**TABLE 1—Description of Study Group**

| Age (years) | Males | | | Females | | | Total |
|---|---|---|---|---|---|---|---|
| | Cafeteria A | Cafeteria B | Total | Cafeteria A | Cafeteria B | Total | |
| 25 and younger | 11 | 34 | 45 | 7 | 10 | 25 | 70 |
| 26–35 | 17 | 27 | 44 | 18 | 16 | 34 | 78 |
| 36–45 | 4 | 6 | 10 | 7 | 1 | 8 | 18 |
| 46–55 | 2 | 3 | 5 | 0 | 5 | 5 | 10 |
| 56 and older | 6 | 7 | 15 | 12 | 10 | 22 | 35 |
| Total | 40 | 78 | 117 | 44 | 50 | 94 | 211 |

*Discussion*

In this study, 19 of per cent participants salted food before tasting it. A potentially valuable area of education to reduce sodium consumption is the behavior of salting food before tasting. It is plausible that this type of salt use may be easier to change than salting after tasting because it is relatively independent of the taste of the food. However, it may be that, for some persons, the habit of salting before tasting developed after repeatedly finding food not salty enough for their taste. Although observation of only a single instance of salt use does not permit the conclusion that all salting before tasting is an habitual behavior, or that salting on one occasion is necessarily indicative of a regular pattern of behavior, this conclusion is supported by questionnaire responses that revealed a strong relationship between self-reported abstinence from use of table salt and actual behavior.

The finding that persons who salted their food before tasting it tended to be older and overweight suggests thepossibility that persons fitting this profile engage in an eating pattern that is driven by habit more than by preference.

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# Self-reported Pelvic Inflammatory Disease in the US: A Common Occurrence

SEVGI O. ARAL, PHD, WILLIAM D. MOSHER, PHD, AND WILLARD CATES, JR., MD, MPH

**Abstract:** Based on a nationally representative sample of American women of reproductive age, in 1982, one in seven reported having had pelvic inflammatory disease (PID). One in ten had received ambulatory care, and one in 25 were hospitalized for PID. A two-fold race differential was observed in self-reported history of PID. One in four Blacks compared to one in eight Whites reported having received treatment for this condition sometime in the past. The previous history of PID, especially in the older age groups, reflects the combined effect of secular trends in PID incidence and temporal changes in diagnostic and treatment practices. (*Am J Public Health* 1985; 75:1216–1218.)

*Introduction*

Pelvic inflammatory disease (PID) is the most important complication of sexually transmitted diseases (STD) in terms of morbidity, suffering, and economic loss. The term PID refers either to an acute or a chronic inflammation involving the upper female genital tract (endomyometrium, tubes, ovaries, and supporting structures). In the United States, PID accounts for more than 1-3/4 million consultations with private physicians each year.[1] Nearly 270,000 women are hospitalized annually with this condition[2]; moreover, a hysterectomy was performed on nearly one-fourth of women admitted with a principal diagnosis of PID.[3] The direct and indirect costs of PID were estimated at $1.25 billion per year during the 1970s,[4] and are substantially higher in the mid-1980s.

The United States does not have a national reporting system for PID. In this article, we present the first estimates of the cumulative incidence of PID derived from a nationally representative data base of self-reports and discuss the age, race, and marital status differentials in self-reported history of PID.

*Methods*

We obtained data for this analysis from the National Survey of Family Growth (NSFG) Cycle III conducted in 1982 by the National Center for Health Statistics. The NSFG

From the Center for Prevention Services, Division of Sexually Transmitted Diseases, CDC, Atlanta (Aral and Cates), and the National Center for Health Statistics, Hyattsville, MD (Mosher). Address reprint requests to Sevgi O. Aral, PhD, Center for Prevention Services, Division of Sexually Transmitted Diseases, Centers for Disease Control, DHHS, PHS, Atlanta, GA 30333. This paper, submitted to the Journal January 22, 1985, was revised and accepted for publication April 30, 1985.

**TABLE 1—Self-reported PID by Race, American Women Ages 15–44**

| Race | Per Cent Treated for PID | | |
|---|---|---|---|
| | Ambulatory | Hospitalized | Total |
| All Races | 9.8 | 4.1 | 14.0 |
| White | 8.8 | 3.7 | 12.6 |
| Black | 16.7 | 6.5 | 23.2 |

SOURCE: NCHS/NSFG III[6]

is a periodic survey of women of reproductive age designed to provide information on fertility, family planning, and maternal and child health.[5] The Cycle III survey was carried out with a multistage probability sample of 7,900 women between 15 and 44 years of age in the United States. The sample included 4,600 White and 3,200 Black women. Interview response rates were high ranging from 85 per cent among Black women between ages 25 and 34 to 77 per cent among White teenagers. Responses were higher among Blacks than Whites and higher among those ever married than among the never married.

The weight for each case was adjusted for the different sampling rates for Whites, Blacks, and teenagers, and further adjusted for nonresponse and adjusted to agree with independent control totals of women by age, marital status, and race provided by the US Bureau of the Census. These adjustments made it possible to make national estimates from the survey. All the numbers and per cents in the paper were weighted as described above and are national estimates.[6]

The NSFG Cycle III included two questions on PID. The respondent was first asked whether she had *ever* been treated in a doctor's office, clinic or emergency room for an infection in her fallopian tubes, womb, or ovaries. The diagnosis was further clarified by using the phrase ". . . also called a pelvic infection, pelvic inflammatory disease or PID." The respondent was next asked how many different times, if ever, she had been hospitalized for a pelvic infection.

Respondents who answered the first question in the affirmative were categorized as having had ambulatory PID; those who indicated they were hospitalized at least once for PID were categorized as having had hospitalized PID. Women who indicated that they had been treated in a doctor's office, clinic, or emergency room for PID *and* reported being hospitalized for PID were categorized as having had hospitalized PID.

## *Results*

Overall, in 1982, 14 per cent of reproductive-age American women reported that they had been treated at least once for PID (Table 1). While almost 10 per cent reported having received only ambulatory care, over 4 per cent reported one or more hospitalizations. The cumulative incidence of self-reported PID among Blacks is almost twice as high as that among Whites (23 per cent vs 13 per cent).

Self-reported PID increased with age (Table 2), peaking in the 30–34 year age group at 20 per cent. The peak age for ambulatory PID was 35–39. Formerly married women reported the highest cumulative incidence of PID (22 per cent), followed by currently married (17 per cent) and never married (6 per cent) women (Table 3).

Among those hospitalized for PID, the majority (66 per cent) were hospitalized only once (Table 4). However, a sizable minority (26 per cent) were hospitalized two or three times, and over 8 per cent reported four or more hospitalizations. The proportion of repeat hospitalizations for the condition was high among currently married women (36 per cent) and lower among the formerly married (32 per cent) and the never married (26 per cent).

## *Discussion*

Two important considerations affect the data. First, the level of PID is based on self-reports of women. Intentional non-reporting, incomplete recall, and unawareness of the diagnosis all constitute threats to the accuracy of such information. To the extent that these problems are differentially distributed across subgroups, our comparative findings are also subject to error. For example, we might expect incomplete recall to be a more important bias among older age groups than among younger women. Nevertheless, our findings agree with data from other sources that are not based on patient reporting.[1–3]

Second, our data reflect only that percentage of PID which was diagnosed and treated by medical personnel and acknowledged by the women. Investigations of tubal factor infertility[7–9] imply that more than half of those pelvic infections serious enough to involve tubal obstruction are not perceived as PID by the women. Conversely, up to one-third of diagnoses presumed to be PID are eventually found to be other conditions.[10] While these two factors may offset each other, we believe our use of self-reports probably underestimates the true magnitude of PID.

Our findings of the cumulative incidence of self-reported PID agree with other estimates of the magnitude of the condition. For example, the annual incidence of PID in Sweden is estimated to be 1 per cent among women between 15 and 34 years of age.[10] In the NSFG Cycle III, the cumulative incidence for 30–34 year old women was 20 per cent. Moreover, the ratio of ambulatory to hospitalized PID agreed with data from private physicians[1] and hospitalized diagnoses[2] and were consistent across age-race groups. This ratio is considerably higher among teenagers than among older women, perhaps reflecting a lower threshold by physicians for hospitalizing younger women with PID.[11]

The significant race differential observed in both hospitalized and ambulatory PID is consistent with the different prevalence rates of such STD as *N. gonorrhoeae* and *Chlamydia trachomatis* among these groups.[12] It may also reflect two other factors: 1) differences in health care seeking behaviors of the two racial groups* which place Black women at higher risk for developing PID; and 2) a tendency of clinicians to presume, and thus more readily diagnose, PID among Blacks than among Whites.

The race differential is somewhat greater below age 20 and above age 35 than it is among 20 to 35 year olds. This, we believe, is the cumulative result of two distinct race differentials in sexual behavior. Among teenagers the difference is due to the somewhat later age of initiation of sexual activity among Whites.[13] Among 20 to 35 year olds, the smaller race differential compared to older women results from the lag between the sexual revolution of the 1960s among Blacks and the sexual revolution of the 1970s among Whites.[14]

*Rice DP: Health data on Blacks in America. Paper presented at the Atlanta University Center November 19, 1979.

**TABLE 2—Self-reported PID by Age, American Women 15–44**

| Race | Per Cent Treated for PID | | | | | |
|---|---|---|---|---|---|---|
| | 15–19 | 20–24 | 25–29 | 30–34 | 35–39 | 40–44 |
| All Races | 2.8 | 12.5 | 14.7 | 20.0 | 18.2 | 17.9 |
| White | 2.4 | 11.2 | 13.1 | 18.0 | 16.3 | 16.0 |
| Black | 5.1 | 20.6 | 25.5 | 32.7 | 32.8 | 32.4 |

SOURCE: NCHS/NSFG III[6]

**TABLE 3—Self-reported PID by Marital Status, American Women Ages 15–44**

| Race | Per Cent Treated for PID | | | |
|---|---|---|---|---|
| | Currently Married | Formerly Married | Never Married | Total |
| All Races | 17.2 | 21.7 | 6.4 | 14.0 |
| White | 16.4 | 17.6 | 4.3 | 12.6 |
| Black | 27.6 | 37.2 | 15.4 | 23.2 |

SOURCE: NCHS/NSFG III

We were surprised that the cumulative incidence of self-reported PID does not increase continuously with age. Two possible explanations could account for this unexpected finding: 1) recall of past PID episodes is probably less complete among older women; and 2) cumulative PID experience of older women, especially Whites, reflects the lower period rates of PID in the pre-sexual revolution era. The different age patterns of cumulative PID incidence among Whites and Blacks in the older age groups supports the second explanation. After age 35, self-reported PID decreases among Whites and remains constant among Blacks.

Sociodemographic factors such as marital status are indicators of sexual behavior that determine the risks of a woman's developing PID. Previous analyses indicate that separated and divorced women are at higher risk for PID than married women of similar age.[2,3] Our findings also show a similar pattern, with the highest proportion of PID occurring among the formerly married and the lowest among the never married.

In conclusion, our findings underline the high cumulative incidence of PID among American women of reproductive age. In light of the seriousness of such PID sequelae as ectopic pregnancy and infertility, both in terms of human suffering and public health costs, a high priority needs to be assigned to the prevention and treatment of this condition.

**TABLE 4—Number of Hospitalizations Reported by American Women 15–44 by Age**

| Number of Hospitalizations | Age | | | |
|---|---|---|---|---|
| | 15–24 | 25–34 | 35–44 | Total |
| 1 | 69.1 | 68.0 | 62.1 | 66.3 |
| 2–3 | 22.1 | 26.8 | 25.8 | 25.6 |
| 4+ | 8.8 | 5.1 | 12.1 | 8.1 |

SOURCE: NCHS/NSFG III[6]

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## Words from a Famous Canadian Physician

To study the phenomenon of disease without books is to sail an uncharted sea; while to study books without patients is not to go to sea at all.

—Sir William Osler
(1849–1919)