Knowledge of FAS and the Risks of Heavy Drinking During Pregnancy, 1985 and 1990

MARY C. DUFOR, M.D., M.P.H.; GERALD D. WILLIAMS, D.ED.; KAREN E. CAMPBELL, M.S.; and SHERRIE S. AITKEN, PH.D.

Reducing the incidence of FAS to no more than 0.12 per 1,000 live births is a stated objective of the national agenda in Healthy People 2000. One step toward attaining this is by ensuring that all prospective mothers know what FAS is. Knowledge of FAS was elicited among respondents in two health surveys to determine how much women and men know about the risks of drinking during pregnancy, how knowledge levels have changed over time, and what the implications of these findings are with regard to reducing the level of FAS among newborns.

This Epidemiologic Bulletin examines changes in respondents' attitudes toward the risks of heavy drinking during pregnancy, their awareness of fetal alcohol syndrome (FAS), and their knowledge of what FAS is. Although the respondents are women and men ages 18 to 44 years, the detailed analyses presented here focus on women only. Data were extracted from the Health Promotion and Disease Prevention (HPDP) supplements of both the 1985 and the 1990 National Health Interview Survey (NHIS).

BACKGROUND

One of the important contributions of biomedical research in the past century is the demonstration that personal lifestyle choices make a significant difference in the measure of health and quality of life. Accordingly, a national agenda aimed at considerably reducing preventable death and disability and enhancing quality of life by the year 2000 has been initiated. Healthy People 2000 (U.S. Department of Health and Human Services 1991) is a substantial effort involving health professionals and citizens, public agencies, and private organizations from all over the United States. Work on the objectives began in 1987 with the creation of a consortium that now includes nearly 300 national membership organizations as well as all State health departments.

More than 300 specific objectives in 22 priority areas were identified in Healthy People 2000 as goals targeted for achievement by the year 2000. One of these objectives is to reduce the incidence of FAS to no more than 0.12 per 1,000 live births. A step toward attaining this level would be to ensure that all prospective mothers know what FAS is. Although increased knowledge and awareness do not necessarily lead to changes in behavior, it is unlikely that changes such as decreasing or eliminating alcohol consumption during pregnancy will occur in the absence of knowledge of the risks of not doing so. Therefore, three important questions have to be addressed: How much do women in the United States today know about the risks to the fetus that are associated with alcohol consumption during pregnancy, particularly FAS? How have knowledge levels of FAS changed over time? What are the implications of such findings with regard to achieving the Healthy People 2000 goal for FAS?

The purpose of this study is threefold. First, it will examine changes since 1985 in the percentage of men and women ages 18 to 44 years who believe that heavy drinking during pregnancy increases the chances of miscarriage, mental retardation, alcohol-related birth defects, and other disabilities.
low birth weight, and birth defects; who have heard of FAS; and who can correctly describe FAS. Second, it will examine whether differences in these areas of belief, awareness, and knowledge exist among all women, current drinkers, and risk drinkers. Third, it will examine whether differences exist among demographic subgroups in the population of women of childbearing age.

METHODS

Sources of Data

Data for this study were derived from HPDP supplements in the 1985 and the 1990 NHIS. These questionnaires were first developed to monitor progress on national health objectives for the year 1990 and, later, for the year 2000. In the section involving risks of heavy drinking during pregnancy, awareness of FAS, and knowledge of FAS, survey respondents between the ages of 18 and 44 years were asked a series of questions about their agreement as to whether heavy drinking during pregnancy increases the chances of miscarriage, mental retardation, low birth weight, and birth defects. Heavy drinking was respondent defined; that is, each respondent used his or her own criteria of heavy drinking. Thus, different respondents may have interpreted the questions in many different ways.

Respondents were asked to indicate whether heavy drinking during pregnancy “definitely increases,” “probably increases,” “probably does not increase,” or “definitely does not increase” the chances of these complications. A response of “don’t know” also was valid. The responses “definitely increases” or “probably increases” were collapsed to represent agreement.

These same respondents were then asked if they had ever heard of FAS. Those who replied affirmatively were asked to select a response that best described FAS. The choices were a baby that is “born drunk,” “addicted to alcohol,” or “born with certain birth defects.” (“Born with certain defects” is the correct response.)

Respondent Categories

Respondents were grouped into several categories, with “all” representing the total U.S. noninstitutionalized population ages 18 to 44 years. “Abstainers” were defined as persons who have had fewer than 12 drinks in any 1 year. “Former drinkers” were defined as persons who have had at least 12 drinks in 1 or more years previously but no drinks in the past year. “Current drinkers” were defined as persons who have had at least 12 drinks per year previously and at least 1 drink in the past year. “Risk drinkers” were defined as persons who drank at levels higher than the levels of moderate drinking suggested in the Dietary Guidelines for Americans (USDA/USDHHS 1990).

For women, risk drinking was defined as average alcohol consumption of more than one drink per day. For men, risk drinking was defined as average alcohol consumption of more than two drinks per day.

Analyses and Tests of Differences

Tests of differences in proportions between response categories in the 1985 and the 1990 HPDP supplements were made by comparing 95 percent confidence intervals; differences were considered significant when the 95-percent confidence intervals did not overlap. Standard errors used to construct the confidence intervals were based on estimates from SESUDAAN, a computer program that estimates standard errors and takes into account complex sampling designs such as those of the NHIS (Shah 1981). NHIS responses were weighted to be representative of the 1985 and the 1990 U.S. population.

The items selected for analysis from the HPDP supplements fall into dimensions of beliefs, awareness, and knowledge. Responses to items related to risks of heavy drinking during pregnancy essentially represent beliefs or attitudes about heavy drinking. Responses to items related to the respondents having heard of

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Table 1 Sample Sizes, Population Estimates, and Prevalence Estimates of Selected Drinking Categories for Women and Men Ages 18 to 44 Years, 1985 and 1990

| Category         | Sample Size | Population Estimate1 | Prevalence Estimate (%) |
|------------------|-------------|----------------------|-------------------------|
|                  | 1985        | 1990                 | 1985        | 1990                 | 1985 | 1990 |
| Women            |             |                      |                      |                       |      |     |
| All respondents  | 10,578      | 13,055               | 50,596                | 53,541               | —    | —    |
| Abstainer        | 3,155       | 4,387                | 16,083                | 19,035               | 32   | 36   |
| Former drinker   | 443         | 788                  | 2,084                 | 3,025                | 4    | 6    |
| Current drinker  | 6,813       | 7,752                | 31,951                | 30,866               | 64   | 58   |
| Risk drinker*    | 853         | 813                  | 3,935                 | 2,929                | 12   | 10   |
| Men              |             |                      |                      |                       |      |     |
| All respondents  | 8,340       | 9,973                | 48,451                | 51,541               | —    | —    |
| Abstainer        | 943         | 1,402                | 6,098                 | 8,090                | 13   | 16   |
| Former drinker   | 390         | 678                  | 2,259                 | 3,520                | 5    | 7    |
| Current drinker  | 6,887       | 7,760                | 39,131                | 39,194               | 82   | 77   |
| Risk drinker*    | 1,048       | 975                  | 5,736                 | 4,702                | 15   | 12   |

1 In thousands. Abstainer: fewer than 12 drinks in any 1 year. Former drinker: 12 drinks or more a year previously, but no drinks in the past year. Current drinker: 12 or more drinks a year previously and at least 1 drink in the past year. Risk drinker: average of more than one drink a day (women); average of more than two drinks a day (men).

2 Subgroup of current drinkers.

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*A confidence interval is a range of values that carries a specified probability of including a parameter, such as a percentage estimate. With a 95-percent confidence interval, one is confident that—95 times out of 100—the “true” value will be within the range of values. When the 95-percent confidence intervals of two like measures do not overlap, the measures are considered to be significantly (p < 0.05) different.

Vol. 18, No. 1, 1994  87
Table 2 Knowledge of Health Risks of Heavy Drinking and Fetal Alcohol Syndrome (FAS), Women and Men Ages 18 to 44 Years, 1985 and 1990

| Health Risk                  | All (%) 1985 | All (%) 1990 | Abstainer (%) 1985 | Abstainer (%) 1990 | Former Drinker (%) 1985 | Former Drinker (%) 1990 | Current Drinker (%) 1985 | Current Drinker (%) 1990 | Risk Drinker1 (%) 1985 | Risk Drinker1 (%) 1990 |
|------------------------------|--------------|--------------|--------------------|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Women                        |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| Agree that heavy drinking increases the risk of: |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| miscarriage                 | 87           | 89           | 87                 | 88                | 87                     | 90                     | 89                     | 92†                    | 87                     | 91                     |
| mental retardation          | 87           | 90           | 86                 | 89                | 89                     | 91                     | 88                     | 92†                    | 87                     | 91                     |
| low birth weight            | 88           | 91           | 88                 | 90                | 90                     | 91                     | 90                     | 92†                    | 88                     | 93†                    |
| birth defects                | 88           | 92           | 87                 | 91                | 90                     | 90                     | 89                     | 94†                    | 88                     | 92                     |
| Yes, heard of FAS           | 62           | 73†          | 52                 | 65†               | 67                     | 78†                    | 67†                    | 77†                    | 66                     | 76†                    |
| FAS description: child born2 |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| drunk                       | 3            | 4            | 4                  | 5                 | 3                      | 3                      | 3                      | 4                      | 3                      | 3                      |
| addicted to alcohol         | 72           | 58           | 72                 | 60                | 73                     | 54†                    | 71                     | 57†                    | 69                     | 61                     |
| with certain birth defects   | 25           | 39           | 24                 | 36                | 24                     | 43†                    | 26                     | 40†                    | 28                     | 36                     |
| Men                          |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| Agree that heavy drinking increases the risk of: |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| miscarriage                 | 82           | 82           | 81                 | 77†               | 87                     | 82                     | 84                     | 84                     | 80                     | 81                     |
| mental retardation          | 79           | 81           | 79                 | 78                | 87†                    | 81                     | 81                     | 83†                    | 79                     | 80                     |
| low birth weight            | 79           | 82           | 79                 | 78                | 82                     | 81                     | 80                     | 84†                    | 75                     | 79                     |
| birth defects                | 80           | 83           | 80                 | 80                | 86†                    | 82                     | 81                     | 85†                    | 79                     | 82                     |
| Yes, heard of FAS           | 49           | 55†          | 38†                | 44†               | 51                     | 56                     | 50                     | 57†                    | 47                     | 51                     |
| FAS description: child born2 |              |              |                    |                   |                        |                        |                        |                        |                       |                        |
| drunk                       | 3            | 4            | 4                  | 5                 | 3                      | 5                      | 3                      | 4                      | 2                      | 4                      |
| addicted to alcohol         | 73           | 60†          | 67                 | 59                | 78                     | 59†                    | 73                     | 60†                    | 75                     | 64†                    |
| with certain birth defects   | 24           | 36           | 29                 | 37                | 18                     | 37†                    | 24                     | 36†                    | 23                     | 32                     |

NOTE: Weighted data.
† Average of more than one drink a day (women); average of more than two drinks a day (men).
‡ Excludes respondents who have never heard of FAS.
§ Significantly different (p < 0.05) from 1985.
* Significantly different (p < 0.05) within year from all combined.

FAS represent awareness, perhaps in large part influenced by public education and the media. Responses to items related to the respondents’ ability to distinguish among three response alternatives and correctly identify FAS as a child born with certain birth defects represent some level of knowledge of FAS.

RESULTS

Sample and Overall Findings

Table 1 presents sample sizes, population estimates, and prevalence estimates (or percentage distributions) of all respondents, abstainer, former drinker, current drinker, and risk drinker groups for the population ages 18 to 44 years according to gender. Among this age group, 58 percent of women were current drinkers in 1990, which is significantly different from the 64 percent in 1985; 77 percent of men were current drinkers in 1990, which is significantly different from the 82 percent in 1985. In 1990, risk drinking was characteristic of 10 percent of current drinking women and 12 percent of current drinking men.

Table 2 presents findings among all women and men ages 18 to 44 years in 1985 and 1990 on beliefs about the risks of heavier drinking during pregnancy, their awareness of FAS, and their descriptions of FAS. Data also are presented for abstainers, former drinkers, current drinkers, and risk drinkers in this age group.

The vast majority (89 to 92 percent) of all women in 1990 believed that heavy drinking during pregnancy definitely or probably increases the chances of miscarriage, mental retardation, low birth weight, and birth defects. These beliefs are all significantly higher than those found in 1985 (87 to 88 percent). Also, a significantly higher percentage (73 vs. 62 percent) of women in 1990 had heard of FAS than in 1985. Although 25 percent of women of childbearing age who had heard of FAS in 1985 correctly described FAS as...
Table 3: Women Who Agree That Heavy Drinking During Pregnancy Increases Chances of Birth Defects According to Selected Demographic Characteristics, 1985 and 1990

| Category                | All (%) | Current Drinker1 (%) | Risk Drinker2 (%) |
|-------------------------|---------|----------------------|-------------------|
|                         | 1985    | 1990                | 1985 | 1990 |
| All Combined            | 88      | 92*                 | 89   | 94*  |
| Age                     |         |                      |      |      |
| 18–29 years             | 91†     | 93*                 | 93†  | 96*† |
| 30–44 years             | 85†     | 90*                 | 85†  | 93*  |
| Race                    |         |                      |      |      |
| White                   | 88      | 92*                 | 90   | 94*  |
| Black                   | 88      | 90                  | 88   | 93*  |
| Hispanic3               |         |                      |      |      |
| Yes                     | 81†     | 85†                 | 86   | 92   |
| No                      | 88      | 92*                 | 90   | 94*  |
| Education               |         |                      |      |      |
| Less than 12 years      | 83†     | 86†                 | 86   | 92*  |
| 12 years                | 88      | 92*                 | 89   | 94*  |
| More than 12 years      | 89      | 93*†                | 90   | 95*  |
| Family Income           |         |                      |      |      |
| Less than $20,000       | 89      | 90                  | 91   | 94*  |
| $20,000 to $34,999      | 88      | 93*                 | 90   | 95*  |
| $35,000 to $49,999      | 88      | 93*                 | 89   | 94*  |
| $50,000 and over        | 87      | 93*                 | 87   | 94*  |
| Employment Status       |         |                      |      |      |
| Employed                | 88      | 92*                 | 89   | 94*  |
| Other4                  | 88      | 90                  | 90   | 94*  |
| Marital Status          |         |                      |      |      |
| Married                 | 88      | 92*                 | 89   | 94*  |
| Divorced/separated      | 86      | 91*                 | 87   | 93   |
| Never married           | 89      | 92*                 | 91   | 95*  |
| Region                  |         |                      |      |      |
| Northeast               | 87      | 92*                 | 89   | 94*  |
| Midwest                 | 90†     | 93*                 | 91   | 94*  |
| South                   | 87      | 92*                 | 88   | 95*  |
| West                    | 86      | 89*†                | 89   | 93*  |

NOTE: Weighted data.

*12 or more drinks a year previously and at least 1 drink in the past year.
†Average of more than 1 drink per day.
Not mutually exclusive from race categories.
Other includes unemployed and not in the labor force.
Significantly (p < 0.05) different from 1985.
Significantly (p < 0.05) different within year from all combined.

a child born with certain birth defects, 39 percent correctly described FAS in 1990.

Many of the beliefs, awareness, and knowledge increases between 1985 and 1990 were shared among men between the ages of 18 and 44 years, yet a significantly lower percentage of men than women believed in the stated risks of heavier drinking during pregnancy, had heard of FAS, and could correctly describe the syndrome.

For both genders, a larger percentage of current drinkers compared with the general population were aware of the stated risks of heavy drinking and of FAS. Significant differences from the general population in the awareness of FAS also were found among most drinking categories. Abstainers were significantly less likely than the total population to have heard of FAS; former drinkers, current drinkers, and risk drinkers were significantly more likely than abstainers and the general population to have heard of
FAS. In being able to describe FAS, however, none of the percentage correct responses among the drinking groups were significantly different from the general population or from the other drinking groups.

**Detailed Differences by Demographic Characteristics**

Table 3 presents selected demographic findings on the percentage of women who agree that heavy drinking during pregnancy increases the chances of birth defects. This analysis attempts to determine whether the previously observed 1985 and 1990 increases in beliefs about the risks of birth defects from heavy drinking among all women ages 18 to 44 years also increase.

| Table 4 Women Who Have Heard of Fetal Alcohol Syndrome According to Selected Demographic Characteristics, 1985 and 1990 |
|---------------------------------------------------------------|
| **Category** | **All (%)** | **Current Drinker¹ (%)** | **Risk Drinker² (%)** |
|                | 1985 | 1990 | 1985 | 1990 | 1985 | 1990 |
| All Combined   | 62  | 73*  | 67  | 77*  | 66  | 76*  |
| Age            |      |      |      |      |      |      |
| 18–29 years    | 60  | 69*↑ | 65  | 74*↑ | 64  | 73   |
| 30–44 years    | 64  | 76*↑ | 69  | 80*↑ | 69  | 79*↑ |
| Race           |      |      |      |      |      |      |
| White          | 65*↑| 76*↑ | 69  | 79*  | 67  | 78*  |
| Black          | 48*↑| 59*↑ | 52*↑| 61*↑ | 53  | 54*↑ |
| Hispanic³      |      |      |      |      |      |      |
| Yes            | 37*↑| 52*↑ | 45*↑| 62*↑ | 43*↑| 67   |
| No             | 64  | 75*↑ | 68  | 78*  | 67  | 76*  |
| Education      |      |      |      |      |      |      |
| Less than 12 years | 39*↑| 53*↑ | 46*↑| 60*↑ | 50*↑| 60*↑ |
| 12 years       | 58*↑| 69*↑ | 62*↑| 72*↑ | 61  | 73   |
| More than 12 years | 75*↑| 83*↑ | 77*↑| 85*↑ | 77*↑| 82   |
| Family Income  |      |      |      |      |      |      |
| Less than $20,000 | 56*↑| 63*↑ | 62*↑| 70*↑ | 63  | 68   |
| $20,000 to $34,999 | 65  | 73*  | 69  | 76*  | 67  | 75   |
| $35,000 to $49,999 | 70*↑| 78*↑ | 72*↑| 81*↑ | 66  | 78   |
| $50,000 and over | 71*↑| 82*↑ | 72  | 84*↑ | 73  | 86*↑ |
| Employment Status |      |      |      |      |      |      |
| Employed       | 64  | 74*  | 68  | 78*  | 70  | 78*  |
| Other⁴         | 59  | 70*↑ | 66  | 76*  | 55  | 70*  |
| Marital Status |      |      |      |      |      |      |
| Married        | 65  | 76*↑ | 69  | 80*  | 68  | 79*  |
| Divorced/separated | 60  | 71*  | 65  | 75*  | 64  | 75   |
| Never married  | 55*↑| 67*↑ | 62*↑| 72*↑ | 64  | 73   |
| Region         |      |      |      |      |      |      |
| Northeast      | 61  | 70*  | 66  | 76*  | 60  | 77*  |
| Midwest        | 67*↑| 79*↑ | 70  | 82*↑ | 69  | 78   |
| South          | 59  | 72*  | 66  | 76*  | 66  | 76   |
| West           | 62  | 71*  | 66  | 75*  | 67  | 73   |

NOTE: Weighted data.
¹12 or more drinks a year previously and at least 1 drink in the past year.
²Average of more than 1 drink per day.
³Not mutually exclusive from race categories.
⁴Other includes unemployed and not in the labor force.
*Significantly (p < 0.05) different from 1985.
†Significantly (p < 0.05) different within year from all combined.
are characteristic of various demographic subgroups of women in this age group. For all women and current drinking women, changes between 1985 and 1990 were fairly consistent and significant across most of the demographic subgroups. The exceptions were the black, Hispanic, less than 12 years of education, less than $20,000 family income, unemployed or not in the labor force, and the divorced/separated categories, where increases were not significant.

Significant increases also were found among current drinking women compared with the general population of women, because current drinkers were more inclined to agree on the risks of heavier drinking during pregnancy in the first place. However, among women risk drinkers, significant differences across 1985 and 1990 were found only among women 30 to 44 years of age, women with family incomes of $50,000 and over, and women residing in the South. Compared

| Table 5 Women Who Correctly Describe Fetal Alcohol Syndrome According to Selected Demographic Characteristics, 1985 and 1990 |
|---|---|---|---|---|---|---|
| Category | All (%) | Current Drinker¹ (%) | Risk Drinker² (%) |
| | 1985 | 1990 | 1985 | 1990 | 1985 | 1990 |
| All Combined | 25 | 39* | 26 | 40* | 28 | 36 |
| Age | | | | | | |
| 18–29 years | 26 | 37* | 26 | 38* | 30 | 30 |
| 30–44 years | 24 | 40* | 25 | 41* | 25 | 41* |
| Race | | | | | | |
| White | 25 | 39* | 26 | 40* | 27 | 37 |
| Black | 26 | 33*† | 23 | 31† | 26 | † |
| Hispanic³ | Yes | 33† | 39 | 30 | 35 | † | † |
| No | 25 | 39* | 26 | 40* | 27 | 36 |
| Education | | | | | | |
| Less than 12 years | 28 | 35 | 25 | 31† | † | 41 |
| 12 years | 22 | 34*† | 23 | 34*† | 24 | 30 |
| More than 12 years | 27 | 43*† | 28 | 45*† | 33 | 39 |
| Family Income | | | | | | |
| Less than $20,000 | 25 | 35*† | 26 | 34*† | 31 | 31 |
| $20,000 to $34,999 | 24 | 37* | 24 | 40* | 20 | 43* |
| $35,000 to $49,999 | 24 | 39* | 26 | 41* | 25 | 39 |
| $50,000 and over | 25 | 43* | 25 | 43* | 36 | 33 |
| Employment Status | | | | | | |
| Employed | 24 | 38* | 25 | 39* | 28 | 33 |
| Other³ | 27 | 40* | 29 | 43* | 27 | 43 |
| Marital Status | | | | | | |
| Married | 25 | 39* | 27 | 41* | 27 | 41 |
| Divorced/separated | 22 | 37* | 20† | 36* | 17 | 34* |
| Never married | 26 | 38* | 26 | 38* | 32 | 28 |
| Region | | | | | | |
| Northeast | 25 | 39* | 27 | 41* | 29 | 30 |
| Midwest | 23 | 35* | 24 | 37* | 27 | 32 |
| South | 26 | 37* | 26 | 37* | 28 | 36 |
| West | 26 | 45*† | 28 | 46*† | 27 | 45 |

NOTE: Weighted data. Excludes respondents who have never heard of fetal alcohol syndrome.

*12 or more drinks a year previously and at least 1 drink in the past year.

¹Average of more than 1 drink per day.

²Not mutually exclusive from race categories.

³Other includes unemployed and not in the labor force.

*Significantly (p < 0.05) different from 1985.

†Significantly (p < 0.05) different within year from all combined.

‡Fewer than 15 respondents.
with all women combined, Hispanic women in 1985 and 1990 were less likely to agree that heavy drinking increases the chances of birth defects, as were women with less than 12 years of education.

Table 4 presents the percentage of women in selected demographic subgroups in 1985 and 1990 who reported that they had heard of FAS. A significant increase in the awareness of FAS between 1985 and 1990 was evident among all of the subgroups examined for both all women and current drinking women of childbearing age. However, among subgroups of risk drinkers, significant increases in awareness were found only among groups 30 to 44 years, white, non-Hispanic, employed or other status, married, and living in the Northeast.

Black women, Hispanic women, and women with family incomes of less than $20,000 per year were less likely than all women combined to have heard of FAS. On the other hand, women ages 30 to 44 years, living in the Midwest, and with more than 12 years of education were more likely to have heard of FAS than were all women combined.

Table 5 presents the percentage of all women, current drinkers, and risk drinkers who correctly chose the response that best described FAS, that is, a child born with certain birth defects. Significant increases between 1985 and 1990 in this knowledge generally were found within each of the demographic subgroups examined, except for risk drinkers.

The lack of many significant increases among risk drinkers in their knowledge of FAS between 1985 and 1990 could be attributed to low sample sizes in the subgroups. For risk drinkers, a larger percentage change would be necessary than for the other analytic groups to indicate statistical significance. However, some increases in the correct responses about what FAS is were found among women risk drinkers of childbearing age who were older (ages 30 to 44 years), had family incomes of $20,000 to $34,999, and were divorced or separated.

**DISCUSSION**

Increases since 1985 among women ages 18 to 44 years regarding their agreement on the risks of heavy drinking, their awareness of FAS, and their ability to correctly describe FAS are encouraging. The level of knowledge among these women regarding what FAS is, however, is still disturbing. Thirty-nine percent of women of childbearing age who had heard of FAS could correctly describe it in 1990. This means that only 29 percent of all women of childbearing age (whether they had heard of FAS or not) could correctly describe it. The figure for all women of childbearing age in 1985 was only 16 percent. Obviously, more prevention and education efforts are needed to inform women of the dangers of heavy drinking and of any drinking during pregnancy.

The changes between 1985 and 1990 in awareness and knowledge of the dangers of alcohol use and birth defects cannot be attributed to alcoholic beverage warning labels to any great extent, because warning labels were not present on most alcoholic products for sale until 1990 (Hankin et al. 1993) (see the article by Hankin, pp. 62–66). Data in these surveys show that most women of childbearing age agree that heavy drinking increases the risk of mental retardation and birth defects. However, less than a third can correctly describe FAS. While this may be a contradiction, it seems advisable for prevention to focus on knowledge as opposed to attitudes, where FAS severity may be underestimated. Also, it is problematic whether there is any real relevance to being aware of FAS if most of these women of childbearing age cannot correctly identify what FAS is. Perhaps prevention efforts should focus on the specific birth defects characteristic of FAS.

The number of women and men who believe that FAS is a child born addicted to alcohol may be related to the public attention given to crack babies. Whether such women and men simply believe that a newborn child can “dry out” or recover with abstinence, and thus sustain no lasting harmful effects, is unknown.

Evidence of increased risk of FAS at low levels of alcohol consumption has not been firmly established, but even moderate levels of alcohol intake during pregnancy have been associated with developmental and other problems (Walpole et al. 1990; Waterson and Murray-Lyon 1990; also see the articles by Day and Richardson, pp. 42–48, and Jacobson and Jacobson, pp. 30–36). Since 1983, the American Medical Association has recommended that physicians advise women against any drinking during pregnancy because of the potential dangers of alcohol consumption to the fetus (Waterson and Murray-Lyon 1990).

Those groups who are less likely to believe in the risks of heavier drinking, to be aware of FAS, or to correctly define it may need special targeting for general prevention efforts and specific intervention efforts with women who are pregnant. Results from this study and other studies (Serdula et al. 1991) suggest that such groups often are drinkers who are young (under age 30), black, Hispanic, or with limited years of education—groups already at risk for poor pregnancy outcomes, problems often compounded by socioeconomic status. Weiner and colleagues (1989) suggest that primary prevention efforts and direct interventions that focus on changing drinking behavior have an excellent chance of succeeding, especially when delivered by physicians or other health care providers.

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