CHAPTER IV: RESULTS AND DISCUSSION: SOCIO-DEMOGRAPHIC CHARACTERISTICS AND FOCUS GROUP DYNAMICS

Socio-demographic Characteristics

Results of the socio-demographic questionnaire are presented in Table 3. There was a total of 29 participants in the four focus groups. The William and Mary (WM) group included 9 participants; the University of Virginia (UVA) group and the James Madison University (JMU) groups both included 7 participants. The Virginia Tech (VT) group included 6 participants. However, there was a participant in the WM focus group who was Asian-American, lactose intolerant, relatively quiet during the discussion, and then left the discussion early. Her information was excluded from the study; thus, results represent 28 participants. There was a participant in the JMU group with a double major in Anthropology and Nutrition; however, her results were included in this study as she was only a junior and did not seem to influence the group discussion with her responses. In fact, it was surprising to find there was a Nutrition major in this group, as the responses during the discussion did not indicate that any participant had a strong nutrition background. In all focus groups, there were no women under 19 or over 22 years of age. Overall, the focus groups had a fairly even distribution of participants between ages 19-21; only 2 participants were 22 years old. The UVA group's age distribution was younger (19-20), whereas VT group's age distribution was older (20-22). The majority (5) of participants in the WM groups were 21 years old, and the majority in the JMU (4) were 19 years of age.

Over half (15) of all participants were Virginia residents; the others came to these schools from other states. Out-of-state residents were from New Jersey, Pennsylvania, Connecticut, Vermont, Maryland, Florida, and Oregon. In-state residents were mainly from the Northern Virginia area (12), followed by Southwestern Virginia (5), and the Tidewater region (2). Women who lived in more urban cities included areas, such as Fairfax, Norfolk, Williamsburg, Lynchburg, and Roanoke; more rural areas included Collinsville and Blacksburg.

Table 3 - Socio-demographic characteristics of focus group participants

Characteristic	Focus Group Site				
	WM (n=8)	**UVA** (n=7)	**JMU** (n=7)	**VT** (n=6)	**Total** (n=28)
Age					
19	1	3	4	0	8
20	2	2	2	3	9
21	5	1	1	2	9
22	0	1	0	1	2
College year					
Sophomore	2	4	4	0	10
Junior	2	1	3	2	8
Senior	4	2	0	4	10
Live alone					
Yes	0	0	0	1	1
No	8	7	7	5	27
Living Arrangement					
Dorm	4	0	4	1	9
Apartment	4	7	3	5	19
At home	0	0	0	0	0
Meal Plan					
Yes	4	1	7	4	16
No	4	6	0	2	12
Grocery Store Shop					
Yes	7	7	6	6	26
No	1	0	1	0	2

continued

Table 3 - continued

Characteristic	Focus Group Site				
	WM (n=8)	**UVA** (n=7)	**JMU** (n=7)	**VT** (n=6)	**Total** (n=28)
Self meal preparation					
Never	0	0	1	1	2
Sometimes	3	2	4	1	10
Almost always	3	5	2	4	14
Always	2	0	0	0	2
Eating out pattern					
Never	0	0	1	0	1
Less than once/week	3	0	3	2	8
About once/week	3	2	2	4	11
Greater than once/week	2	4	1	0	7
Follow vegetarian diet					
Yes	1	1	2	0	4
No	7	6	5	6	24
Follow specific diets					
No	4	4	2	4	14
Yes	4	3	5	2	14
Low fat	2	3	4	1	10
Low cholesterol	2	1	0	1	4
Low Salt	0	0	0	2	2
Low Kilocalorie	0	2	3	1	6
Diabetic	0	0	0	0	0
Other	1	0	0	0	1

continued

Table 3 - Continued

Characteristic	Focus Group Site				
	WM (n=8)	**UVA** (n=7)	**JMU** (n=7)	**VT** (n=6)	**Total** (n=28)
Vitamin/mineral supplement					
Yes	3	3	5	3	14
No	5	4	2	3	14
College nutrition class					
Yes	0	2	1	0	3
No	8	5	6	6	25

There were no participants who were in the freshman class; only sophomores, juniors, and seniors participated in all focus groups. All women in the focus groups were working towards Bachelor's degrees. Nine of these participants were working on dual degrees, and one was pursuing a minor with her degree. National survey results indicate that in 1993, 13.9 million students were enrolled in college. The percentage of these college students who were female was 54% (Bruno, 1993). U.S. Bureau of the Census (1993) also reported that 79% of non-Hispanic white females in Virginia were enrolled in college for a Bachelor's degree or higher in 1990. The types of majors participants were studying varied from school to school. William and Mary, UVA, and JMU are primarily Liberal Arts colleges; therefore, participants at these sites had similar majors which included Business, Psychology/Sociology, Government, Education, Religion, History, Mathematics, and Biology. Majors of participants at VT, a Land Grant University, included Engineering, Architecture, History, Biology, and Business.

Only one participant in all of the focus groups reported living alone. All others reported living with friends from college. The majority (19) of participants reported living in apartments; only 9 lived in college dorms, and none lived at home. Although groups at WM and JMU had the highest number of students living on campus, the number of participants living in a dorm versus an apartment was split equally at both sites. Two participants in the JMU group indicated they lived in dorms, but actually lived in a sorority house, which was an on-campus housing arrangement. All participants in the UVA group lived in apartments, and all participants but one in the VT group lived in apartments. These results are consistent with reports of the U.S. Bureau of the Census (1993) in that a large number of Virginia householders under 25-years of age live in "renter-occupied" units.

College meal plans have expanded in recent years beyond the traditional cafeteria-style meals. Meal plans now often include the choice to eat at cafeterias, at food courts, and even national fast food franchises, such as McDonald's or Pizza Hut. Many (16) participants had meal plans. The group at UVA was the only group that did not use meal

plans as only one participant reported having a meal plan. This finding could be attributed to the fact that all UVA participants lived in apartments. In the JMU group, all participants reported having meal plans, regardless of whether participants lived in an apartment or a dorm. Both WM and VT groups had numerous participants with meal plans. The selection of meal plans for those living in apartments where kitchen facilities are available, might help explain the fact that many participants mentioned during focus group discussions that convenience was important to them when making food choices.

Despite living arrangements or meal plan options, the majority of participants (26) shopped at grocery stores. The two participants who did not shop at grocery stores both lived in dorms on their respective college campuses, which was an expected finding. Results also indicated that the majority of participants (24), either "sometimes" or "almost always" prepared their own meals. In the UVA and VT groups, where the majority of participants lived in apartments, most participants (9) also "almost always" prepared their own meals. The two who said they "never" prepared meals lived in a dorm setting. The two who claimed they "always" prepared meals lived in apartments and were in the WM group.

All but one participant reported "eating out". Almost half (11) reported "eating out" about once a week, and 7 reported "eating out" more than once a week. All participants in the UVA group lived in apartments and reported eating out "about once a week" or "more than once a week". One UVA participant did not answer this question. In comparison, Hertzler and Frary (1992) reported that 45% of college students enrolled in a basic nutrition course ate at fast-food locations at least weekly. Research by Hertzler et al. (1995) indicated that college students ate at fast-food restaurants an average of "about once a week," whereas research conducted by Seymour et al. (1997) reported that college students ate fast-food more than two times a week on average. Reasons for eating out included "easy accessibility." Those students who cited this reason were more likely to choose fast-food and food delivery (Seymour et al., 1997; Hertzler and Frary, 1992).

Half (14) of the participants reported following specific diets; however, none were doctor-prescribed. Two participants who answered "yes" to following a specific diet did not mark whether a doctor prescribed it or not. However, these participants might have chosen to follow these diets on their own as no one mentioned doctor-prescribed diets in any of the focus group discussions. Most participants who reported following a specific diet were watching not one aspect, but a combination of factors such as fat, cholesterol, and kilocalories (in terms of weight loss). In a study conducted by Chapman et al. (1995), one-third of the women participating in that study had negative attitudes towards dairy intake, and this reflected concern about kilocalories and cholesterol. Many women believed that dairy foods were high in kilocalories and cholesterol, discouraging them from consuming dairy products. Chapman et al. (1995) also reported a significant increase in cottage cheese, milk, and yogurt intake occurred when women limited their caloric intake due to concern about body weight. Focus group discussions revealed that the majority of participants (10) in this study were concerned with fat, especially those in the UVA and JMU groups. Two participants in the VT group reported watching their sodium intake; however, sodium was not mentioned in the focus group discussion.

Another specific diet that participants were asked about was a vegetarian diet. The majority of women (24) reported they did not follow this type of diet. The four who did follow this diet excluded foods such as meats (in general), and red meat from their diets; one participant also excluded milk from her diet. Weaver et al. (1997) reported that women who followed vegetarian diets were more likely to be concerned about energy intake and to have more favorable attitudes towards vegetarianism and eliminated red meat from the diet. Furthermore, research by Georgiou et al. (1997) supports the notion that among young adult females, red meat consumption tends to decrease with a college experience.

Fourteen of the twenty-eight participants reported that they were currently taking a vitamin/mineral supplement. This question was asked on the questionnaire as well as during the focus group discussions. Over half (5) of the JMU group reported taking supplements; whereas, the other groups each had 3 participants who took a supplement.

Research indicates that some common reasons for taking supplements include: to increase energy, to prevent colds and other illnesses, and to make up for what is not in food (Eldridge and Sheehan, 1994). These reasons were also common responses from focus group participants when explaining why they took supplements. Eldridge and Sheehan (1994) found that among college students, vitamin and mineral supplements are reportedly used by approximately half of the population.

Participants were asked if they had ever taken a college level nutrition course. Twenty-five reported they had never taken a nutrition course. Two participants who had taken a nutrition course were in the UVA group. The other participant who reported taking a nutrition course was in the JMU group and the Anthropology/Nutrition major. These findings were important to note, since all of these schools offer introductory nutrition courses. For many college students, an introductory nutrition course may be the only formal exposure to nutrition education during college years or later in life. Skinner (1991) reported that significant dietary changes occurred pre- to post-instruction for college females enrolled in such a class. Dietary changes included decreased intakes of calories and fat and an increased intake of calcium.

Dairy Foods Consumption Checklist

The *How Much Dairy Did You Eat Yesterday?* checklist consisted of thirteen dairy foods that were good sources of calcium. This checklist included only dairy sources of calcium so that the researcher could get a general indication of each participants' daily dairy food consumption. Results from this checklist are presented in two ways. First, the total number of participants in each focus group consuming $\leq$ 1, 2, 3, and $\geq$ 4 servings of dairy foods the previous day is shown in Table 4. Results indicate that approximately half of the participants (12) consumed $\geq$ 4 servings of dairy foods on

Table 4 - Number[a] of participants in each focus group consuming various numbers of servings of dairy foods in one day[b]

	Focus Group Site				
Number of dairy food servings	WM[c]	UVA	JMU	VT[c]	Total
≤ 1	1	1	1	0	3
2	0	2	2	1	5
3	1	2	2	0	5
≥ 4	5	2	2	3	12
Total	7	7	7	4	25

[a] n = 25 participants

[b] Number of servings determined with the *How Much Dairy Did You Eat Yesterday?* checklist.

[c] One participant from the WM group, and two participants from the VT group did not complete a checklist.

the previous day. Neumark-Sztainer et al. (1997) reported that among adolescent girls, 56% of dietary calcium was supplied by milk and milk products, and an additional 21% came from milk as an ingredient in other foods such as pizza.

The WM, UVA, and JMU focus groups each had one participant who reported consuming $\leq$ 1 serving of dairy foods on the previous day. The UVA and JMU groups each had four participants consuming between 2-3 servings a day, the USDA's minimum recommended number of servings (USDA and DHHS, 1995). The WM and VT groups each had one participant who consumed between 2-3 servings in a day. The other participants (12) ate 4 or more servings in a day. Results differ from those reported by Georgiou et al. (1997). In that study, most college-age women consumed less than 2-3 servings of dairy foods a day, regardless of student status (undergraduate, graduate, or non-student). Nonetheless, these results are important to note, because 3 participants were consuming inadequate amounts of dairy food. Ten participants were consuming the minimum recommended level, but might consume more to ensure adequate calcium from dairy sources. Overall, focus group discussions seemed to indicate that participants were consuming dairy foods. However, it is important to keep in mind that this activity only represents women's eating behaviors on the previous day. The number of servings of dairy foods consumed by each woman might not reflect a typical day. The checklist was also administered after the group discussions and might be biased. The value of this activity comes from the particular dairy foods that women reported they consumed.

The number of women consuming particular dairy foods on the previous day are shown in Table 5. Although many participants seem to be receiving the recommended number of servings of dairy foods each day, it is important to note the actual dairy foods as this indicates the variety of dairy foods that were consumed. Results indicate that the dairy foods consumed most often by women included milk (skim, lowfat, or whole) (13), yogurt (9), processed cheese (8), grated cheese (12), cheese pizza (7), and frozen yogurt (7). Although cheese is a rich source of calcium, it also tends to be higher in fat content. Throughout all focus group discussions, many reported concerns related to the fat content in dairy foods. Weaver et al. (1997) reported that concern about fat and energy in dairy

Table 5 - Total number of participants consuming specific dairy foods in one day as determined with the *How Much Dairy Did You Eat Yesterday?* checklist.

	Focus Group Site				
Dairy food	**WM**[a] (n=7)	**UVA** (n=7)	**JMU** (n=7)	**VT**[a] (n=4)	**Total** (n=25)
8 ounces milk (300 mg)	5	4	1	3	13
8 ounces yogurt (350 mg)	4	2	2	1	9
½ cup ricotta cheese (200 mg)	0	0	0	0	0
10 ounces milkshake (200 mg)	1	0	0	1	2
2 slices processed cheese (200 mg)	2	2	3	1	8
1 ounce hard cheese (200 mg)	0	2	1	1	4
1/3 cup grated cheese (200 mg)	4	1	5	2	12
1 cup frozen yogurt (200 mg)	3	1	3	0	7
1 cup cottage cheese (50 mg)	1	1	2	1	5
½ cup soft serve vanilla ice milk (200 mg)	0	0	0	0	0
½ cup pudding (150 mg)	1	1	1	0	3
1 slice medium cheese pizza (250 mg)	1	3	1	2	7
1 medium cheeseburger (110 mg)	0	0	0	0	0

[a] One participant from the WM group, and two participants from the VT group did not complete the checklist.

foods was correlated with lower intakes of energy, fat, and cholesterol for college students. Some focus group participants did mention use of low fat products. The checklist did not indicate any reduced fat product versions, but some of the foods were lower fat items. Eddy (1997) reported that educated, older women (ages 65+ years) thought dairy foods were high in fat. Finn (1997) reported that young adult women perceived dairy foods as "fattening". Research also has shown that with nutrition counseling, teenage girls and women can increase their intake of dairy products without experiencing a change in percentage of body fat, percentage of energy from fat, weight gain, or increase in cholesterol (Finn, 1997).

It was surprising that 13 women consumed milk, a rich source of calcium for the body. The WM group comprised almost half of the women who consumed milk (5) and yogurt (4). The VT and UVA groups had similar numbers of women who drank milk (3 and 4, respectively). Only 1 participant in the JMU group reported consuming milk, but this was expected since the majority of participants reported throughout the focus group discussion that they disliked milk. However, this was the group that reported the highest number of women eating cheese (9) and cottage cheese (2). The women from the WM and UVA groups also reported they consumed cheese (6 and 5, respectively). These results are similar to reports by Neumark-Sztainer et al. (1997), indicating that 13% of the girls studied reported they did not drink milk or consume milk products, such as cheese and yogurt, daily.

Listing Dairy Foods Activity

Participants were asked at the beginning of the focus group discussions to make a list of different types of dairy foods, and the list was used to focus women on a variety of dairy foods throughout the discussions. Through the use of this activity, some misconceptions about dairy foods were identified. In the WM and JMU groups, participants suggested eggs and/or margarine as dairy foods, but it was clear that not all participants shared these misconceptions, as others questioned these items.

During the listing process, some of the predominant themes of the focus group discussions emerged. Low fat products such as skim milk and frozen yogurt, were

mentioned. Mention of cheeses, cream-based soups, and casseroles, elicited concerns with fat content.

Lists from all focus groups were very similar; participants often listed common dairy foods such as milk, cheeses, yogurt, ice cream, and cottage cheese. Participants also listed dairy foods used as food ingredients in pizza, lasagna, casseroles, cream soups, and other foods containing milk and cheese. The WM and VT groups generated very detailed lists, with participants in both groups listing complex foods such as turkey tetrazzini, fettucine alfredo, and Ruby Tuesday's® cream of broccoli and cheese soup. The VT group listed cakes and foods where dairy products are only used in minimal amounts. The JMU group generated the shortest list, which included mostly common dairy foods such as milk, cheese, yogurt, ice cream, cream cheese, cottage cheese, and pudding.

Focus Group Dynamics

Focus group dynamics, such as size of the group, relationships among participants, and interactions within each group, affect participants' responses to focus group questions. Interpretation of responses depends on the context in which they occur (Krueger, 1994); therefore, dynamics of each group are reported.

College of William and Mary Focus Group

The WM focus group was held at a university-owned apartment which was the residence of five of the eight participants. The focus group was conducted in the kitchen. The participants sat around the kitchen table which was large and rectangular. The assistant moderator sat off to the side of the room to take notes. The environment was distracting at times because people would come in and out of the apartment, and the phone would also ring. Despite the noise, the participants remained very involved in the discussion. One participant had to leave early, so she did not complete a *How Much Dairy Did You Eat Yesterday?* checklist. The majority of participants were upperclassmen (juniors and seniors) and seemed comfortable speaking in a group setting as they discussed issues openly.

The College of William and Mary, a state-assisted liberal arts university, is located in Williamsburg, Virginia, approximately 150 miles south of Washington D.C., and midway between Richmond and Norfolk, Virginia. It has an enrollment of 7,700 of which approximately 5,500 are undergraduates (1997). The majority (5,153) of the enrollment is from Virginia; only 33% are from out of state; however, the majority of women participating in this focus group were from other states. Out-of-state students are from states that include primarily Connecticut, Florida, Maryland, Massachusetts, New Jersey, New York, and Pennsylvania, and this corresponds with the findings from the focus group participants in this group (The College of William and Mary, 1998). Four of the out-of-state participants in this focus group were from four of the states listed; the other two came from Vermont and Oregon. Seventy-eight percent of William and Mary students live in campus-owned housing; only 22% live off campus. The average age of full-time students was reported to be 20 years old. First year students are required to live on-campus and have a meal plan. Types of dining include food courts and a traditional cafeteria (The College of William and Mary, 1998).

University of Virginia Focus Group

The UVA focus group included seven college women and was conducted at a townhouse which was the residence of the contact who helped recruit participants for this group. The focus group was held in the living room which was closed off to other rooms on the same floor. Participants sat on sofas that were close to each other. This location was very quiet and without distractions. This group was more reserved than the WM group, requiring the use of more probes to elicit desired responses. Overall, however, participants responded when prompted. Participants appeared to be acquaintances as they talked amongst themselves before the group began. After the focus group discussions, some participants explained to the moderator the pressures of “appearance” at their school. Participants seemed frustrated with this pressure, as many explained they felt guilty if they did not “work out” everyday or eat “healthy” all the time. This group was the only one to bring up these issues, and these issues related to their immediate environment.

The University of Virginia is a public, predominantly Liberal Arts university, although it has a large Engineering college as well as a college of Health Sciences. It is located in Charlottesville, Virginia. Student enrollment for the 1997-98 academic year was 18,279 of which 12,296 were undergraduates. Approximately 72% of undergraduate students are "white American," and 66% are Virginia residents. All focus group participants from this university were from Virginia. There are roughly equal numbers of women and men (53% women; 47% men) enrolled at the university. The average age of undergraduate students is 19.6 years. Only 49% of students at UVA live in university housing (University of Virginia, 1997). In this focus group, all participants lived off-campus.

The University of Virginia also offers a variety of meal plans to students. Plus Dollars are the "currency" at retail locations as well as in dining halls. It is similar to a debit account. Semester based meal plans include weekly meals. On-campus students are required to have a meal plan (University of Virginia, 1997).

James Madison University Focus Group

The JMU focus group included seven college women and was conducted at a sorority house located on the college campus. It was held in the basement in an activity room which was a large open room with sofas arranged on one side of the room in a rectangular fashion. Participants sat on the floor in a circle, leaning their backs against the sofas. The location was distracting at times because the room was so large. Although the group was separated from the rest of the room, another meeting was taking place in the opposite corner of the room. Participants seemed to stay focused; however, this group seemed less responsive than the other groups, and many probes were used to get them to elaborate on responses to questions.

Participants were all sorority members, and the majority (4) were sophomores. Participants seemed to be acquainted with one another due to their sorority connection. They expressed more misconceptions about dairy foods than the other focus groups, such as the belief that margarine was a dairy product, and the statement, *"it [dairy foods] gives*

you cellulite." Overall, they talked more about the characteristics of specific dairy foods they liked or disliked, and not much about ideas for improving/developing a dairy product. They seemed to be less creative than other groups in this area.

James Madison University, primarily a Liberal Arts university, is located in Harrisonburg, a city of 35,000. This location is only a two-hour drive from Richmond, Roanoke, and Washington, DC. It has an undergraduate student enrollment of approximately 12,551 as of 1997. This university has a slightly higher ratio of women to men (56% to 44%). The majority of students are from Virginia (69%), drawing heavily from the Northern Virginia area, specifically Fairfax County. Only 31% are out-of-state students, mainly from Maryland, New Jersey, Pennsylvania, and New York (James Madison University, 1998). The one out-of-state participant in this focus group was from Maryland. Only 11% of students are minorities. Approximately 55% of students live in apartments off-campus (compared to 83% nationwide). Fifty percent of these students living off-campus have some sort of housing contract with JMU. The typical off-campus student was reported to be a full-time, in-state student (James Madison University, 1998). The majority of participants in this focus group lived on-campus; a finding that differed from school-reported living arrangements. James Madison University offers a wide variety of meal plan options to students living on-campus or off-campus in the form of weekly plans, as well as Dining Dollars or Flex Dollars, both of which operate similar to a debit account (James Madison University, 1998). Meal service arrangements include dining halls and food courts.

Virginia Tech Focus Group

The VT focus group was conducted at an off-campus townhouse which was the residence of three of the six participants. It was held in the living room which was separate from other rooms. The participants sat on chairs and sofas around the room, with two participants sitting in chairs further away from the others. This location was distracting at times as the phone rang and a neighbor came inside to greet participants. Despite these distractions, participants stayed involved in the discussion.

Participants in this group were all upperclassmen, and were extremely verbal and open, contributing their thoughts, opinions, and feelings often to the discussion. They also seemed comfortable in expressing differing opinions to each other. Extensive probing was not needed with this group, but the moderator had to steer participants back to the questions at times to keep the discussion focused. These women also provided low-fat cooking tips to one another, and two participants expressed particular frustration regarding health claims made on food packaging. Such claims included "fat free," "non fat," "low fat," and "reduced fat." They were frustrated that these claims sounded similar, but in fact meant very different things. Two participants had to leave the discussion early and did not complete a *How Much Dairy Did You Eat Yesterday?* checklist.

Virginia Tech is a public, Land Grant University located in Blacksburg, Virginia, a town approximately 40 miles from Roanoke. It is the largest university in Virginia, oriented towards research, teaching, and extension with programs of study such as Agriculture and Human Resources (Home Economics) that are not offered at the other schools. As of Fall Semester 1996, Virginia Tech's undergraduate enrollment was 19,951 of which 17,578 students were white. The number of undergraduate students that were in-state was 15,384, whereas out-of-state enrollment was 5,346. The majority of in-state students came from Northern Virginia (5,346), followed by the Southwest and the Tidewater regions. All focus group participants were from Virginia (3 of 5 from Northern Virginia), except for one woman who was from Pennsylvania. Only 7,952 undergraduate students lived on-campus, while 12,573 lived off-campus, mainly in the Blacksburg area (Virginia Tech, 1998). Those results agree with the living arrangements of the focus group participants, as five of the six participants lived off-campus.

Virginia Tech offers a variety of meal plan options to on-campus as well as off-campus (commuter) students. All have the option of weekly meal plans. Off-campus students only can buy semester plans or a "less than 10 meal per week" plan. Virginia Tech also offers Dining Dollars and a Flex plan to all students. These are similar to debit accounts. All students living on-campus are required to have a meal plan (Virginia Tech,

1998). Meal service arrangements include dining halls, food courts, and fast-food establishments.