



Section

1

BACKGROUND AND PURPOSE OF STUDY

1.1 Background

In 1992, the United States Public Health Service (PHS) issued the following recommendation regarding the consumption of folic acid and subsequent prevention of certain birth defects:

All women of childbearing age in the United States who are capable of becoming pregnant should consume 0.4 mg. of folic acid per day for the purpose of reducing their risk of having a pregnancy affected with spina bifida or other NTDs [neural tube defects] (Centers for Disease Control and Prevention [CDC], 1992).

The recommendation was issued after years of accumulated scientific evidence showed that consumption of folic acid during the periconceptional period can decrease the number of pregnancies affected by neural tube defects (NTDs). Folic acid is necessary during the periconceptual period because the developing embryo requires this B vitamin to form the neural tube. This tube develops approximately two to four weeks after conception, often before a woman knows she is pregnant. If sufficient folic acid is unavailable to the embryo, neural tube defects such as spina bifida and anencephaly can occur. Spina bifida and anencephaly are very serious birth defects that affect the pregnancies of approximately 4,000 women each year in the United States alone. Babies born with spina bifida have an opening along their spine, through which the spinal tissue protrudes. These babies often need to have many surgical treatments when they are young, and most grow into adulthood



with varying degrees of disability, including paralysis of the feet and legs, and lack of control of the bowel and bladder. Mental retardation sometimes occurs, and learning disabilities are common. Lifetime costs for medical, developmental, and other services for children born with spina bifida are estimated to be about \$500 million annually. Anencephaly is a fatal condition in which most or all of a baby's brain and skull are missing. Babies with anencephaly are either stillborn or die within a very short time of birth.

Various studies have shown that the presence of folic acid can help prevent 50-70 percent of neural tube defects. The results of the British Medical Research Council (MRC) Randomized Control Trial (RCT) published in July 1991 demonstrated a 71 percent reduction in the risk of NTDs in pregnancies among women who received 4 mg of folic acid daily and who had a previous NTD-affected pregnancy (cited in CDC, 1991). Following the release of those findings, the Birth Defects and Developmental Disabilities Division (BDDD) at the Centers for Disease Control and Prevention (CDC) issued an interim policy recommendation stating that women who had had a previous NTD-affected pregnancy should take 4 mg of folic acid daily when planning a subsequent pregnancy (CDC, 1991). In 1992, findings from Czeizel's Hungarian RCT demonstrated complete protection in pregnancies of women taking 800 micrograms (0.8 mg) of folic acid who had not had a previous NTD-affected pregnancy (as cited in CDC, 1992).

As a result of the MRC and Hungarian findings, the PHS published "Recommendations for the Use of Folic Acid to Reduce the Number of Cases of Spina Bifida and Other Neural Tube Defects" (CDC, 1992). Through this document, PHS recommended the consumption of 0.4 mg of folic acid per day for all women capable of becoming pregnant. The recommendation was directed towards all women of



childbearing age because half of U.S. pregnancies are unplanned, and because neural tube defects occur very early in pregnancy before most women know they are pregnant.

Recent research has also shown that food-derived folate is not as bioavailable as synthetic folic acid, the chemical that is added to supplements and fortified foods. Cuskelly et al. recently showed that a supplement or serving of cereal containing 400 micrograms (μg) of folic acid increased levels of blood folate, while 400 μg of folate derived from natural food sources did not have the same effect (as cited in Oakley, 1998). In addition, Daly et al. found that at least 400 μg . of folic acid plus any usual diet sources of folate are necessary to reach blood folate levels sufficient enough to aid in the prevention of NTDs (as cited in Oakley, 1998). As Dr. Godfrey Oakley (CDC) stated in the *New England Journal of Medicine*, “Anyone who chooses to counsel a woman to consume 400 μg . of food-derived folate rather than 400 μg . of supplemental folic acid will be recommending a strategy that has not been proved to prevent birth defects” (Oakley, 1998). A recently released Institute of Medicine (IOM) Report entitled *Dietary Reference Intakes: Folate, Other B Vitamins, and Choline*, confirmed this recommendation by stating that “the amount and form of folate demonstrated to minimize NTD risk is 400 μg . of synthetic folic acid/day in addition to food folate” (IOM, 1998).

In conjunction with this information, the Food and Drug Administration (FDA) issued an order that folic acid be added to specific flour, breads, and other grains (such as most enriched breads, flours, corn meals, rice, pastas, etc.) by January 1998 (FDA, 1996). These foods were selected for fortification because they are staple products for most of the U.S. population, and because they have a long history of being successful vehicles for improving nutrition to reduce the risk of classic nutrient deficiency diseases. Furthermore, the FDA also ruled that



manufacturers of foods with a certain level of folic acid can

1.2 CDC's Planned Communication Effort

claim on the product that folic acid can prevent NTDs.

While fortification is an opportunity to provide women with folic acid, it is estimated that the fortification levels will only provide the average woman with approximately an extra 100 µg of folic acid per day (Oakley, 1998). As a result, women will need to find other ways to achieve the daily recommended amount of folic acid. There is concern that because of the news about food fortification, women will perceive that they do not need to increase their folic acid intake through other means, such as supplements. In other words, women of childbearing age must be educated that their typical diet, even with fortification of enriched flour products, will not necessarily provide folic acid in amounts sufficient to prevent NTDs. The challenge then, remains to communicate with women in a manner that informs them about the usefulness of folic acid to prevent NTDs and motivates them to change their behavior, via taking folic acid supplements or multivitamins containing folic acid daily, adding foods fortified with folic acid to their diet, and increasing foods in their diet that are naturally rich in folate.

BDDD participates in birth defects surveillance, prevention, and intervention programs through cooperative agreements with individual states. CDC has undertaken its own communication measures, producing and sponsoring some educational materials as well as creating a clearinghouse for the collection and sharing of state and local folic acid educational endeavors. CDC has also worked closely with the National March of Dimes Birth Defects Foundation and the Spina Bifida Association of America on public education activities for NTD prevention. BDDD's most recent effort in this area was to initiate a national health communication campaign in January 1999 to relay the PHS recommendation of folic acid to the American public. The broad-based national campaign includes education, demonstration, and evaluation projects with the ultimate goal being to increase from



25 to 50 percent the proportion of women consuming the PHS-recommended level of folic acid.

Although educational campaigns on the importance of folic acid have been undertaken in the past, surveys indicate that these programs have not sufficiently addressed folic acid knowledge and intake (behavior) deficits. The March of Dimes, for example, commissioned Gallup surveys in 1995 and in 1997, that revealed relatively low awareness levels of the PHS recommendation and of folic acid. Awareness of the PHS recommendation had increased between 1995 and 1997 (22 percent compared with 15 percent) and more women had heard or read about folic acid in 1997 than in 1995 (66percent compared with 52 percent). However, there was only a modest increase in reported folic acid consumption: 30 percent of nonpregnant women reported taking a multivitamin containing folic acid on a daily basis in 1997, compared with 25 percent in 1995 (March of Dimes Birth Defects Foundation, 1995; 1997).

Numerous folic acid educational materials have been developed, though few have been adequately pretested. For the most part, pretesting has been conducted in focus groups, but in some instances focus group feedback was not utilized to revise materials, and findings from these locales may not be generalizable to national audiences, whom BDDD targets. Furthermore, BDDD wants to develop a basic and consistent message that will be employed by diverse partners and programs to maximize the scope and channels for message delivery, and minimize message confusion among audiences.

The findings from the various surveys, polls, and focus groups discussed above highlight the need for additional educational efforts targeting knowledge levels and consumption of folic acid among women of childbearing age. The next section of this report discusses how this particular study aided in identifying additional educational efforts.



1.3 Purpose of Study

During March of 1998, 16 focus groups were held with women of childbearing age to help identify effective approaches to increasing knowledge and consumption of folic acid among this target audience. Focus groups are a method of conducting audience-centered health communication research, which is a basic tenet of social marketing. The national health communication campaign to be conducted in part by BDDD will be based on the science of social marketing, which seeks to increase the acceptability of a social cause or behavior by focusing on the knowledge of the target audience, their perceptions, and behaviors. Exploring this issue with the target audience helps to incorporate their sense of ‘reality’ into the educational effort and will guide the development of this national campaign. In other words, the campaign will incorporate the values, beliefs, and current behaviors of the target audience regarding folic acid, multivitamin use, the role of health care providers, and other relevant topics.

The primary target audiences for this campaign are women of childbearing age and professionals in the health care field who provide services to those women. While all women of reproductive age are at risk for having a pregnancy affected by NTDs, particular subgroups of women have been targeted for this campaign. These particular subgroups have been defined by the National Council on Folic Acid and BDDD and include the following groups of women:

- African-American, White, and Hispanic (both English-speaking and Spanish-speaking) women;
- Women between 18 and 35 years of age; and
- Women falling into lower and middle income brackets (less than \$50,000 annual household income), with emphasis given to women with annual household incomes less than \$30,000.



This report outlines the methods and results of the 16 focus groups that were conducted with these women at risk. These focus groups constitute the first stage in a multistage formative research effort that will inform the development of BDDD's national health communication campaign aimed at increasing the proportion of women who consume the PHS-recommended level of folic acid. Information to guide the development of this campaign will come from both quantitative and qualitative research methods. Information collected from qualitative methods will be collected in an iterative manner; that is, the target audience will provide information before, and feedback both during and after the national campaign has been implemented and conducted.

The stages of formative research to be conducted in designing this national health communication campaign include the following:

Exploratory research to help inform campaign development:

- 1) Analyses of existing data from market research and other research databases to form profiles of the target

audience. This includes data from the Healthstyles and Lifestyles survey databases, results from the March of Dimes telephone interview surveys, numerous focus group study findings, and data from a National Health Interview Survey.

- 2) Focus groups with women at risk to learn about their knowledge levels, attitudes, and behaviors surrounding folic acid and neural tube defects (the results of which are detailed in this report).
- 3) Focus groups with health care providers to obtain their advice on communicating the PHS recommendation to women of childbearing age and their perception of their own role in that process.
- 4) Informal discussions with individuals affected by Spina Bifida to gain their insight into developing the campaign.



Campaign pretesting to obtain reactions to proposed campaign concepts/messages:

1) Concept-testing focus groups with women of childbearing age to glean their reactions to concepts/messages that have

been developed from information learned in the exploratory focus groups.

2) Informal discussions with parents of children with neural tube defects to learn their reactions to developed concepts/messages.

This report details the methods and results of the 16 exploratory focus groups conducted with women of childbearing age to learn more about their knowledge levels, attitudes, and behaviors regarding folic acid and neural tube defects.



Section 2 METHOD

2.1 Overview of Focus Group Research

Focus group research is a qualitative method for gaining insight into participants' awareness, beliefs, motivations, and experiences related to a particular topic. In a focus group, a moderator facilitates an interactive discussion among 8 to 10 participants as they talk about selected topics relevant to the research effort. The moderator ensures that the group covers selected topics, that all group participants are heard, and that unanticipated relevant topics that emerge are explored. Focus groups yield a wealth of information about how participants view a particular topic, what language and tone they select to express that view, and how they influence each other's opinions and comments.

Successful focus group discussions depend in part on participants having some points of similarity among them. For example, they may all be the same gender, all have children at home, or all engage in vigorous physical activity. Having an obvious common ground facilitates group comfort level and openness. For example, one of the commonalities for the focus groups conducted for this study was that all participants were women of childbearing age (defined as ages 18 to 35 for this study since 85 percent or more of all pregnancies occur among women of this age). In addition, women were assigned to a group based on the common behavior of either taking vitamins and/or minerals sometimes, or not taking them at all (although none of the women were meeting the PHS recommendation).



Focus groups generate more in-depth information than can be learned using surveys and provide the opportunity for people to clarify or expand on their responses to questions. Characteristics of focus group participants usually reflect those of a larger population, although

findings are not statistically representative due to use of convenience samples and small sample sizes. A written summary of findings from a set of focus groups contains a synthesis of the findings from all groups, identifies general themes and patterns, and discusses any contrasts in responses from group to group. These findings can make a valuable contribution to planning effective communication programs by shedding light on the knowledge levels, attitudes, and behaviors of the target audience.

2.2 Participant Recruitment and Research Design

The focus groups conducted for this research study were held with particular subgroups of women at risk, as defined by the National Council on Folic Acid and BDDD:

- African-American, White, or Hispanic (both English-speaking and Spanish-speaking) women;
- Women between the ages of 18 and 35 years; and
- Women in lower to middle income brackets (less than \$50,000 annual household income), with emphasis given to women with annual household incomes less than \$30,000.

BDDD and Westat developed a series of screening instruments to ensure that participants would match the criteria of the target audience listed above (see Appendix A for the screeners used in each geographic location), as well as two additional criteria: vitamin¹ use and pregnancy intention. Table 1 displays the composition of the groups based on the recruitment criteria.

¹ Use of the term 'vitamin' throughout this report is meant to signify use of vitamins and/or minerals. Only one term, however, was chosen for use in this report for ease in reading the text.



Table 1. Composition of Focus Groups with Women at Risk

<i>Race/Ethnicity of Women</i>	<i>Pregnancy Intention</i>	<i>Vitamin Consumption Behavior</i>		<i>Totals</i>
		<i>None¹</i>	<i>Sometimes, But Not Daily²</i>	
African American/ White/English-speaking Hispanic	Intend pregnancy within 1 year	1 group	2 groups	3 groups
African American/ White/English-speaking Hispanic	Intend pregnancy in the future	2 groups	2 groups	4 groups
African American/ White/English-speaking Hispanic	Never intend pregnancy	2 groups	1 group	3 groups
Spanish-speaking Hispanic	N/A	2 groups	2 groups	4 groups
English-speaking Hispanic	N/A	1 group	1 group	2 groups
Totals		8 groups	8 groups	16 groups

1. **No vitamin use** was defined as not taking vitamins at all or taking a vitamin less than one day per week over the past three months.

2. **Some vitamin use** was defined as taking vitamins at least one day per week but less than six days per week, over the past three months.

As shown in Table 1, 10 focus groups were conducted with African-American, White, and Hispanic women in the same group. The remaining six groups were conducted with Hispanic women exclusively because studies have shown that Hispanic women in the United States have 1.5 to 3 times the risk of delivering babies with neural tube defects as non-Hispanic Whites (as cited in Shaw, Velie, & Wasserman, 1997). Four of these groups were conducted with predominantly Spanish-speaking Hispanic women; the remaining two groups were conducted with predominantly English-speaking Hispanic women.



Table 1 also shows that women in each discussion were grouped together based on vitamin consumption behavior, and/or pregnancy intention. These factors were chosen as the basis to segment women because research has shown that they are likely to determine knowledge, attitudes, and behaviors regarding folic acid and birth defects (Healthstyles, 1996).

Groups were segmented by respondents' stated pregnancy intention only for the mixed race groups with African-American, White, and English-speaking Hispanic women combined. Hispanic women participating in Hispanic-women only groups (both Spanish- and English-speaking groups) were not grouped according to pregnancy intention for several reasons. First, available funds for this phase of the project were limited, and not all methods of groups segmentation (e.g., takes vitamins or does not take vitamins, intends pregnancy in the future or never intends pregnancy, English-speaking or Spanish-speaking) could be conducted. Second, groups would be conducted in the language of the participants and vitamin consumption was the behavior of interest, so it was important to keep those variations in the study. Third, since extant research has shown that Hispanic women are less likely to say they will *never* get pregnant in the future in comparison to other women (Healthstyles, 1996, 1997), it was decided to not pursue segmentation according to pregnancy intention among Hispanic women. However, English-speaking Hispanic women were specifically recruited into the groups conducted with White and African-American women who said they never intended to get pregnant in the future. This method of segmentation may limit the generalizability of future messages for Hispanic women.

Professional focus group facilities in each of the scheduled geographic locations were chosen to recruit participants based on their histories of working closely with the various demographic groups. The focus group facilities used the screeners developed by BDDD and Westat along with their extensive market research databases to recruit women to



participate in each of the focus groups (see Appendix A for screeners).

2.3

Focus Group Sites and Schedule

The 16 focus groups were held in three different geographic locations in the United States: Atlanta, Georgia; Houston, Texas; and Miami, Florida. These locations were chosen based on the demographic characteristics of the local populations, as well as the practicality of convening groups there. For example, Houston was chosen because of its large population of Mexican-American women and women of other South American Hispanic descent; Miami was chosen for its large population of Cuban women and women of other Caribbean Hispanic descent.

All groups were held at a professional market research facility in each location. In each facility, observers were seated behind a one-way mirror, and participants were informed that observers were present in an adjacent room. Each group was also audiotaped and videotaped to aid researchers in recollection of the discussion; again, this activity was disclosed to participants at the beginning of each discussion. For the four groups that were conducted in Spanish, an interpreter sat in the observation room and simultaneously translated the discussion for the observers. Two audiotapes were made of the groups conducted in Spanish; one recorded the participants' and moderator's comments in their native language; the other recorded the interpreter's English translation. Each group lasted from 1.5 to 2 hours and all participants received a \$50.00 incentive payment for attending. The incentive money was offered to assist participants with any travel or family care expenses incurred as a result of attending the group, as well as to compensate them for their time.

Table 2 shows the dates, times, and composition of each group that was implemented in each of the scheduled geographic locations. The first group that was conducted was a pilot test of the overall structure and flow of the discussion guide.



Table 2. Location, Dates, Times, and Composition of the Focus Groups

Location	Date & Time	Number of Groups	Women at Risk Segment	Pregnancy Intention	Vitamin Consumption
Atlanta, Georgia	March 4 10 am	1 (Pilot)	African-American/ White	Intend pregnancy within 1 year	None
	March 4 5:30 pm	1	African-American/ White	Never intend pregnancy	Some, but not daily
	March 5 6 & 8 pm	2	African-American/ White	Intend pregnancy in the future	None
Houston, Texas	March 9 5:30 pm	1	Spanish-speaking Hispanic	N/A	None
	March 9 7:30 pm	1	Spanish-speaking Hispanic	N/A	Some, but not daily
	March 10 10 am	1	English-speaking Hispanic	N/A	Some, but not daily
	March 10 5:30 pm	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Intend pregnancy within 1 year	Some, but not daily
	March 10 7:30 pm	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Never intend pregnancy	None
	March 11 10 am	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Intend pregnancy in the future	Some, but not daily
Miami, Florida	March 16 5:30 pm	1	Spanish-speaking Hispanic	N/A	None
	March 16 7:30 pm	1	English-speaking Hispanic	N/A	None
	March 17 10 am	1	Spanish-speaking Hispanic	N/A	Some, but not daily
	March 17 5:30 pm	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Intend pregnancy within 1 year	Some, but not daily
	March 17 7:30 pm	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Intend pregnancy in the future	Some, but not daily
	March 18 10 am	1	Afric.-Amer./White/ Engl.-spkg Hispanic	Never intend pregnancy	None
<i>Total Groups</i>		16	4 Spanish-spkg Hisp. 2 English-spkg Hisp. 10 Racially mixed	3 intend in 1 year 4 intend in future 3 never intend 6 N/A	8 Some use 8 No use



2.4 Participant Characteristics

A total of 131 women participated in the 16 focus groups that were conducted for this study. Table 3 on the following page summarizes demographic information for participants in all 16 groups combined (including the pilot test group). All numbers and percentages were derived from a brief demographic questionnaire given to participants at the conclusion of each group (see Appendix B).

As Table 3 shows, the race/ethnicity of all participants was approximately equally divided among four groups: African-American, White, English-speaking Hispanic, and Spanish-speaking Hispanic women. In addition, the largest number of women (n=61; 47%) across all groups had some college or vocational training as their highest level of completed education and more than 75 percent of the women reported between \$10,000 and \$50,000 annual household income. Approximately equal numbers of women were single or married, and Table 3 also shows that over half of participants had one or two children living at home. However, greater than 1/3 of the women had no children — probably due in part to the youth of the women (42% were aged 25 or younger) in these groups.



Table 3. Number (Percentage¹) of Participants in Each Group with Selected Characteristics

	All groups N=16	Afric.-Amer./ White/Engl- spkg Hispanic groups n=10	Spanish- speaking Hispanic groups n=4	English- speaking Hispanic groups n=2
Number participants	131	79	34	18
Age²				
< 18 years	1 (<1%)	--	--	1
18 - 20	8 (6%)	5	2	1
21 - 25	48 (37%)	27	13	8
26 - 30	34 (26%)	21	8	5
31 - 35	39 (30%)	26	10	3
Marital Status				
Single	60 (46%)	41	10	9
Married	63 (48%)	33	22	8
Divorced/Separated	8 (6%)	5	2	1
Race/ethnicity				
White	34 (26%)	34	--	--
Black	31 (24%)	31	--	--
Engl-spkg Hispanic	32 (24%)	14	--	18
Span-spkg Hispanic ²	33 (25%)	--	33 ²	--
Education³				
< High school	2 (<2%)	--	1	1
High school degree	24 (18%)	10	10	4
Some college/voc.	61 (47%)	39	16	6
College degree	26 (20%)	17	5	4
Some graduate school	5 (4%)	5	--	--
Graduate degree	11 (8%)	8	--	3
Income²				
< \$10,000	5 (4%)	2	3	--
\$10,001 - 30,000	55 (42%)	28	21	6
\$30,001 - 50,000	50 (38%)	35	6	9
\$50,001 +	10 (8%)	7	1	2
Don't know/unsure	10 (8%)	7	2	1
Number of Children at Home				
None	47 (36%)	32	10	5
1 or 2	71 (54%)	45	19	7
3	6 (5%)	1	2	3
4 or more	7 (5%)	1	3	3

1. All percents have been rounded.

2. One woman in the Spanish-speaking Hispanic groups did not complete this question.

3. Two women in the Hispanic groups did not complete this question.



2.5 Focus Group Moderators

In many focus group studies, the participants and the moderator share the same gender, ethnicity, or other characteristics. Having this commonality can help foster comfort and openness among participants in their discussions. Moreover, for some topics that can be directly related to race, ethnicity, and culture, such grouping is vital to obtaining frank, reliable input from participants. This can be particularly true among recent immigrants to the United States. For this reason, all 6 Hispanic groups were moderated by a native speaking Spanish moderator, with over 14 years of experience working within the Hispanic community and moderating focus groups. In addition, the 4 Hispanic groups that were conducted in Spanish were translated for observers by an interpreter skilled in simultaneous translation.

BDDD made the decision to combine African American, White, and Hispanic women in all other group discussions. The participants had a number of important characteristics in common that facilitated comfortable discussion, including age range, income level, pregnancy intention, and vitamin use. A White female moderator with over 20 years of experience moderating focus groups in the health field conducted 7 of the 10 racially mixed groups. The same Hispanic moderator who conducted the Hispanic groups conducted 3 of the racially mixed groups since they were being held in the same location where she was already conducting groups with Hispanic women.

2.6 Discussion Guides

Two discussion guides were developed for the focus groups; one was for use with groups who sometimes used vitamins, while the other guide was used with women who do not take vitamins regularly or at all. Although the discussion guides were similar to each other in most respects, certain sections varied according to vitamin use.



For example, the questions in the section entitled “Vitamin Behavior” differed across groups. Participants who currently took vitamins were asked questions about why they started taking vitamins, why they continue to take them, and their general experiences with them. Women who did not take vitamins regularly or at all were asked questions such as their reasons for not taking vitamins, whether or not they have ever taken them and if so, why they stopped taking them.

2.6.1 Background and Introduction

The guides were created by Westat staff, in conjunction with BDDD and the moderators. The guides were designed so that information could be gleaned from participants based on BDDD’s research objectives for this study. Draft guides were reviewed and revised by Westat staff, BDDD, and both moderators to ensure that the content met the research objectives and that the questions were appropriately designed for the intended target audiences. In addition, the overall structure and flow of the guide was pilot tested during the first focus group. Only minor changes were made to the guide after this group.

The moderator of the Hispanic groups received the final versions of the discussion guides several weeks prior to the groups so that she could become familiar enough to easily translate the guides into Spanish while conducting the groups, although no formal translation of either guide was undertaken. See Appendix C for a complete copy of each discussion guide.

Both discussion guides provided a general outline for the moderator to start the groups by putting participants at ease, introducing the topic area for the discussion, and explaining how focus groups work. For example, the moderators used the opening minutes of the group discussion to do the following:

- ◆ Thank participants for attending and introduce herself;
- ◆ Identify the purpose of the discussion;



- ◆ Stress that comments are kept confidential (names do not appear in any report) and there are no right or wrong answers;
- ◆ Explain the presence and purpose of recording devices and observers seated behind the one-way mirror; and
- ◆ Facilitate participants' self-introductions.

When participants introduced themselves, they were asked to give their first names only, whether or not they had previously participated in focus group research, and their current or past use of any vitamin supplements. Questions like these can help establish rapport because they have no right or wrong answers nor do they establish a hierarchy within the group as readily as other types of questions (e.g., employment). The question about current and/or past vitamin use was selected because the answers provided context for participants' later comments.

2.6.2

Topical Discussion

The order in which topics were introduced in the discussion guide was determined by the research objectives and by what would best promote conversation among the women. The topics addressed in this section of the guide are outlined below. See Appendix C for a complete copy of the topical discussion in each of the guides.

I. Vitamin behavior – This part of the discussion explored women's current and/or past vitamin taking behavior, if any. The women were told that the research project was not being conducted for a vitamin company but for public health reasons. Reasons for currently taking or taking vitamins/minerals in the past were explored as well as any reasons for stopping use of vitamins/minerals.

II. Motivators/facilitators and barriers to daily multivitamin use – Because BDDD's goal is to increase the proportion of women who are consuming a multivitamin with folic acid, this section was used to explore factors that could motivate or facilitate multivitamin consumption, or factors that represent barriers to daily multivitamin consumption. Women were asked to discuss motivators, (i.e., what would make them want to or be more able to start taking a multivitamin daily), and reasons that they currently do not take multivitamins or do not take them daily (i.e., barriers).

Preceding the discussion on motivators in both groups, the moderator passed out a list of eight potential motivators and asked each participant to check off any that she felt would influence her to take a multivitamin every day. That list included the following eight statements (see Appendix D for a copy of the sheet that was distributed to each participant):

- _____ If someone I trust suggested it.
- _____ If I were trying or hoping to get pregnant.
- _____ Because I know I don't always eat right.



- _____ If I were sexually active.
- _____ To prevent birth defects in case I have a baby one day.
- _____ To help prevent heart disease, the #1 killer of women.
- _____ To help me feel my best today.
- _____ In case I got pregnant without planning to.

- III. *Knowledge and beliefs about birth defects and folic acid*** – Participants were asked about their knowledge and beliefs about birth defects, folic acid, sources of folic acid, and any associations they were aware of between folic acid and prevention of certain birth defects.
- IV. *Influence of health care providers and others in participants' lives*** – This part of the discussion explored whether or not any health care providers, family members, and/or friends had talked with participants about folic acid and/or taking a multivitamin with folic acid, and how participants responded to any advice.
- V. *Awareness of PHS recommendation*** – This section explored women's awareness of the PHS recommendation regarding folic acid, and whether or not they were familiar with the terms neural tube defects, spina bifida, and/or anencephaly.
- VI. *Campaign implications*** – Certain terms and images were presented to participants to determine if the women felt they would be useful in a national campaign to encourage women to consume the PHS-recommended level of folic acid. These images included a photograph of a baby with spina bifida and a line drawing of a baby with anencephaly (see Appendix E for photocopies of the images). Women were also asked about their reactions to alternate terms that could be used in the campaign: folic acid, folate, Vitamin B₉, or B vitamin folic acid.
- VII. *Communication channels*** – Communication channels such as TV, magazines, or other preferred sources were explored as potential channels of information for the campaign.
- VIII. *Summary of key points*** – In the final topical section of the guide, the moderator revisited the motivators with participants and asked them to pick a single statement that might motivate them to take a multivitamin every day.

After participants had given their summary advice, the moderator excused herself briefly to check on departure arrangements for participants as well as to see if researchers in the observation room had any outstanding questions for the group in its final minutes. Upon the moderator's return, participants were asked any additional questions if necessary and were offered an opportunity to make any final comments. The moderator then thanked the women for their time and gave them information about obtaining their incentive money following the group. After

2.6.3

Closing and Departure



all sessions, a subject matter expert from BDDD or a local public health expert who spoke fluent Spanish was available to answer any questions that participants had about folic acid

or birth defects, and to hand out pamphlets on folic acid.

The next section of this report details findings across all 16 groups' discussions related to folic acid and neural tube defects.



Section 3 FINDINGS

3.1 Process for Analysis and Interpretation of Findings

As noted earlier, focus group research is qualitative rather than quantitative. As a result, the value of focus group findings is dependent on researchers examining results systematically. The procedures used to analyze focus group results are not standardized, and the absence of a uniform approach heightens the importance of this systematic assessment.

Westat researchers employ a notes-based analysis process similar to that recommended by Krueger (1994). Krueger emphasizes that any process for analyzing focus group findings must be systematic and verifiable. He recommends processing each group briefly at its conclusion, then developing a total picture of all groups, and finally considering particular groups and responses to specific questions. This process was carried out thoroughly by implementing the following steps in order to identify key themes and findings for this report.

Step 1

Once the 16 focus groups were completed, all records from each of the groups were gathered together. This included observers' notes, topline summary reports prepared by the group moderators (included in Appendix F), and transcripts of each of the group discussions (included in Appendix G). All records were then carefully reviewed by the Westat research team; trends across and contrasts between groups were noted and discussed.



Step 2

Following this overall assessment, the findings from each group were more closely considered one at a time to discern how they reflected, differed from, or illuminated tentative observations made during Step 1. The examination of individual groups was designed to continue the overview process while adding more in-depth detail.

Step 3

The third step was to examine findings one discussion topic at a time. Summaries of the findings on each topic across groups

were compiled and compared, and are presented in Sections 3.2 through 3.12. Participant quotes were extracted from transcripts and are used to illustrate key points made by women participating in all groups. Quotes from discussions conducted in Spanish reflect the interpreter's translation of the discussion and not the exact words of the participant.

Step 4

The last step in the process involved reviewing the research conclusions and implications (Section 4) to ensure that they flow logically from the actual findings of the groups and that they are presented in terms of implications for health communication strategies.

3.2

Vitamin Behavior

As mentioned in Section 2.2, women had been prescreened and segmented into two types of groups: one in which women took vitamins sometimes, but not on a daily basis; and one in which women took vitamins rarely or not at all. As a result, questions about vitamin-taking behavior differed slightly according to the type of group in which women participated. For example, women participating in the 'some vitamin' groups were asked why they started taking vitamins, their experience with them, and what motivates them to continue taking them in addition to what might motivate or assist them to take vitamins every day.



The majority of women participating in the ‘no vitamin’ groups had taken some type of vitamin in the past. When asked what types of vitamins they had taken, participants in both types of groups (‘no vitamin’ and ‘some vitamin’) mentioned a variety of different vitamins, including a range of individual supplements such as Vitamin C, E, A, iron, calcium, and, as one participant said, “all the letters of the alphabet.” Participants also mentioned taking multivitamins such as Centrum, Theragram M, or store brands such as Eckerd, GNC, and Publix.

When asked why they started taking vitamins, either currently or at some point in the past, reasons were very similar across all groups. Women started taking vitamins because they became pregnant, they wanted to supplement their diet, they felt they needed more energy or wanted to feel better, or a family member or doctor suggested they take vitamins.

Women participating in the ‘no vitamin’ groups gave some of the following reasons for having taken vitamins in the past:

You do cause you’re pregnant, you do it for the baby.

I needed more energy. Lack of energy.

When I was little and my mom made me...

I have taken iron because I was anemic.

Vitamin C...in the past. They say it’s good for colds.

I know when I was much better to myself when I was pregnant, there was an added incentive there to have a healthy baby, so I took my vitamins every day...I think I probably gave him a good start, at least in his development and stuff.

Women participating in the ‘no vitamin’ groups were asked about their attitudes toward vitamins, and if relevant, any past vitamin-taking behavior, reasons for that, and why they no longer take vitamins.



When women participating in the 'some vitamin' groups were asked why they started to take vitamins, very similar examples were given:

I started taking them when I became pregnant with my first child.

My doctor recommended [to] me to take some vitamins because I was so weak and sleepy... the result is great.

My mom says it's good for me so I take it [Vitamin C].

I take a multivitamin because I also feel like I don't get enough from what I eat.

Well, about three years ago, between my work, classes, and the kids, I felt very tired. I went to the doctor just to let him know that I was really tired, actually exhausted and having problems sleeping, and the doctor recommended taking vitamins periodically...

the 'some vitamin' groups listed increased energy and feeling better as reasons why they continue taking vitamins:

I can feel a difference. I feel I can accomplish more of the things I need to do when I'm taking them [vitamins].

...when I took my iron pills I feel...stronger...I feel energetic....

It [Centrum] helps me because I work Monday through Friday from 8 until 5:30 and by the time I get home, cooking, cleaning, this and that I'm tired so I take that and it helps me keep alert.

Women participating in the 'no vitamin' groups gave many reasons as to why they do not take vitamins now or never have. These reasons included that taking them was not a habit, vitamins do not make them feel any different, they are too large to swallow or taste badly, they cost too much, they do not feel a

Women also discussed their experiences with currently taking vitamins or having taken them in the past. Women participating in



need to take them, and the information about vitamins is confusing:

Those things were huge, they were horse pills.

I think the main reason is just I'm not familiar with them. I don't have much knowledge about vitamins.

My mom, she'll give them to me whatever. But I don't take vitamins because I just don't take medicine...it's something I have to swallow and I hate those things.

You forget...You just forget. It's so busy, your life is, you just can't remember....

...they're so expensive, I couldn't afford them.

I think I get enough out of what I eat.

I don't take them now but I did when I was pregnant. I just don't like taking pills. They don't do anything to me.

[Pregnancy] was the only time that I did it on a regular basis. I just have a hard time remembering. I guess I made myself remember [then] since it wasn't just me.

3.3

Motivators to Taking a Multivitamin Daily

Since BDDD's goal is to increase the number of women taking a multivitamin every day, participants were asked what might motivate them to engage in this behavior. The moderator passed out a list of eight potential motivators and asked each participant to check off any that she felt would influence her to take a multivitamin every day. The list included the following eight statements (see Appendix D for the list given to participants):

- _____ If someone I trust suggested it.
- _____ If I were trying or hoping to get pregnant.
- _____ Because I know I don't always eat right.
- _____ If I were sexually active.



_____ To prevent birth defects in case I have a baby one day.

_____ To help prevent heart disease, the #1 killer of women.

_____ To help me feel my best today.

_____ In case I got pregnant without planning to.

The women were given a few minutes to choose the statements that might be personal motivators and then were asked to discuss which ones they chose and why they selected those motivators. The motivators that women chose paralleled some of the reasons they gave for taking vitamins in the vitamin-taking behavior discussion. The reasons included feeling more energetic, supplementing their diet, and having a healthy baby.

Several of the motivators were selected more frequently than others, and in fact, the statement **‘To help me feel my best today,’** was chosen most frequently across all groups. When participants were asked

what feeling ‘my best’ meant to them, many responded by saying that it meant having more energy and being able to get everything done that they needed to. Many women said that their lives are so hectic and they would benefit from having more energy. Several of the women gave the following definitions when asked what feeling ‘my best’ meant to them:

[It means] I’m not feeling very tired — and I could just keep going throughout the day.

To have energy.

Desire to do everything you have to.

Having more energy to run after my one-year-old in the stores.

I want to feel better physically and emotionally.

I would say content, happy, not screaming, you know.



Another statement that was popular across groups was ‘**To prevent heart disease,**’ however, some of the women wondered if this was really a true statement (i.e., does a multivitamin really prevent heart disease). Many participants chose this statement; however, African-American women, in general, discussed heart disease more often than others as an issue with which they were very concerned. Comments from all participants included the following:

[I chose] *To help prevent heart disease, the number one killer of women. You know, this is one, one of the biggest fears I have. (African-American woman)*

I checked it off that if vitamins did this I would take one but do I believe that it does it? No.

...would that really happen if you don't take vitamins: you can get heart disease?

‘**Because I know I don't always eat right**’ was chosen by many of the women because they

felt their lives are so hectic and they tend to eat fast food more than they would like to. A number of women made the following comments:

Well, my problem is that I never eat three square meals. I eat a little here, something there, sometimes I leave early in the morning and come home late at night. I'll eat anything.

[I chose it] *Because I'm always eating fast food. Almost every day.*

[I chose it] *Because I don't always...eat breakfast and I do not eat until dinner, I just did not have the time to do so, so if I take my vitamin....*

I'm really a junk eater you know and I feel like if I don't have all my vegetables in and all that, I probably would need vitamins to pick up where I didn't do right.



Others however, felt like they get everything they need from the food they eat, and for this reason, would not be motivated to take a multivitamin every day. As one woman said:

I wouldn't take one [for that reason] cause like it says it's all in the food.

'If I were trying or hoping to get pregnant' appealed to those women who were planning to become pregnant in the future. When women chose this statement as a motivator, they tended to also choose the other two statements in the list that applied to pregnancy **'To prevent birth defects in case I have a baby one day,'** and **'In case I got pregnant without planning to.'** Women felt that it was important to take vitamins when trying to get pregnant so that they would be at their healthiest, and the fetus would have all the nutrients it needed. Several women said the following:

[I chose] most of these [that] did have to do with pregnancy and what I've read...it's important for certain levels of certain vitamins to be in your

bodies so that the baby will develop in form and be healthy...

I chose if I were trying or hoping to get pregnant cause I would want to be the fittest that I could if I was planning to have a baby.

Many women also linked this motivator with the previous one about not eating well. In other words, in discussing which motivators they chose, many participants said they chose 'If I were trying or hoping to get pregnant because I don't always eat right.' 'If I were trying to or hoping to get pregnant,' however, did not seem to be motivational to women who were not planning on having more children or any children at all. Some women stated the following:

If I were planning to get pregnant sometime in the near future, I would take a vitamin every day, but because I'm not, I won't.



When I get to the planning stages and say I'm going to have the baby, I'll take it [a multivitamin]... rather than today.

Many women who chose the previous motivator '**If I were trying or hoping to get pregnant**' also chose '**To prevent birth defects in case I have a baby one day**' as a motivator and gave the following reasons for choosing it:

If I was pregnant, I would want my baby to be healthy. I know if I didn't take the vitamin and something happened to the baby, it would just kill me.

I believe that if I have the chance to prevent my baby to come out bad, I will take it.

The final motivator relating to pregnancy was '**In case I got pregnant without planning to.**' Again, this statement was chosen by women who selected the other motivators related to pregnancy. One difference, however, is that some women who are not planning on having children in the future also chose this statement because they

acknowledged they could get pregnant accidentally. The following comments illustrate this:

I checked it because just in case I got pregnant without me knowing...so I'm thinking maybe it will help me help my baby stay healthy.

[I chose] *In case I got pregnant without planning to because I got pregnant without planning to three times....*

[I chose] *In case I got pregnant without planning to...I don't really believe in vitamins much [but] when I was pregnant, I mean for the baby....*

While several of the women who are not planning on getting pregnant chose this statement, they tended to amend it, adding to the end of the sentence by saying 'In case I got pregnant without



planning to, *but I'm not going to.*' Quotes reflecting this perspective follow.

I don't plan on getting pregnant, but it says 'In case.'

...if you're not planning to [get pregnant], you don't think it's going to happen. [But] it would still be, you know 'In case I have a baby one day that I'm planning on.'

Some of the women felt that **'If someone I trust suggested it'** would be a motivational statement for them and, in fact, were currently taking vitamins because a family member, friend, or health care professional suggested it. Others, however, felt they would need something more to motivate them to take a multivitamin every day. Comments reflecting both perspectives follow:

If someone I trusted like my mom is always telling me take some vitamins again.

Like if someone you trusted suggested it and they said you're going to do this...and I trust their opinion, then I

would be more motivated...

If 'someone I trust suggested it' [does not motivate me] because almost all have said they've told us and we still don't take it.

Finally, the motivator that was chosen least often was **'If I were sexually active.'** This statement was included on the list because BDDD had hoped that women would make the connection between being sexually active and the possibility of becoming pregnant. Most participants, however, were either unsure why this motivator was included on the list or thought that it might mean that multivitamins give them more energy for being sexually active. Comments included the following:

I heard certain vitamins will give you a higher sex drive.



I was studying medicine, I was in my second year and they explained to us that when you have sexual relations, you use a lot of energy.

I do not understand that...very well. What does that mean?

Finally, women were asked if there were any additional reasons they might be motivated to take a multivitamin every day. Women mentioned that they would take a multivitamin daily if they were told that it would extend their life, if a doctor told them they were deficient in something and needed a multivitamin, or if they were told that a multivitamin would help prevent certain chronic diseases such as cancer or osteoporosis.

In addition, many women participating in the Hispanic-only groups in Houston mentioned that they would be motivated to take a multivitamin if they were told that it would help improve their nails, skin, or hair. As one Hispanic woman mentioned:

One of the things that would motivate me is,

for example, I would like to have nice nails, hair; that my skin won't wrinkle, stain....

Finally, it is important to note that a few of the women did not choose any of the statements as motivators. Some of the women did check off a few statements initially; however, in the ensuing discussion, they said they still were unsure if they would really take a multivitamin every day despite any of these motivators.



3.4 Barriers to Taking a Multivitamin Daily

Addressing barriers to a desired behavior is an essential ingredient of a successful communication campaign. As a result, women participating in these groups were asked what prevents them from taking a multivitamin everyday. Themes that emerged across all groups included the following list of barriers:

- ◆ Forgetting to take a multivitamin everyday;
- ◆ Side effects such as upset stomach, nausea, and constipation;
- ◆ Fear of gaining weight;
- ◆ Conflicting information in the media;
- ◆ Not believing they need a multivitamin everyday; and
- ◆ Not believing that a multivitamin works.

Women participating in the ‘some vitamin’ groups said the following when explaining why they do not take a multivitamin every day:

Oh well, I just know that you’re supposed to take it once a day but, you know, sometimes [you’re] on the run or with the kids, like you forget about you.

I can’t take the iron everyday because that makes me constipated so that doesn’t work and it makes my stomach upset. I would like to take all the other ones everyday but with a busy schedule I don’t get to take them....

Well I’m afraid yeah, I mean of gaining any more weight or, maybe if I try any other vitamins that I would gain more weight.

...it’s like I’ll run out...sometimes a week, two weeks, three weeks will go before I get more.



Women in the ‘no vitamin’ groups offered the following reasons as to why they would not take a multivitamin everyday:

Because it opens up your appetite so you eat and you eat and you gain weight.

...because you have these studies, first they come out, oh yeah this is wonderful for you and then you get an article two months later that says if you take too

much vitamin E this is going to happen.

I feel like I live a healthy life, I'm healthy, I eat well and I guess no sorts of information has come to me where I felt compelled that I must take a multivitamin.

If you have kids, you usually spend the time taking your kids to the doctor or taking care of your husband or you know a friend or whatever....

I remember times when I would attempt to take a vitamin, it was a taste thing too;...those things were huge, they were horse pills. I did it because I felt I had to [because of past pregnancy] but it wasn't pleasant, no fun.

Vitamins aren't cheap either.

3.5 Summary of Motivators and Barriers to Taking a Multivitamin Daily

important finding for BDDD's communication efforts to be aware that these issues are similar for women engaging in either behavior, in that it appears that separate communication campaigns or messages need not be designed for these two populations.

Motivators and barriers did differ, however, across certain ethnic groups and across pregnancy intention groups. Most notably, Hispanic women participating in the groups in Houston were

As discussed above, motivators and barriers to vitamin use were similar among women who were taking vitamins sometimes and women who were not currently taking any vitamins. It is an



motivated to take a multivitamin for beauty purposes. Many stated that they would be willing to take a multivitamin daily if it would give them beautiful hair, stronger and longer nails, and better looking skin. While this was discussed as a motivator more often by Spanish-speaking Hispanic females, English-speaking Hispanic women also mentioned beauty as a motivator on an unaided basis. Comments from all Hispanic women included the following:

I also take these other vitamins...it is for my nails that have become horrible living here, it is also for the hair, and for the skin.

I've been taking vitamin E for about four years because my mom recommended me to take it because her dermatologist I believe told her to take it for her hair, skin, and nails.

While the belief that multivitamins increase appetite and lead to weight gain was mentioned by one or two women in all groups, Hispanic women in all locations tended to mention weight gain as a barrier to multivitamin consumption more consistently than others. For Hispanic women who mentioned that weight is a problem for them, the belief that vitamins lead to weight gain is not only a barrier but something frightening that they will try to avoid at all costs. Hispanic women made the following comments when discussing their fear of weight gain because of vitamins stimulating their appetite:

My mom always said, I don't take vitamins because they make you hungry, I gain weight. I guess that stuck inside of me.

I am terrified of taking vitamins. I'm terrified of getting heavier than I already am.

I am afraid of gaining weight.

...I do not take them [vitamins] everyday because it makes me really hungry...



This is an important barrier among the Hispanic community. Before the educational process can begin, the myth that vitamins increase appetite and induce weight gain will need to be addressed. Next, Hispanic women must be educated about the importance of including folic acid in their diet, both through increasing fruits, vegetables, and other food sources of folic acid, and through taking a daily multivitamin.

Motivators to taking a multivitamin daily also differed for women who were planning a pregnancy in the future versus those who were not planning on becoming pregnant. As discussed in Section 3.3, women who are planning on getting pregnant in the future stated that they would be motivated to take a daily multivitamin so that their body would be ready to get pregnant and/or to improve the health of the fetus. In turn, taking a multivitamin for a healthy pregnancy was not a motivator for women who are not planning future pregnancies. As one woman who is not planning any more pregnancies stated, if that was the only reason for taking a multivitamin with folic acid on a daily basis, she did “not care.”

Table 4 presents a summary of participant-reported motivators and barriers to daily multivitamin use according to type of group.



Table 4. Key Motivators and Barriers to Daily Multivitamin Use

Group	Motivators	Barriers
All Women	<ul style="list-style-type: none"> ▪ For energy, to make them feel better, more awake, less stressed ▪ Feel like they need vitamins – don't always eat right; have anemia ▪ To prevent colds ▪ To help with PMS symptoms ▪ For future pregnancy ▪ For long-term health benefits ▪ If doctor suggested a multivitamin and told them <i>why</i> it was important 	<ul style="list-style-type: none"> ▪ Not a habit ▪ Forget to take them ▪ Don't need them: get enough nutrients from current diet ▪ Don't like to take pills ▪ Causes upset stomach, nausea, constipation ▪ Too expensive ▪ Afraid of weight gain ▪ Conflicting information ▪ No indication vitamin is working ▪ Hectic schedule; too busy ▪ Pills are too big and difficult to swallow; leave bad taste
Spanish-speaking women	<p>All of the above, plus:</p> <ul style="list-style-type: none"> ▪ For beauty reasons: to improve skin, hair, and nails (especially Houston groups) ▪ To fix or remedy a condition such as anemia or depression 	<p>All of the above, plus:</p> <ul style="list-style-type: none"> ▪ Primary barrier for this group is perceived appetite increase and subsequent weight gain ▪ Vitamins are remedies, not necessarily a preventive measure ▪ Are more necessary for children or men
Pregnancy Intention:		
Intend in the next year	<p>Same as all women, plus:</p> <ul style="list-style-type: none"> ▪ To prevent birth defects 	<p>Same as all women, plus:</p> <ul style="list-style-type: none"> ▪ Know others or have had healthy babies themselves without multivitamins
Intend in the future	<ul style="list-style-type: none"> ▪ Primary motivators include feeling their best, don't eat right, and decreasing PMS symptoms 	<p>Same as all women, plus:</p> <ul style="list-style-type: none"> ▪ Would only take a multivitamin now if planning a pregnancy in <u>immediate</u> future
Do not intend pregnancy	<ul style="list-style-type: none"> ▪ Primary motivators include feeling their best, because they don't eat right, and decreasing PMS symptoms 	<ul style="list-style-type: none"> ▪ Message about pregnancy would not be relevant to them



3.6 Knowledge and Beliefs about Birth Defects

When women were asked about the benefits of taking a multivitamin when they were pregnant, the majority mentioned the importance of multivitamins for the general health of the mother and baby, but did not mention a link between vitamins and birth defects. Participants stated that taking vitamins during pregnancy was good for the baby's development and provided nutrients for the mother because she was not always able to eat right and because the baby depleted her of vitamins.

I think that if you are getting vitamins, then the baby is well.

...by providing the vitamin before you are pregnant guarantees that the baby will have all his minerals and vitamins from the beginning.

Well part of my reason for taking it more consistently when I was pregnant was the fact that I did not always eat right even during pregnancy. You can't possibly get all the nutrients...and the baby takes the best of what is in your body.

...I've read...it's important for certain levels of certain vitamins to be in your bodies so that the baby will develop in form and be healthy...

When you are expecting a child, they tell you to take iron and calcium because it is good for your bones and for the baby's.

3.7 Knowledge and Beliefs about Folic Acid

After discussing multivitamins in general, the moderator told participants that folic acid in particular is linked with preventing some birth defects and asked if they had heard anything about folic acid. The majority of women were familiar with the term 'folic acid,' but did not know it was needed to prevent certain birth defects. Several participants had heard of it because of television commercials that promoted orange juice as a source of folic acid, or because they had read the term on the label of



vitamin bottles. Some of the women knew that folic acid was needed for a healthy baby and believed there was a greater need for folic acid during pregnancy.

The doctor...told me I had to take folic acid and also iron because babies are like sponges: they take all you[r] vitamins and you have to keep them at certain levels.

I remembered now, perhaps I did not understand it a little ago, but I remember that they were talking about that case from Matamorros, something came out that pregnant women are being given folic acid so there is proof that it is needed.

When my doctor told me to start taking vitamins when I tried to get pregnant, he said make sure it's got folic acid and iron because those are the two main things your body is going to really need.

A few of the women knew of a connection between folic acid and birth defects, although they were not clear about the association.

...that was folic acid. I don't know, a vitamin helped and now they put it in cereals or whatever and that helped these spinal whatever diseases. They've shown that it lowers the amount of cases.

I know it, the one thing that it...it's a spine problem for babies.

Folic acid, it prevents the baby from having this spina bifida. It makes the spinal cord come out straight instead of having a curvature.

Those who knew of a connection between folic acid and certain birth defects were not aware, however, that women should be taking folic acid *prior* to pregnancy and many wondered aloud if this was new information.

I thought it was once you were pregnant.



That you have to take them before, yes, it is new [information].

It was surprising [to learn folic acid is needed before pregnancy]. I'm wondering how did they prove [it]? Is it correlation? How many people...?

Women were also asked if they had ideas about ways to get folic acid. Some of the women correctly mentioned food sources such as orange juice, green leafy vegetables, legumes, and cereals. The moderator went on to state that the recommended daily amount of folic acid is found in a multivitamin, that folic acid is available as a separate supplement, and it is also found in various foods. She then told participants how much food they would have to eat in order to get enough folic acid on a daily basis. Since the list did not include fortified foods, women were told they would have to consume fairly large amounts every day in order to get the recommended amount of folic acid. The moderator provided participants with some examples of the amount of food needed everyday, such as 4 cups of orange juice, 4 ½ cups of

broccoli, 3 cups of peas, and a full loaf of bread. After the women were given this information, they were asked what would work best for them personally: eating foods with folic acid, taking a multivitamin, or a combination of both. Despite the large amounts required, several women stated that they would still prefer to get the recommended level of folic acid from food.

I would prefer to get as much as I can from the food because I think that's more easily assimilated into the body.

Yeah [I would get it from food] because our house is like all fruits, all vegetables, all healthy foods all my life. I love broccoli, I love peas and we eat it every night...

I would stick to my diet. I mean I actually just felt good because all those things [foods] that you mentioned, I'm getting.



Others stated they would take a multivitamin because it would be easier than getting enough folic acid from food, or they would get their folic acid from a combination of food and a multivitamin.

You want to know you're getting the right amount, so by taking the vitamin it's

easier, you know you're getting the exact amount you need, you don't have to have that stress, I don't think I had enough bread or enough vegetables.

It is easier to buy the vitamin.

Let's take a week, it has seven days. Choose three or four days and take a vitamin, then the rest [of the week] eat broccoli, cereal, bread.

I think I'd probably take the vitamins. You'd have to keep up every day making sure you ate all these foods, when you know...you just go out to eat [at] McDonalds...

3.8 Role of Health Care Providers and Other Influences

Because health care providers can potentially be an important source of information about folic acid, participants were asked how healthcare providers could influence them regarding multivitamin use. Women were also asked how they respond to advice in general from their health care providers and if their health care providers had ever advised them to take a multivitamin. In addition, participants were asked about the role of other influences on their health decisions such as pharmacists, family members, and friends.

Most of the women had not had a health care provider initiate advice about the importance of taking folic acid or taking a multivitamin with folic acid. However, when some of the women specifically brought up topics such as wanting to get pregnant or feeling tired, their doctors sometimes advised them to take vitamins. Most doctors advised the women to take a prenatal vitamin when they were pregnant, although doctors rarely gave specific reasons as to why women should do this. Most of the women just assumed it was for the general health of



herself and the baby. As one woman said when the moderator asked what benefits the doctor mentioned when prescribing prenatal vitamins:

Not any. It was just the thing I was supposed to do.

In general, women overwhelmingly stated that if a trusted doctor recommended multivitamins, they would take them. In addition, family member and friends were also mentioned as trusted sources of health-related information.

Say for instance my doctor suggested that I take a multivitamin, I would do it then.

My brother is a doctor so I would ask him cause I go to him and my father is always reading up. He receives [The] New England Journal of Medicine.

A doctor or even if I had several very healthy friends who try to influence me and if they said 'look I've been taking this for a while...why don't you try this because it's working really great for us.' I would probably consider it more.

When asked if they would consult their pharmacists regarding health information or multivitamins, most women said they would not ask a pharmacist for health care advice.

3.9 Public Health Service Recommendation

Most women were not familiar with the PHS recommendation that was read to them regarding the daily consumption of folic acid:

Public health experts recommend that all women of childbearing age who are capable of becoming pregnant consume 400 micrograms (0.4 milligrams) of folic acid daily to reduce their risk of having a pregnancy affected by spina bifida or other neural tube defects.



In gleaning participants' reactions to this recommendation, the moderator segmented the statement and asked participants about those particular segments. For example, participants were asked what "all women of childbearing age" meant to them as well as whether they saw themselves belonging to the category of women "who are capable of becoming pregnant." Most women saw themselves fitting into these categories, even if they were not contemplating pregnancy.

They want everyone ...we don't think we're going to get pregnant, but they still want us to take it just in case, is what I interpret it [that phrase] to mean.

Anyone who is sexually active.

I'm capable, but it ain't going to happen.

Women in these groups were not surprised to find out that approximately 50 percent of pregnancies were unplanned, and in fact, most thought that the percentage was much higher than this figure. It was interesting to note, however, that although many women see themselves as being in their childbearing years and capable of becoming pregnant, they are unable to perceive themselves as being among the 50 percent who have an unplanned pregnancy.

I know that it could happen, I take the pills, I am married, I am sexually active...it could happen but I don't see myself [having an unplanned pregnancy].

I guess you do see the benefit, OK what if I did have an accident and you couldn't help that possibility, but what motivates me to take if I'm not really interested in being pregnant?

Women were generally unfamiliar with the terms neural tube defects, spina bifida, and anencephaly, although more women had heard of spina bifida than the other two terms. Even those who had heard of the terms were only familiar with them in a vague sense or were misinformed about their meaning. For



example, some thought that the term neural tube defects had something to do with tubal pregnancies. Many of those who were familiar with the term spina bifida only knew that it had something to do with the spine and improper formation, but were unclear of other details.

Spina bifida is the closing of the spine. Or is it the curvature?

[Spina bifida is] *a defect of the spinal column.*

[Anencephaly is when] *a part of the head is missing. I'm not sure.*

[Anencephaly] – *it is something with the brain.*

3.10

Campaign Implications

For this part of the discussion, women gave their opinions on certain alternate terms and images that could be used in a public health communication effort encouraging women to take a multivitamin with folic acid every day. Of the four terms that were suggested to participants (folic acid, folate, Vitamin B₉, and B vitamin folic acid), there was no consensus on what might be the best term to use in the campaign. Women chose each of the terms for different reasons, some of which follow:

I like Folate...I think it sounds more natural...I think folic acid, acid just has a kind of weird feeling for me. Acid is known as being caustic. And B vitamin folic acid is too much of a mouthful.

I like folic acid...you need to know, like how is it [currently] labeled on foods, on the vitamin bottles...I don't need to know it's vitamin B₉...If I need to know, the public needs to know it's vitamin B₉ then by all means have both, but if by knowing just 'folic acid' you're going to find all the foods you need, then that would be enough.



[B vitamin folic acid] *Maybe somebody's heard about folic acid but not about vitamin B, so it kind of combines them both.*

I would go with the B₉...when I think about B₁₂ I think about energy and [if] I thought about B₉, I would think about something good's going to come out of it.

After women commented on their choice of terminology, they looked at two pictures of babies with neural tube defects. One was a photograph of a baby with spina bifida; the other was a line drawing of a baby with anencephaly (see Appendix E for photocopies of the two pictures). Across all groups, the majority of women felt it would be important to use these pictures in a public communication campaign but also felt that the pictures should not be used in venues that children might see (e.g., television, clinic waiting rooms). Participants felt that the pictures would have a significant impact and would influence women who were planning to have children.

[For] *the person who is definitely planning on having the baby, those pictures have a lot of impact.... That wouldn't affect someone that says I'm not having a baby.*

Yes if you're trying to explain the things that folic acid could help prevent...I think a picture to help explain what the condition is would almost be necessary because those words [neural tube defects], when you said those words to us, we could not understand and even after you explained it, it's not the same as seeing a picture.

I think they should. I think people need to see more what happens, not just read it.



3.11 Communication Channels

Women mentioned the following places when asked where they expected to find or where they would notice information on folic acid:

- ◆ Clinics; Doctors' offices
- ◆ Hospitals
- ◆ Women's magazines (English, Spanish, and bilingual, e.g., *Cosmopolitan, Molana*)
- ◆ Newspapers
- ◆ Pharmacy
- ◆ Radio
- ◆ Television
- ◆ Vitamin counters in grocery stores or health food stores

When discussing a particular person or organization they felt would be credible, the following sources were mentioned:

- ◆ Their doctor
- ◆ A university
- ◆ A national health organization like the March of Dimes or Easter Seals
- ◆ The Surgeon General
- ◆ A person who has gone through the experience of a neural tube defect-affected pregnancy

Participants were also asked if there were particular people or organizations they felt would not be credible in relaying the folic acid recommendation to the public. Common responses included vitamin companies and health food stores since they are just trying to sell a product, and celebrity spokespeople since they are just getting paid to promote a product. Women felt it would be much more credible to have a parent that has gone through a neural tube defect-affected pregnancy or a person with spina bifida promoting folic acid consumption. Quotes reflecting who participants felt would and would not be credible follow:

Something like the American Lung Association, but not them, [one] relevant to birth defects.



Mothers of children who have that [spina bifida], you can say 'my child was born with this and if you take this, you can prevent it.' And then show mom with child. I don't care about a famous person.

The health food store's just trying to push it on people.

I was just kidding when I said Arnold Schwarzenegger. [Celebrities], they're just paid to do it and...how does it really apply in their life?

3.12

Revisiting Motivators

After the discussion about the connection between folic acid and prevention of birth defects, the women were asked to look again at the list of motivators that was reviewed earlier to see if they would choose any different motivators in light of the discussion. Several of the women added one or more of the three pregnancy statements to their list of motivators after learning about the connection between folic acid and prevention of neural tube defects. Some of the women also made the connection between being sexually active and the possibility of getting pregnant, and as a result, added this motivator to their list. Women offered the following explanations in selecting new motivators:

[Before] I didn't think if I were sexually active, 'OK I'll get pregnant'...but now that we did talk about it, now it says it and I'll circle it.

If I would be given proof that [they won't] make me hungry, I would take them because there's always a chance...that I could get pregnant.

However, for women not planning future pregnancies or for those who had healthy past pregnancies without vitamins, these motivators were still not enough to convince them to take a multivitamin every day. As several women said:



Is that the only reason [prevention of birth defects] you need this vitamin?...cause I have 3 kids, I don't want any more. If you're asking me to take a vitamin, I don't care.

For a person that had kids and haven't had any birth defects...I'm not convinced you know.

Finally, the moderator asked women what they would have to hear and believe in order to start taking a multivitamin every day. They responded with the following comments:

If I knew that it would give more energy, yeah...

To prevent heart disease.

If I had more reasons because I'm not planning to get pregnant...but if you may have told me some other things like help prevent heart disease and told me a few more things...I would have wanted to [take a multivitamin every day].

Well the doctor would have to tell me I'm going to have problems in the long run if I don't take multivitamins.

Something that would more apply to our everyday lives, not just getting pregnant because if nobody wants to get pregnant...

If a doctor tells me, I will take it.

In other words, women participating in these groups felt that additional benefits besides birth defects prevention would need to be promoted in order to persuade them to take a multivitamin every day.

The next section of this report presents recommendations for CDC's planned communication activities based on the findings from this series of focus groups with women of childbearing age.



Section

4

CONCLUSIONS AND IMPLICATIONS FOR COMMUNICATION ACTIVITIES

Findings from this series of focus groups suggest several implications for the communication campaign to persuade women of childbearing age to take daily multivitamins with folic acid even if they are not specifically planning a pregnancy. This section of the report discusses key findings in the context of potential implications for campaign message strategies.

Implement one common campaign for those who currently take vitamins and for those who do not...

As discussed in Sections 3.3 through 3.5, motivators and barriers to taking a multivitamin *daily* were very similar among women who were currently taking vitamins sometimes and women who currently do not or rarely take vitamins. Women across all vitamin-taking behavior groups stated that they would take a multivitamin daily if it made them feel their best (usually interpreted by the women to mean having more energy), because they did not always eat right, for future pregnancies, and/or for long-term health benefits. Barriers across these same groups included that taking a multivitamin daily was not a habit, they forget, they do not feel they need it, and it causes stomach problems, among other reasons (see page 37 for a summary list of motivators and barriers for all women participating in this research).

...however, elements of the campaign may need to differ according to pregnancy intention and race/ethnicity.

Women who are planning a pregnancy or think they might become pregnant sometime in the future were motivated to take a multivitamin with folic acid daily to ready their body for pregnancy or to help prevent birth defects. Women who did not expect to become pregnant in the future, however, were not



motivated by these same reasons. Instead, they reported being motivated by the possibility of other benefits such as feeling their best, and for protection against heart disease. To the extent that scientific data support some of these other benefits of a multivitamin with folic acid, the campaign should consider incorporating these benefits to prompt more women who do not plan to become pregnant to be concerned about their folic acid intake.

Primary motivators and barriers to taking a daily multivitamin were also different among the Hispanic women who participated in this study. A significant barrier for many Hispanic women is the perception that taking a vitamin will cause them to gain weight through increased appetite. This is an important barrier that needs to be addressed in this community if the campaign is to be successful in encouraging multivitamin use. Before the educational process on the importance of increasing folic acid intake can occur, the myth that vitamins increase appetite and cause weight gain needs to be corrected.

In addition, a reason for taking a multivitamin every day among some of the Hispanic women (particularly in the Houston area) is for beauty purposes. Some of these women stated they would be motivated to take a multivitamin every day if it would give them beautiful hair, stronger and longer nails, and better looking skin.

The campaign needs to suggest ideas that can help women overcome perceived barriers to daily multivitamin use. Common barriers to taking a daily multivitamin included resulting nausea or upset stomach, distaste for or difficulty swallowing pills, forgetting to take them, cost, not knowing how to choose from among the plethora of products available, and not feeling any better or different when taking vitamins. The campaign could suggest, for example, that taking a multivitamin

The campaign should present ideas for overcoming the major barriers to daily multivitamin use.



at night or with food may help overcome any nausea or stomach problems; that taking coated or chewable multivitamins can help alleviate the bad taste of multivitamins; and tips to help women remember to take their multivitamin every day can be provided. In addition, CDC may be able to alleviate confusion women cited about how to choose a multivitamin from the many products available by providing some general guidance (e.g., how to read the label) to reassure women that they can select an appropriate product with confidence.

The campaign must help increase awareness as to *WHEN* and *WHY* folic acid is important.

Most women were not aware of the link between folic acid and the reduction of birth defects and were especially unfamiliar with the importance of getting enough folic acid *before* pregnancy. While many participants had heard of folic acid, few knew why folic acid is important. Even fewer were aware that a woman must get enough folic acid *before* pregnancy to help prevent certain birth defects. In fact, some women believed that prenatal vitamins prescribed during pregnancy provide all the folic acid a woman needs for herself and her fetus.

The campaign could expand upon the widespread acceptance of the importance of prenatal vitamins during pregnancy by emphasizing that a healthy baby starts long before pregnancy is even contemplated — and includes taking a multivitamin with folic acid throughout the childbearing years, not just during pregnancy. This link could help overcome common objections to taking multivitamins other than when a pregnancy is planned or after conception occurs. In general, women cited more barriers than benefits to taking multivitamins daily; however, they were convinced about the importance of daily prenatal vitamins during pregnancy.



The campaign should point out that at least half of all pregnancies are unplanned.

Everyone agreed that they would do whatever is recommended to have a healthy baby, including taking a multivitamin to get more folic acid if they were *planning* to become pregnant. Most women also thought that they personally would not have an unintended pregnancy and therefore, would have no need to take multivitamins now. As a result, the campaign should point out that at least half of all pregnancies are unintended, making it important for women to be concerned about getting enough folic acid throughout the childbearing years.

The campaign will need to provide convincing evidence that the best way to obtain adequate folic acid is from synthetic sources, such as a multivitamin.

The campaign will need to demonstrate how difficult it is to obtain enough folic acid through food sources in order to compel women to consider synthetic sources such as multivitamins and individual supplements. Most women were not aware or immediately accepting of the fact that it is difficult to obtain sufficient folic acid from dietary sources alone. Quite a few women believed it was possible to obtain all the nutrients they need, including folic acid, from a healthy diet. Even some women who admitted that they probably do not eat healthy all the time thought they could get sufficient folic acid from food because they enjoy some of the foods cited as good sources (e.g., orange juice and greens) enough to consume large quantities of them regularly.

The campaign should use the term 'folic acid' and explicit illustrations to depict spina bifida and anencephaly.

Although there was no clear consensus as to which term should be used to refer to this B vitamin, the term 'folic acid' was familiar to many women and is consistent with terminology currently being used by other organizations and that which is depicted on vitamin bottles and enriched food sources.

It also appears to be important that the campaign provide fairly explicit information, including discreet illustrations or photographs, to explain clearly what spina bifida is and how it affects the lives of children born with it. All women were concerned about preventing birth defects but were completely



unfamiliar with the term ‘neural tube defects’ and were only vaguely familiar with examples such as spina bifida. Virtually everyone had little or no idea what spina bifida is, or that it has disabling consequences and serious costs for affected children and their families. Women participating in these focus groups felt that images depicting a baby with spina bifida or anencephaly were important to include in the campaign, however, not where children would be exposed to these pictures. In addition, photographs depicting an adult with spina bifida were also mentioned as being important in conveying some idea of the long-term implications of this birth defect.

Credible spokespersons include those personally affected by NTDs.

CDC should use parents who have had an NTD-affected pregnancy or baby or individuals with spina bifida as spokespersons for this campaign. Other persons or organizations that women mentioned as credible in relaying the importance of folic acid in preventing certain birth defects included physicians, a university, a national organization such as the March of Dimes, or the Surgeon General.

The campaign should avoid using celebrities who have not been personally affected by NTDs since celebrities, in general, are perceived as promoting an issue or product because they are being paid to do it.

Physicians, family members, and friends can play a vital role in influencing the target audience.

Physicians, in particular, may play a vital role in changing the common perception that vitamins are needed only during pregnancy. Many women who took vitamins in these groups were influenced by someone else to do so such as mothers, friends, or physicians (although physician recommendations were usually in reference to prenatal vitamins taken during pregnancy). In addition, women said they might take a multivitamin even if they were not planning a pregnancy if a doctor recommended it — but also mentioned that doctors rarely suggest this.



Women's magazines, radio, and television should be explored as channels for reaching the target audience.

CDC should explore various channels in communicating this message to the target audience, including both English- and Spanish-language women's magazines, English- and Spanish-language radio and television, clinics, doctors' offices, and vitamin counters in grocery stores or health food stores.



Section **5** REFERENCES

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Section **6** APPENDIXES

Appendix A. Screeners

Appendix B. Demographic Questionnaires (English and Spanish versions)

Appendix C. Discussion Guides (English versions)

Appendix D. List of Motivators (English and Spanish versions)

Appendix E. Photocopies of Potential Campaign Images

Appendix F. Moderators' Topline Summaries

Appendix G. Transcripts of All Focus Groups