

CHAPTER III: METHODS

Introduction

The focus group technique was used in this study, because it is a method that allows for insight into college women's attitudes and beliefs regarding dairy food choices. This insight would not have been possible if more quantitative methods, such as questionnaires, were used. In this study, two pilot tests followed by five focus group discussions were conducted. This study was approved by the Institutional Review Board for Research Involving Human Subjects at Virginia Tech. All subjects signed an informed consent form prior to participation in either a pilot study or focus group discussion (Appendix A).

Pilot Tests

Two pilot tests were conducted with two groups of college women (ages 18-24). Recruitment of participants was done through the researcher's use of personal contacts at Virginia Tech. On September 23, 1997, the first pilot test was conducted with a group of 5 female college students enrolled at Virginia Tech. These students all lived in the same dorm; therefore, the discussion was held in a dorm lounge. Another pilot test was conducted on November 4, 1997, with 2 females enrolled at Virginia Tech who lived in an off-campus apartment. The discussion was held in the apartment living room. The researcher served as the moderator for each pilot test group. A series of open-ended questions were tested; these questions were a modification of questions previously developed by Eddy (1997) to examine older women's (ages 65+) perceptions of dairy foods. Prior to the first pilot test, these questions were modified to make them more appropriate for college women, and to elicit information regarding their perceptions, feelings, opinions, and thoughts that influenced dairy food choices. Questions were developed to address factors such as advantages and disadvantages of dairy foods, factors that influence consumption, and possibilities for product improvement. Food choice models were also considered in development of the questions.

Basic understanding, clarity of each question, and the ability of the questions to elicit desired information were determined based on responses from each pilot test. After the first pilot test, the researcher met with graduate committee members for suggestions and modifications of focus group questions and activities in order to elicit desired information. These recommendations were used, and a sequence of 18 open-ended questions were developed and tested during the second pilot test. Information from this group was then used to make final modifications to the focus group questions, activities, and format. Each pilot test lasted approximately one hour. The *Introductory Ranking Activity* and *Dairy Foods Listing Activity* were carried out according to procedures used by Eddy (1997). Modifications to the terms used in the ranking activity were changed to make the terms more pertinent and understandable to college women (Appendix B).

The *How Much Dairy Did You Eat Yesterday?* checklist was administered to each participant after the closing question of each pilot test. Participants were required to indicate the number of servings that they consumed on the previous day for each of the dairy foods listed in the checklist. The checklist was developed by the researcher and committee members after the first pilot test. The checklist used in this study was designed to obtain a general idea of college females' dairy food consumption for the previous day. It also provided an overall picture of the specific dairy foods that constituted the majority of servings participants consumed. It was adapted during the pilot testing period from two activities, *How Much Dairy Did You Eat Yesterday?*, from The American Dietetic Association (Pierre, 1997), and the *Calcium Checklist—Food Guide Pyramid*, (Hertzler, 1996). These two activities were used to formulate a checklist that consisted only of dairy food sources of calcium and the serving sizes for each, since this study specifically pertained to college women's perceptions of dairy food choices. The researcher could use this information to compare number of servings consumed by the participants with the 2-3 servings of dairy foods a day recommended by the USDA (USDA and DHHS, 1995). The checklist of dairy foods included common foods such as milk, cheese, and yogurt. It also included some lower fat items such as cottage cheese,

vanilla ice milk, and frozen yogurt, as well as foods containing dairy, such as pizza and cheeseburgers. The complete checklist that was used during focus group interviews can be found in Appendix B. After completing the checklist, participants then filled out a socio-demographic questionnaire to obtain information about each participant, such as age, year of school, academic major, living arrangement, meal preparation, eating out practices, and hometown (Appendix C).

Procedures recommended by Krueger (1994) worked well during pilot testing and were used throughout the focus group discussions. Probes for some questions were not effective in eliciting desired information; therefore, some probes were modified to be used as focus group questions. Probes accompanied each question as part of the moderator's guide. Final questions and probes that were used in the focus groups are included in the moderator's guide presented in Appendix D.

Recruitment of Focus Group Participants

Participants recruited for the focus groups were non-Hispanic, single, white females, 18-24 years of age, and currently enrolled in a state-funded Virginia college or university. These women were willing participants in focus group discussions about dairy foods and were responsible for purchasing and/or providing their own meals, including use of a college meal plan, preparing meals off campus, or both. Women were recruited from four colleges and universities across the state and lived either on or off campus. It was important to include a mix of female students living on and off campus, because different living arrangements will provide an overall picture of what influences college women's dairy food choices as well as different eating habits. The researcher recruited students through the use of personal contacts at each site. The researcher called each contact and discussed the purpose of the study and recruitment criteria, requesting between 5-10 women for each group. Contacts were also asked not to recruit women with a health-related major such as Foods and Nutrition or Nursing to minimize bias in results. Students in these programs of study would be familiar with osteoporosis and the importance of an adequate calcium intake. This knowledge could influence their

perceptions, feelings, thoughts, or opinions concerning dairy food choices; thus influencing other participant responses during the discussion. The researcher confirmed focus group meetings with the contacts approximately one week in advance of the date for the group. Participants were then reminded of the focus group 2-3 days in advance by the personal contact at each site to confirm attendance. Approximately 6-9 women were recruited for each group. Refreshments were provided during each focus group, and frozen yogurt coupons were used as additional incentives.

The first focus group took place on February 2, 1998, at the College of William and Mary in Williamsburg. Nine women participated in the group. The second focus group took place on March 2, 1998, at Radford University in Radford, with six women participating; however, four of the six women did not meet the recruitment criteria for this study, as they were not non-Hispanic white women. The third focus group was conducted on March 30, 1998, at the University of Virginia in Charlottesville, and included seven female participants. The fourth focus group took place on March 31, 1998, at James Madison University in Harrisonburg, and also included seven participants. A fifth focus group was conducted on April 23, 1998, at Virginia Tech in Blacksburg, with six participants who did not participate in pilot testing. This group was held to replace the Radford focus group, since the majority of the participants in that group did not meet the recruitment criteria, as previously stated. For that reason, the information from the Radford focus group was disregarded.

Focus Group Procedures

The principle researcher served as the moderator for the focus groups and facilitated the discussions. An assistant moderator was present at all focus group discussions to take notes, observe group interactions, and operate the audiocassette recorders. The assistant moderator was a graduate student in the Department of Human Nutrition, Foods and Exercise at Virginia Tech. Focus group dialogue was recorded using two audiocassette recorders. Participants were informed that their responses were being recorded for purpose of reporting results only and that tapes were kept confidential.

Focus groups were conducted at the homes of focus group participants, site contacts, or in a university-owned facility such as a sorority house.

Sessions began with a welcome and brief overview of the topic and ground rules (Appendix E). Welcome and ground rules were modeled after those described by Krueger (1994) and used by Eddy (1997). Following the introduction, informed consent was obtained from participants before proceeding with the discussions. The two audiocassette recorders were turned on, and the sessions began with participants introducing themselves, and sharing their favorite as well as most frequented restaurant in their place of residence (at home and/or school). A seating chart of participants at each site was drawn by the assistant moderator to assist in understanding comments in later analysis; no names of participants were used in the analysis. Eighteen questions developed during pilot testing were asked. Table 1 presents the basic line of focus group questioning.

Two written activities and one oral activity were included in the focus group discussions. The written activities were distributed to the women and directions were read aloud by the researcher to clarify the activity instructions. Responses from activities were shared and discussed upon completion. The initial activity, the *Introductory Ranking Activity* addressed factors that influenced general food choices. The four factors (healthy, tastes good, convenient, and inexpensive) were ranked based on importance. Participants then shared their choices with the group as well as the reasons that supported their choices. This activity served as an ice breaker to start women thinking about food choices and to familiarize them with focus group discussions. It also provided the researcher with an understanding of what these factors meant to participants in terms of food choices. After this activity, participants were asked to generate a list of dairy foods. The assistant moderator recorded the foods mentioned on poster paper, and this list

Table 1 - Focus Group Questions^a

1. **INTRODUCTORY RANKING ACTIVITY** (Factors that Influence General Food Choices): Let's go around the room again so everyone can share what they ranked as most important and explain why it received the highest ranking.
2. **DAIRY LISTING ACTIVITY**: We are going to start by making a list of the different types of dairy foods, so that you can refer back to them throughout the discussion.
3. What are some dairy foods you ate regularly over the past few months?
4. What are some dairy foods you seldom or never eat?
5. What are some reasons you've chosen to eat dairy foods when you eat out?
6. What are some benefits to you of eating dairy foods?
7. What are some disadvantages of eating dairy foods?
8. Think about the dairy foods you ate as a child. How have you changed the type and amount of dairy foods?
9. Think about yourself when you are your mother's age. What kind of dairy foods do you think you will be eating?
10. Think about yourself when you are your grandmother's age. What kind of dairy foods do you think you will be eating then?
11. How do you think dining halls and/or restaurants could improve the types of dairy foods available?
12. How do you think food industry could improve dairy foods bought at grocery stores?
13. What ideas do you have for a totally new product?
14. What does the term osteoporosis mean to you?
15. If you take a calcium supplement, what are some reasons you take one?
16. Think about the ads you see about dairy foods on the TV, radio, and in magazines. Tell me about some of these.
17. **"HOW MUCH DAIRY DID YOU EAT YESTERDAY?" CHECKLIST**: Use the following checklist provided and mark the number of dairy foods you ate yesterday.
18. Is there anything else you'd like to add that was not covered here today?

^aBasic line of questioning; a complete interviewer's guide is in Appendix D.

served as a reference for the participants to help focus them on a variety of dairy foods throughout the discussion. This activity also helped to clarify foods that constituted dairy foods, and familiarize women with speaking in a focus group setting. During pilot testing, a basic list of dairy foods compiled by Eddy (1997) was expanded and used by the researcher (Appendix F). If some items were not mentioned by the participants, the researcher suggested them to participants. At the end of the focus group discussions, the *How Much Dairy Did You Eat Yesterday?* checklist and the socio-demographic questionnaires were administered.

During the focus group meetings, an informal style was used to encourage open participation. First names were used, and participants were free to speak at any time. Efforts were made to address the more reserved members of the groups in order to encourage their participation and input. The focus groups lasted approximately 45 minutes to one hour. Following each focus group there was a debriefing session between the moderator and assistant moderator. Overall impressions, repetitive themes, non verbal behavior and participant characteristics were identified and noted. Brief summary reports were written by the moderator based on the results of the debriefing sessions.

Analysis of Focus Group Data

Data generated from the four focus group discussions were analyzed according to procedures described by Krueger (1994) and Knodel (1993). First, tapes of each focus group discussion were transcribed according to procedures used by Eddy (1997) and described by Krueger (1994). These transcripts contained qualitative data used in analysis. Transcription was done by the moderator, and transcripts were checked for completeness and accuracy by an assistant analyst, an undergraduate student in the Department of Human Nutrition, Foods and Exercise at Virginia Tech. Before transcribing, the moderator listened to each tape to become reacquainted with the flow of dialogue. In order to develop a written record of the focus group discussions, responses were directly transcribed with a word processing program while listening to the tapes. The moderator listened to and rewound each tape multiple times to transcribe participants' responses. Pages in the four transcripts, one per focus group, were

numbered consecutively in the order that the focus groups were conducted. All pages were coded with initials that were the common college or university abbreviations (WM, UVA, JMU, VT). When transcription was complete, the assistant analyst listened to the focus group tapes and verified that all verbal dialogue had been accurately transcribed.

The next step was to generate preliminary codes, as described by Knodel (1993) that were used in the initial stages of analyzing qualitative data in the transcripts. Specifically, these codes represented general or broad themes and were used for grouping similar responses from the transcripts into those general themes. These preliminary codes were developed based on study objectives, food choice models, and results reported by Eddy (1997). Focus group notes and summaries were reviewed by the moderator, and frequently mentioned opinions were used to develop initial codes. Transcripts also were read by the moderator to further identify preliminary codes and patterns. The researcher read the transcripts and used the initial codes to sort the responses in the transcripts. Each response was accompanied by the initials and page number of the original transcripts, which allowed the researcher to easily refer back to the quote in the context in which it occurred. Throughout the analysis, the preliminary codes were refined and broken down into codes representing subthemes (Krueger, 1994; Knodel, 1993). Once coding and categorizing was completed, results were reviewed by the moderator and research advisor, and final codes were developed. These final codes represented the themes and subthemes used in reporting the results. These themes and subthemes are reported in Table 2 and were grouped into 4 major categories: 1) health and nutrition perceptions of dairy foods, 2) external influences on dairy food consumption, 3) characteristics of dairy products, and 4) ideas for product improvements. Data from the *How Much Dairy Did You Eat Yesterday?* checklist were analyzed in two ways. First, the number of dairy food servings consumed by each participant was calculated. These number of servings were used to group participants into those consuming ≤ 1 , 2, 3, or ≥ 4 servings of dairy the previous day. The number of servings of

Table 2 - Focus Group Themes Grouped into Four Major Theme Categories

Health and Nutrition Perceptions of Dairy Foods

Calcium
Osteoporosis
Calcium Supplementation
Fat
Cholesterol
Sodium
Kilocalories
Lactose Intolerance (“Digestive Problems”)
Other Health Perceptions

External Influences on Dairy Food Choices

Mother’s Influence
Family Influence
College Lifestyle
Media Influences

Characteristics of Dairy Products

Sensory Characteristics
Convenience
Cost

Ideas for Product Improvements

Packaging
Product Convenience and Availability
New Product Ideas

specific dairy foods (from the checklist) consumed by all participants were calculated and reported. The number of participants at each site who responded to the various items on the socio-demographic questionnaire was also calculated.

Reporting of Results

Focus group themes were reported with the interpretative summary method used by Eddy (1997) and described by Krueger (1994). This method included a descriptive summary of each theme followed by illustrative quotations for emphasis and clarity. Numbers and percentages of responses were not used as they are not appropriate for focus group research; instead, adjective phrases such as those suggested by Krueger (1994) were used. Results of focus group discussions were derived from the analysis of all focus groups collectively, although differences in prevalent themes between groups were also noted and discussed.

Results are reported and discussed in Chapters IV-VI. A description of the college women participating in the focus groups is provided in Chapter IV. Included in that chapter are the socio-demographic characteristics of participants, the dairy food consumption findings, focus group dynamics, and specific characteristics of each college and university. The data from the socio-demographic questionnaire were compiled for each focus group, and then for all groups. Number of responses to each question were reported.

Focus group themes are reported and discussed in Chapters V-VI. Results from the *Introductory Ranking Activity* were reported with focus group themes, since the data obtained from this exercise were important in understanding influences on dairy food choices. Conclusions for the study are reported in Chapter VII. This chapter includes a discussion of suggestions for nutrition education of college women, ideas for product improvements and/or developments, and suggestions for additional research based on the results of this study.