Difference=Age Household Questionnaire - Age Individual Questionnaire

### MARRIAGE HISTORY

The HQ provides information on current marital status for each member of the household. In the IQ, a complete marital history was obtained for the respondent, including data on date of each union, type of union, and date dissolved (where applicable). Table 2 shows the percentage with consistent reporting of marital status in the HQ and IQ.

TABLE 2  
 Percentage Reporting Marital Status Consistently in Individual and Household Questionnaires, by Marital Status Categories, 1982 Puerto Rico Fertility and Family Planning Assessment

Marital Status	Percent Reporting Consistently*
Legally married	96.5
Consensual union	95.9
Separated	96.4
Widowed	87.8
Divorced	87.0
Single	99.3

\*Consistency is relative to reporting in individual Questionnaire

As expected, the percentages for "consensual union" and "separated" are the most inconsistent, and those for the legally married and the single are the most consistent. This is probably because for some of the HQs the informant was not the respondent (i.e., interview was by proxy).

Using data on dates of marriages in the IQ, we can reconstruct the percentage ever married by age at the reference time for past census dates. Percentages ever married for census dates (1970 and 1980) are compared to the PRFFPA data. In 1970 and 1980, the difference is largely a trade-off between "consensual union" and "single". The PRFFPA is more likely to indicate consensual union while the census shows single status. This difference may reflect success in gathering information on marital status from a number of detailed questions in a life history format (i.e., the PRFFPA) rather than from a single question (i.e., the census). Florez and Goldman (1980) came to a similar conclusion when analyzing their Colombia data.

### BIRTH HISTORY

The PRFFPA IQ, obtained complete fertility histories. We will follow a three-part sequence in evaluating the quality of birth history data in the PRFFPA: (1) examination of omissions of live births; (2) examination of displacement of dates of births; and (3) comparison of estimates of fertility rates and levels between the PRFFPA and external data sources. The data quality tests suggested by Goldman (1984) for WFS surveys are used as the framework for our evaluation.

#### Omission of Live Births

One check for omissions involves the pattern of mean parity across age of the woman, since we expect parity to increase with age. Table 3 shows that in the PRFFPA data, in the aggregate and by residence, the expected pattern holds. This pattern of mean parity can also be compared to patterns in external sources as a check for undercounts of births. Our results show little difference in the mean parity from the PRFFPA (reconstructed to the date of the census) and the 1980 census results even when disaggregated by residence and age.

TABLE 3

Comparison of Mean Number of Children Ever Born by Age of Woman and Residence, 1982 Puerto Rico Fertility and Family Planning Assessment (PRFFPA) and 1980 Census

Source/Year	Total			SMSA			Non-SMSA		
	15-24	25-34	35-44	15-24	25-34	35-44	15-24	25-34	35-44
PRFFPA (1982)	0.4	2.0	3.0	0.3	1.8	2.9	0.6	2.2	3.3
PRFFPA, reconstructed to 1980	0.3	2.1	3.2	0.4	1.9	3.0	0.6	2.4	3.3
Census (1980)	0.3	2.1	3.2	0.4	2.0	3.0	0.5	2.3	3.6

### Displacement of Dates of Birth

Older respondents frequently report their early births as occurring closer to the survey date than they actually occurred (i.e., at an older age). If fertility was actually constant, this type of displacement would yield a concentration of births 5 to 15 years ago, thus suggesting a current decline. If fertility was actually declining, this forward displacement would tend to exaggerate the amount of the decline (Potter 1977).

Table 4 shows cumulative fertility by age for the three oldest cohorts in the PRFFPA study. These results show only a minor amount of forward displacement at ages 15-19 where the fertility of the 45-49 cohort is lower than that of the 40-44 cohort. After the 15-19 age group, however, the fertility pattern is consistent, with the 45-49 cohort having the highest value and the 35-39 cohort the lowest.

TABLE 4

Cumulative Fertility by Age of Women for the Three Oldest Cohorts, 1982 Puerto Rico Fertility and Family Planning Assessment

Cohort	15-19	20-24	25-29	30-34	35-39	40-44	45-49
45-49	.16	1.12	2.42	3.18	3.56	3.72	3.72
40-44	.18	1.02	2.11	2.80	3.08	3.20	-
35-39	.13	.90	1.98	2.64	2.92	-	-

### Fertility Estimates

The total fertility rate (TFR) and age-specific fertility rates were computed from the PRFFPA and compared with the published estimates from the annual vital statistics reports. Two estimates of the TFR were made from the PRFFPA: (1) cohort-period estimate based on 5-year cohorts (defined by age at study) and 5-year periods (defined by years prior to interview), and (2) a summary of single-year measures of fertility for the years 1978-1981. Our results show the survey estimate is lower than the vital rate (2.5 vs. 2.7 respectively) by 7.4 percent.

Table 5 shows two other comparisons of the PRFFPA fertility estimates with estimates from the vital registry and the 1980 census. In section A of this table, the number of births by year are compared for the PRFFPA and the vital registry. For each year, the vital data show higher numbers of births than the PRFFPA, an overall difference of 8.0 percent. In section B the number of births from the vital registry for specific months is compared with the number of people reported by age (0-2 years) in the 1980 census. Again, the numbers in the vital reports are higher than the Census for each comparison. The difference increases over the age groups, which we would expect, given infant mortality and migration effects. However, the 3.6 percent difference for the year prior to the Census is not expected.

TABLE 5  
 Number of Births by Year Reported in Vital Reports,  
 1980 Census and 1982 Puerto Rico Fertility and Family  
 Planning Assessment (PRFFPA)

A. Vital Report vs PRFFPA					
Year	Number of Births		Difference	Percent	
	Vital	PRFFPA	Vital-PRFFPA	Difference	
1981	70,971	65,890	5081	7.2	
1980	72,583	68,466	4117	5.7	
1976	73,290	68,399	4891	6.7	
1978	74,324	65,256	9068	12.1	
Total	291,368	267,969	23,399	8.0	

  

B. Vital Report vs. 1980 Census						
Age	Time Date	Number of Births		Difference	Percent	
		Vital	Census	Vital-Census	Difference	
0	April 1979 to March 1980	74,380	71,709	2671	3.6	
1	April 1978 to March 1979	75,656	66,829	8827	9.3	
2	April 1977 to March 1978	75,389	68,172	7217	9.6	
	Total	225,425	206,710	18,715	7.5	

### CONTRACEPTIVE USE

Results from the PRFFPA IQ compared with those from earlier studies suggest that the overall level of contraceptive use changed little in Puerto Rico from 1968 through 1982 (i.e., 60 percent in 1968 to 64 percent in 1982). In separate studies, Presser (1980) and Vazquez and Morales (1981) concluded that contraceptive use in Puerto Rico was relatively stable from 1968 to 1976. Our results suggest this stability in the level of use extended into the 1980s. However, important method shifts have occurred. Sterilization has been the most prevalent method used in Puerto Rico since the 1960s, and our results suggest it is continuing to gain in popularity. At the same time, use of the pill appears to be declining.

### CONCLUSIONS

No major anomalies were found in the PRFFPA data. However, a few summary points can be made from our evaluation:

1. When using age of the respondent in analysis, it is more accurate to use age created from month and year of birth in the IQ than age as reported in the HQ.
2. Marital status is probably more accurately reported in the PRFFPA than in the 1980 census, especially for consensual unions. Also, as with point 1, marital status is more accurate in the IQ than in the HQ.

3. The birth history evaluation showed no major problems with omissions or date displacement of births. We did find the number of births reported in the PRFFPA was similar to the 1980 census counts; however, counts for both the PRFFPA and the 1980 census were lower than the counts in the annual vital reports. We suggest the vital reports included more births to nonresidents than their records indicate; thus, the annual number of births and the fertility for the residents of Puerto Rico reported in the vital statistics are too high.

4. Contraceptive use, as reported in the PRFFPA, is consistent with information from previous studies. Overall contraceptive use has been stable in Puerto Rico for the past 20 years (between 60-65 percent). Recent patterns suggest contraceptive sterilization (female and male) continued to be the most prevalent method used (with further increased use expected) while the use of the pill has declined.

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