

Using Focus Group Interviews to Assess Food Behavior and Needs of Nutrition Education for Female University Students*

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ABSTRACT

In this study, focus group interviews were used to investigate female university students' eating behavior, factors related to eating behavior, information sources for nutrition, and formats for nutrition education. Thirty-six students participated in one of five focus groups during December 1998 in Seoul. Focus group discussions were video, audio-taped, transcribed and analyzed by major themes. Results showed that subjects have undesirable eating behaviors, such as eating irregular meals and skipping meals. These behaviors are caused by a lack of time, habit, or for the purpose of losing weight. The students tended to have unbalanced diets and frequently ate out. They had a large amount for dinner and frequently snacked when stressed or had an empty stomach. Most of them were interested in weight control and had attempted to lose weight, but they did not participate in regular exercise. The most frequently used source for nutrition information was the mass media, but much nutrition information was based on what they learned from home economics class during middle to high school. They received more support from mothers, elder sisters, and friends for eating behaviors, such as lowering caloric intake and losing weight. In nutrition education, they wanted to learn behavioral skills to adopt healthy behaviors, including meal planning, applying scientific weight control methods, exercises that fit into their lives, and stress management. They also mentioned that nutrition screening and assessment should be a part of nutrition education programs. As a method for nutrition education, subjects preferred an individualized approach to group education. These results provide the qualitative information for developing nutrition education programs which will be implemented for Korean University students. (*J Community Nutrition* 1(1) : 25~32, 1999)

KEY WORDS : eating behavior · needs assessment · female university students · focus group interview.

Introduction

It is important for young adult women to develop healthy lifestyles and eating habits, because they will continue in a later life. Numerous dietary intake studies, however, consistently revealed that diets of young Korean adults are deficient in nutrients such as calories, calcium, iron and vitamin A (Son & Sung 1998 ; Oh et al. 1996). In addition, young adult women have a greater desire for thinness and show a higher interest in body image than any other age group. This leads them to have poor eating behaviors and undesirable food consumption

patterns (Hendricks & Herbold 1998 ; Kim et al. 1997 ; Kim et al. 1998 ; Koszewski & Kuo 1996 ; Son & Sung 1998 ; Won 1998). Their eating behavior is represented by frequent eating-out and irregular meal patterns.

For nutrition education to be effective, factors influencing food behavior should first be investigated. Studies regarding dietary intake or needs assessment in Korea, however, were primarily performed using quantitative methodology, by applying dietary intake surveys or questionnaires (Hong et al. 1993 ; Kim 1997 ; Kim & Im 1998 ; Park et al. 1997 ; Won 1998). Qualitative methodology provides more in-depth information that might not be obtained from quantitative research.

Focus group interviews, one type of qualitative research methodology, has recently received attention in nutrition research. The focus group interview is a qualitative research technique used to obtain data about feelings and opinions of small groups of participants about a given problem, experience, or service (Basch 1987). The focus group interview is designed to stimulate group in-

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teraction and is generally done with 8–15 participants. A moderator or co-moderator leads group discussions, usually with an interview guide or open questions. Participants are asked to respond with their views and ideas regarding particular topics or services. Data generated from group interactions provides rich information regarding specific topics (Basch 1987; Betts et al. 1996; Krueger 1994; MacDougall & Baum 1997).

The use of focus group interviews has been increasing in health and nutrition education research. This method has been used widely for needs assessment (Reed et al. 1998), developing and pretesting education materials and videos (James et al. 1997; Shepherd et al. 1994; Skinner et al. 1997), and evaluating education programs (Dodds et al. 1996).

The purpose of this study was to investigate food behavior, factors related to food behavior, sources of nutrition information, and needs for nutrition education (topics, formats, etc.) among female university students, using focus group interviews. This was designed to provide valuable information for developing effective nutrition counseling or education programs for young adult women.

Subjects and Methods

1. Subjects

Subjects were students of a university located in Seoul, Korea. A convenience sample of participants was recruited by announcements posted around the campus (library, building lobbies, bookstores, bulletins, etc.) and through the internet (university homepage). These announcements were made a month prior to conducting focus group interviews (FGI). Forty students initially volunteered, however, four students could not participate in the study due to health or other reasons. Five focus group interviews were conducted with 36 students for three days during December, 1998. Focus groups consisted of 5 to 10 students.

2. Data collection and analysis

Focus group interviews were performed in a quiet, small classroom. Before conducting discussions, the investigator explained the purpose of the FGI and got permission to use audio-, video- recording. Each session lasted for an hour and a half on the average. Focus group interviews were led by a trained moderator, following the

method suggested by Krueger (1994). The investigators developed the interview guide (Table 1) based on literature (James et al. 1997; Moreno et al. 1997; Skinner et al. 1997). The interview guide included questions eliciting food behavior, information sources and social support for nutrition, needs for nutrition education (formats, subjects, etc.). The moderator made notes during discussions. A small gift was given to each participant at the end of the session.

According to the methods of Krueger (1994) and Stewart et al. (1994), data were completely transcribed based on notes and tapes after conducting focus group interviews. Nonverbal behaviors such as smiling and nodding were also noted. From the full text of transcribed data, the list of themes and major categories were coded and identified. The frequency of themes and subthemes that were

Table 1. Questions for focus group sessions

| A. Eating behaviors | |
|--|--|
| 1. | What do you think is your eating problem? (Could you tell me about any changes in food habit after entering university?) |
| 2. | What prevents you from eating healthy? |
| 3. | Would you tell me about your meals? (types of food at breakfast, lunch, dinner, snacks; Reasons of skipping meals, etc.) |
| B. Information sources and social support | |
| 1. | Where do you get nutrition information? What kinds of nutrition information do you get? |
| 2. | Who influences your eating habits? |
| C. Needs for nutrition education programs | |
| 1. | What kind of topics do you want in nutrition education? |
| 2. | Which format do you prefer in nutrition education? (methods, materials, etc.) |

Table 2. General characteristics of subjects

| Variables | n(%) |
|--------------------|--------------------------|
| Age (yrs) | 21.4 ± 1.8 ^a |
| Height (cm) | 163.0 ± 3.3 ^a |
| Weight (kg) | 51.3 ± 4.4 ^a |
| Major | |
| Liberal arts | 7(19.4) |
| Social science | 5(13.9) |
| Natural science | 21(58.3) |
| Arts | 3(8.3) |
| School year | |
| Freshman | 3(8.3) |
| Sophomore | 9(25.0) |
| Junior | 14(28.9) |
| Senior | 10(27.8) |

n=36 a : mean ± S.D.

mentioned were also counted. However, the tally of responses were only used to make it certain if they were themes or subthemes, rather than to show quantitative information. Actual quotes that represent subjects' view or opinions are shown in italic print throughout this paper.

Results and Discussion

1. General characteristics of subjects

General characteristics of subjects who participated in the FGI are presented in Table 2. Mean age of subjects was 21.4 ± 1.8 years. Mean height and weight were 163.0cm, 51.3kg, respectively, which were similar to the Korean standard for females aged 20–24 years(162cm, 52kg) (Korean Dietetic Association 1995). The body mass index of subjects was 19.3. When subjects were examined by major, more than half were those enrolled in natural science(58.3%), followed by those who were studying liberal arts(19.4%).

2. Eating behavior

1) Eating problem

Table 3 presents results(themes) regarding eating behavior from the FGI. Subjects commented that a major eating problem were irregular eating habits, skipping breakfast, eating-out, snacking frequently, and common consumption of instant foods. These are consistent with previous studies(Hong et al. 1993 ; Kim et al. 1997 ; Kim & Lee 1996 ; Koszewski & Kuo 1996). They also mentioned a vicious cycle of overeating at night, skipping breakfast and snacking, as reported by Park et al.(1997).

Subjects tended to overeat when they were served delicious food, or had meals at buffet restaurants. In addition, they were more likely to overeat in situations when they gave up dieting ; felt stressed ; or when having skipped meals(breakfast or lunch). One student said that she overate because her mother liked it. The following quotes show the representative comments regarding problem in eating behavior.

–I like snacking, especially in the evening or at night. It's like a habit. I open the refrigerator and get some food (or taste it) when I go home, even though I had a meal.

–After having a snack(trying to control caloric intake), I do not have meals. It's better to have meals first and not to eat snacks, however...

Table 3. Major themes and subthemes for eating behavior

| |
|--|
| 1. Problem in eating behavior |
| Irregular meal time |
| Skipping meals, especially breakfast |
| Eating-out and snacking frequently |
| Frequent consumption of instant food |
| Eating large amount of dinner |
| Cycle of skipping meals and overeating |
| 2. Barriers to healthy eating |
| Lack of time |
| Irregular lifestyle |
| Habit : snacking, eating at midnight |
| Attempt to control weight |
| Lack of beliefs on importance of health |
| Influence of the mass media |
| Availability and frequent use of instant food |
| 3. Pattern of meals |
| Eating Korean or Western foods at breakfast |
| Do not bring lunch box/eating instant foods at lunch |
| Eating dinner_late |
| Snacking |
| 4. Reasons for skipping meals |
| Lack of time |
| Loss of appetite in the morning |
| Habit |
| For dieting |

– I had a part-time job. I used to go back home and eat at 10 or 11 o'clock at night. It became a habit, and I still eat at night.

– I overeat while I am trying to diet. Sometimes I feel like giving up dieting and eat foods that I want.

– When I got stressed and upset emotionally, I eat as much food as I can at home.

– I overeat when I do not have meals all day long. I also eat until I feel full in front of food that I like.

– When I go to the cafeteria or restaurant with friends(e.g., pizza hut), I eat as much as I can hold. There are so many foods that taste good, and I can't help it.

– We can have second dishes in some restaurants. In such a situation, I eat more. For example, I bring more salad than I can eat and stuff myself with it.

2) Barriers to healthy eating

Many students mentioned time constraints as a major obstacle for healthy eating. They also responded that a availability of instant food or convenience food, advertisement of food(e.g., ramyun, cookies, ice cream) and the influence of the mass media were other barriers. Such barriers as the influence of friends and lack of value on

health were stated. In addition, many students were interested in weight control and indicated that this led to skipping meals. This result is similar to the previous report that suggested an interest in weight control or dieting is related to abnormal food behavior including skipping meals and binge eating (Koszewski & Kuo 1996 ; Lee 1993 ; Son & Sung 1998). A few mentioned that snacking and eating late at night were caused by an irregular lifestyle.

– For me, time is the major concern (that prevents me from eating better). I like to sleep more in the morning. I used to eat breakfast regularly, but it is difficult for me to do now...

– There is too much fast food or instant food around us. When I am with friends at lunchtime, we say, "Let's go to have pizza" instead of having Korean food.

– Commercial Advertisements. I feel like tasting food when I watch commercial announcements on snack (e.g., cookies) on T.V. I also like to have snacks when my friends mention specific foods (e.g., ice cream).

3) Meal pattern

Subjects were asked to respond more specifically about their meals. Although skipping breakfast was pointed out as the main eating problem, some ate breakfast. The reasons for having breakfast, however, included 'preparation by others (especially mother)', and 'for the purpose of controlling weight', rather than 'nutritional concern'. Breakfast was simply composed of either Korean style or Western style food.

– My mom prepares breakfast for me. If I had to make it for myself, I would not. Sometimes my mom puts milk or bread in my backpack.

– I wake up late in the morning and have lunch at school, but I eat a lot. It does not help me at all, thus I try to eat breakfast..

– I feel like I have to eat twice if I do not have breakfast. Even though I do not have an appetite in the morning, I plan to eat breakfast regularly.

Students preferred having food such as fried food (e.g., fried vegetables, pork cutlets, etc.), duckboggi, instant food (e.g., ramyun, frozen food, etc.) to Korean style food (cooked rice with side dishes) at lunch. This raises a concern that the consumption of processed food and

dietary fat as a result, is increasing among young adult women. Taste or food preference was the primary criteria for selecting lunch items, which was similar to the previous report (Kim et al. 1997 ; Kim & Im 1998). The distance to the cafeteria also played a role.

– At the cafeteria, I look at the menu board first. If there's something that I like, I eat there. Otherwise, I go some other place.

– I usually ask my friends 'What do they have at the cafeteria?'. We do not ask about the price, just ask about the menu.

Most of the students did not bring a lunch box. There were several reasons for this. Some said that they had had enough (lunch box) during middle to high school ; they did not want to carry a lunch box ; they did not have time to pack it ; some felt sorry for their mothers for having to prepare it ; or their friends did not bring it. These results suggest that the influence of friends or mother is important as well as time constraints in the decision to carry a lunch box.

In the case of dinner, many students ate out with friends or for meetings. Some mentioned that they have a habit of eating late. For the purpose of losing weight, a few students did not have dinner after 6 : 00 p.m., or eat a meal for lunch and dinner.

– I frequently meet friends in the evening and go to restaurants. That's why I eat out so often.

– I usually have dinner at 9 o'clock when I go home. I feel somewhat uncomfortable in the morning, however, it became a habit and now I feel O.K.

– I have breakfast somewhat late but have lunch most of the time. I have a light dinner (similar to snack). I eat cookies, rice cookies at 3 to 4 o'clock in the afternoon. That's it.

Students usually had a snack when they felt somewhat hungry or would want something sweet, or when others (usually mother or friends) offer snacks. Several students responded that they had a snack when they felt bored or atc habitually. The most commonly mentioned snack was cookies (e.g., pporito, wafers, etc.), consistent with Lee et al.'s report (1998). The type of food used for snacks also included fried foods, wonton, ramyun, soondae, bakery items, drinks (coffee, green tea, orange juice, milk, soda, etc.), and ice cream.

4) Reasons for skipping meals

Irregular meals, especially skipping breakfast, were the striking change in food habit after entering university. This finding is similar to a previous report (Kim & Im 1998 ; Kim & Lee 1996). Subjects responded that they usually ate breakfast and brought a lunch box during high school. Many of them mentioned that they skipped breakfast or lunch after entering university mainly due to changes in lifestyle and time constraints. Skipping breakfast or lunch caused students to eat large amounts of food for dinner. Subjects expressed concern regarding skipping meals and overeating at night.

The reasons for skipping breakfast were : getting up late, time constraints, loss of appetite in the morning and habit. Similar results were reported by Chang(1997) and Hong et al.(1993). In cases of skipping lunch, students mentioned that they had classes during lunch time or did not have time for lunch. Dieting was another reason for skipping lunch. Lack of time, for the purpose of losing weight and dieting were commonly cited as reasons for skipping dinner. This is related to the Lee et al.'s report (1998) that dieters have a higher frequency of skipping dinner.

-I had meals regularly before entering university. Now it's changed. Now I eat when I want...

-Meal time was regular while I was a high school student. Now, I do not stay with my family and live alone. My lifestyle and eating habits have been changed.

-I eat snacks, more often than I did. I can choose food as I want now...

-I usually go to bed too late, around 2 to 3 o'clock in the morning. I get up late and do not have an appetite. My mom wakes me up, but I feel like sleeping more...

-I skip meals while dieting. I plan to eat two meals a day. I have breakfast, and have another meal for lunch and dinner. After I return home in the evening or at night, I go to bed although I feel hungry.

3. Sources of nutrition information and social support

1) Sources of nutrition information

As major sources of nutrition information, subjects cited information from the mass media and home economics class during middle to high school (Table 4). They felt that nutrition knowledge from that class was easily re-

Table 4. Major themes and subthemes for nutrition information and social support

| |
|---|
| 1. Sources of nutrition information |
| Class of home economics during 7 – 12th grade |
| Mass media |
| Magazines for cooking |
| 2. Social support for eating behavior |
| Mother |
| Elder sister |
| Friends |

called. Mass media sources such as T.V., radio, newspapers, magazines for ladies or magazines for cooking were sources of nutrition information.

The type of information students got were primarily related to weight control. More specifically, they sought information regarding food for dieting, success stories of weight loss from famous actors or entertainers. They also sought information regarding cooking, seasonal food, food for preventing disease (e.g., cancer).

- Definitely, I got information from what I have learned in home economics class during middle to high school. It is most vivid. I also read magazines, but most nutrition information is based on the knowledge from home economics class.

- I think the influence of the mass media is great. However, specific information is basically from nutrition class during high school.

- Magazines for ladies. I don't have special interest in nutrition, however, I read magazines. I read sections regarding cooking and nutrition information, especially related to dieting.

- I am interested in dieting. I get information for dieting methods from books, newspapers... I also get lots of information while talking with friends.

Subjects responded differently when they were asked if they had actually used nutrition information. For example, some used the information regarding weight control in daily lives. They tried to count and reduce caloric intake by making small changes (e.g. substituting low-fat food for high-fat food), and increased exercise step by step. In contrast, some students commented that nutrition information did not have an influence on changing their behavior.

2) Social support for eating behavior

Subjects mainly received social support for eating beha-

avior from their mothers, elder sisters, and friends (Table 4). The type of support or nutrition information was different according to the sources of support. Mothers provided such support and information as general health, eating habit, meal planning, preparing side dishes. Friends and elder sisters provided support for weight control and information regarding breakfast, as found in Kim et al.'s study (1998).

– My mom prepares meals and tells me 'this is good for your health'. She got information from her friends or neighbors...

– I think the information from friends is reliable. They say "I read this in newspapers... saw it on T.V. ...". We are interested in weight loss.

4. Needs for nutrition education

1) Topics for nutrition education

Table 5 presents FGI results regarding what university students want in nutrition education programs. About half of the subjects commented that they were most interested in weight control and dieting as topics for nutrition education. Several studies previously reported that college female students were strongly interested in weight loss (Kim & Im 1998; Koszewski & Kuo 1996; Lee 1993). More specifically, they wanted to know scientific and appropriate methods of weight control, meal planning, behavior change techniques, methods for controlling overeating, and methods for increasing exercise intensity and duration. This finding indicates that they wanted to receive more systematic, scientific information and to learn practical methods for weight control.

Some students were interested in diet therapy for preventing and managing diseases such as chronic diseases, gastrointestinal diseases and constipation. They also ex-

Table 5. Major themes and subthemes for needs of nutrition education programs

| |
|--|
| 1. Topics |
| Weight control/Dieting |
| Diet for preventing diseases |
| Nutrition assessment |
| Information that can be easily applicable |
| 2. Type of nutrition education |
| Individual counseling |
| Individual counseling/group education |
| Leaflet/booklet |
| On-line education/education materials through e-mail |
| 1 – 2 sessions/month, 30 – 60 minutes/session |

pressed a need for nutrition assessment such as body fat assessment and blood testing as a part of nutrition education programs.

– We can't think of nutrition education without dieting. I am personally interested in this topic, too...

– How about "how to keep a slim body...", or "meal planning..." for nutrition counseling? People in my age group feel that diet for diabetes or hypertension is not my problem...

– I think nutrition education should cover comprehensive information (rather than simple information). For example, it is not enough to say "You should lose weight..." as found in many magazines.

– I am interested in meal planning. What I've read about dieting or diet methods might not be applicable to my life. It might be good to learn menu that can be easily prepared, or exercises that can be done at home anytime.

– Many think that dieting might be a proper topic for college female students. I think that diet and the stomach, diet and constipation might be good topics. These are common to many young women...

– Why don't we have support meetings for nutrition education, like cooking or meal planning?

– Seniors at the university get a lot of stress. They have to prepare for graduation and searching for a job. I think stress and diet might be good.

– It might be better to have some kind of test. I am not sure about the test, for example, body fat measurement... Can we have a test for screening for osteoporosis?

2) Types of nutrition education (methods, formats, materials)

With respect to formats of nutrition education, a third of the subjects liked the idea of having individual counseling because it would be possible to focus on individual needs and maintain privacy. Some subjects mentioned that a combination of individual counseling and group education would be better because they might feel awkward or embarrassed for the first few counseling sessions. They also suggest counseling through the telephone or internet, which would allow students to receive information or counseling anytime they wanted.

– I like individual counseling. I do not want someone whom is not close to me to know my (diet) problem...

– I think individual counseling is more important. If some-

one really wants to change(eating habit), one should receive intensive counseling for that.

- I think it is very difficult to set up a time for education. Everyone has different schedules...

- Also, it is better to have personal cards and individual follow-up. There's information, like my height, weight, family history, lifestyle, and eating habit on the card. In that case, I am not the first comer again and again... The counselor can focus on my problem and suggest information for me.

- Group education is better, as I read in psychology books. I think support group meetings for those sharing similar problems might be very helpful, as we've heard of groups for alcoholics. We may have meetings for dieters or binge eaters.

- Telephone counseling might be effective. We can talk problems that might not be possible in face to face counseling.

- I think education through the internet is good. We don't have to meet at a specific time, but can do it in the evening... We might use chatting room...

- Internet or through e-mail. It is possible to communicate ideas and one's own experiences, and provide advice.

Subjects thought that it would be appropriate to have education for 30 to 60 minutes each session, once or twice per month. For education materials, they suggested having short ones but which included practical information or checklists. They were positive in receiving materials through e-mail.

Subjects also mentioned that education should be done in a place that was equipped with an audio-, video-system. It would make it possible for educators not to record what was said in the session and focus more on counseling itself. They also wanted a quiet place that would make them feel comfortable and open-minded.

- We easily throw away materials, like pamphlets. It is better to receive materials through e-mail...

- How about a Homepage? I also like booklet...

- If possible, I hope to have a checklist at the back of the educational materials, so that I can check what I am doing. For example, it is good to include page for checking types and duration of exercise, types and amount of food that I eat, if I receive diet counseling. In the education session, the counselor can check it and provide advice for me.

Summary and Conclusion

This study was designed to identify food behavior, factors influencing food behavior, nutrition information sources, and needs for nutrition education. For this purpose, five focus group interviews were performed with 36 university female students during December, 1998. Major results of this study are as follows.

1) The eating problem was characterized by irregular meal times, skipping meals, frequent eating-out and snacking, as well as common consumption of instant food. These unhealthful eating behaviors were caused by lack of time, irregular lifestyle and eating, habit, availability of instant food and the influence of the mass media. Lack of value on health, the desire and attempts to lose weight also played a role in their eating behaviors.

2) When each meal was examined more specifically, students ate simple Korean style or western style breakfasts. The reasons for having breakfast included 'prepared by others(especially mother)', and 'for the purpose of controlling weight'. For lunch, they usually ate instant food and fried food rather than Korean style lunches. The selection criteria for lunch was taste or preference of food. They frequently ate out for dinner, and it became a habit to eat late. Some skipped dinner for the purpose of dieting. Skipping meals was common among university women. The reasons for skipping breakfast included waking up too late, lack of appetite, lack of time to eat and habit.

3) They cited the mass media(T.V., radio, newspapers) as the most frequent sources of nutrition information but pointed that their nutrition information was primarily based on knowledge from home economics class during middle and high school. The types of information they obtained were mainly confined to dieting. However, they got different information from different support/sources. For example, they got general information from their mothers, while information regarding weight control was received from friends.

4) They pointed out weight control or dieting as the most interesting topic for nutrition education. More specifically, they wanted to have classes for scientific and appropriate methods of weight control, meal planning, behavior change techniques, methods for controlling overeating, and methods for increasing exercise intensity and du-

ration. Other topics of interest included diet therapy for preventing diseases, stress management, nutrition assessment.

With respect to education methods, they preferred having individual counseling or a combination of individual and group methods to group education. They liked to have simple, short materials for education over lengthy materials. They also showed an interest to education through the internet or e-mail.

These results suggest the strategies and methods of nutrition education for female university students. Nutrition education might focus on scientific and systematic weight control/dieting as well as dealing with their eating problems(e.g., balanced meals, eating meals regularly, etc.). Individual counseling as well as providing general information may be provided through the internet. The authors plan to develop nutrition counseling programs for university female students based on this study's findings.

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