

## Food Preferences and Nutrient Density of Wedding Reception Food Consumed by the Community Residents in the Chungbuk Area\*

Myoung-Sook Kim, Ki-Nam Kim<sup>†</sup>

*Department of Food and Nutrition, Chungbuk National University, Cheongju, Korea*

### ABSTRACT

A survey was conducted to investigate the preferences of wedding reception food, food consumption and its nutrient density, and the factors that influence nutrient density, in order to obtain baseline data for the development of an educational program on dining out. Subjects included 105 male and female adults who attended a wedding ceremony and consumed wedding reception food in the Chungbuk area between August and September 2004 and interviewed using a questionnaire. 63.0% of the subjects responded that they over-ate at the reception. 20.5% reported that they skipped the meal before the reception. The respondents who skipped the meal had more calorie intakes (899kcal) than those who did not (800kcal). In food preferences, noodles (51.0%), watermelon (47.0%), rice cake (39.0%), sweet and sour pork (38.0%), potato noodles stir-fried with vegetables (37.0%), beef rib soup with cooked rice (37.0%), bulgogi (35.0%), braised beef ribs (35.0%), fried shrimp (32.0%) were higher percentages in order. People preferred grain, meat and fatty food to vegetables. Total calorie intake from the reception foods were 881 kcal for males, and 769kcal for females. In evaluation of nutrient density, the density of calcium, vitamin A, vitamin C and dietary fiber did not meet the standard of the recommended intake. Especially, vitamin C and dietary fiber were less than 50% of the recommended level. The main factors that influence the nutrient density were household incomes, occupations, marital status, and total fat consumed. In conclusion, an educational program should be developed and offered to improve their dietary quality. (*J Community Nutrition* 8(4): 200~206, 2006)

**KEY WORDS:** wedding reception-food · food preferences · nutrient density · community residents · Chungbuk area.

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### Introduction

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Eating out is becoming more common. Recently, the Korean restaurant industry has been growing even more rapidly due to life style changes such as increases of nuclear families and working women (Kim, Beik 2005; Kim 2001; Kim, Kim 2002; Yu 2002). The statistical data show that families dining out has gone up significantly since 1987. In 1987, money spent on away-from-home foods represented 4.1% of total food expenditure, but it comprised 10.4% in 1997, and it reached to 12.7% in 2003 (Statistical year book 2003). It is estimated that, by 2010, almost 20% of the food expenditure

will be spent for eating-out (Kim 2001). In one study of Yoo, Kim (2002), a majority of the working population has at least one meal per day outside of their homes, which are often unhealthy and nutritionally unbalanced foods. They conducted a survey on one hundred and twenty nine adults who consume Korean and a one-dish meal. Those who ate Korean foods were found short of vitamin A, vitamin C and calcium and those who ate a one-dish meal were short of vitamin A, vitamin B<sub>2</sub>, and calcium. Moreover, people generally eat more when they go out to eat. Cho (1997) reported in her study that 64% of her subjects answered that they do eat more when they go out to eat. Therefore, people who frequently eat out have higher risks of obesity due to the additional calorie intake (Cho 2005; French et al. 2001; McCrory et al. 1999).

Obesity is one of the leading causes of death and threatens people's health conditions by causing many chronic diseases such as diabetes, cardiovascular disease, hypertension, cancer, and strokes (Roth, Townsend 2003). The obesity rate in Korea has been increasing every year and the rate reached to

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\*This study was supported by the research grant of the Chungbuk National University in 2005.

<sup>†</sup>Corresponding author: Ki-Nam Kim, Department of Food and Nutrition, Chungbuk National University, 12 Gaesin-dong Heungduk-gu, Cheongju 361-763, Korea

Tel: (043) 261-2745, Fax: (043) 267-2742

E-mail: knkim@chungbuk.ac.kr

32.4% in 2005 (The Centers for Disease Control and Prevention 2005). As the population of eating away from home has increased, the impact of dining out on the quality of diet and obesity have been concerned. Although this has led some consumers to ask restaurants to serve healthier meals, most still choose their foods based on convenience, economical efficiency, and taste (Cho 2005). Most people who choose foods based on taste prefer sweet, fatty or high protein meals to healthier foods such as fruits and vegetables (French et al. 2001).

In Korea, people feast at a wedding reception and it is considered one way of dining out. The main foods at wedding receptions used to be noodles but recently they are diversified (Choi 2001; Im 2001). Luxurious hotel wedding halls gained popularity as the wedding ceremony laws were eased in 1999 (Choi 2001). As a result, today's hotel weddings offer several food varieties such as Western style, Korean style, and buffet (Joo 2002). As a Korean custom, wedding attendees would give money as part of the celebration. This led the attendees to eating more than normal since they had paid. Since the foods have diversified, it now includes high calorie foods, saturated fat, and a decrease in high fiber foods (Cho 2005). Those people who eat out regularly and also feast at wedding receptions come into a risk of serious health problems.

As we examined above, these problems of eating out will not be solved by an individual's effort but they require an effort from all restaurant industries. Not only a nutrition education on a balanced diet for community residents is needed for them to choose healthier foods but also restaurants marketers should solve the problems of low diet quality and developing healthful menus in restaurants. To meet these goals, it is needed to collect Korean's own scientific data on away-from-home foods offered at wedding receptions. However, there has been no research data on this subject.

Since 1995, a new law on health care promotion has been established in Korea. The Department of Health and Welfare has been trying to develop a nutrition policy regarding a decrease of obesity and chronic disease rate. However, they have difficulties due to lack of our own scientific data and are using foreign countries' data as references. Therefore, nutritionists and related professionals should have the responsibility of gathering and conducting more studies about Koreans' own dietary practices.

The purpose of this study was to investigate food preferences,

food consumptions and nutrient density of the foods offered at wedding receptions of the Chungbuk area. Although there have been researches on the quality of away-from-home foods (Jung et al. 1997; Kim, Park 2005; Kye, Moon 1995; Moon et al. 1993; Oh 2000; Son 2004; Yim 1997), this study was to examine specifically the dietary quality of the foods consumed at wedding receptions. This study will be useful to nutrition educators who would plan an educational program for the residents to help their health promotion. Moreover, we expect that this study will be used when we require better quality foods of the restaurant industry.

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## Subjects and Methods

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### 1. Subjects

The subjects of this study were the residents of the Chungbuk area who attended wedding ceremonies and ate wedding reception-food in the Chungbuk area (Cheongju city and Chungju city) and a survey was done from August 6 to September 21, 2004. The trained research assistants visited weddings halls in the Cheongju and Chungju areas, distributed a self-administered questionnaire to one hundred and five people at the receptions, and collected after they were completed, and dietary surveys were conducted among them. People were asked about the amount of food they consumed at the reception. Among all data collected, 100 of them were used for the analysis.

### 2. Methods

#### 1) Characteristics of subjects

1) General characteristics of subjects: gender, age, education level, occupations, marital status, monthly incomes, and resident areas were examined.

2) Characteristics regarding wedding receptions: amount of food consumed, the number of food selections, amount consumed compared to other meals, and whether food was consumed before the reception were examined.

#### 2) Food preferences

Sixty six food menus commonly offered for wedding receptions were asked for preferences.

#### 3) Dietary survey

The trained research assistants visited wedding halls and carried out dietary surveys by interviewing among the wedding attendees. The DS 24 WIN program (2000) was used to

calculate nutrient intake from food consumption. Nutrient density was calculated as the nutrient intake/1000kcal consumed.

### 3. Data analysis

The frequencies and percentages of characteristics of the subjects and food preferences were obtained. The mean and standard deviation for nutrient intakes were also calculated. The t-test and ANOVA were conducted to examine factors that influence nutrient density. These statistics were run through SAS 8.0 program.

## Results and Discussion

### 1. Characteristics of subjects

#### 1) General characteristics of subjects

General characteristics of the subjects are presented in Table 1. Males were 47.0%, females were 53.0% who ranged in age from 30 – 39 (28.0%), 20 – 29 (27.0%) and 40 – 49 (24.0%). In subjects' educational level, college graduate was 47.0%, high school was 39.0%, middle school and under were

**Table 1.** General characteristics of the subjects n = 100

		n (%)
Gender	Male	47 (47.0)
	Female	53 (53.0)
Age (years)	20 – 29 years	27 (27.0)
	30 – 39 years	28 (28.0)
	40 – 49 years	24 (24.0)
	50 – 59 years	13 (13.0)
	≥ 60 years	8 ( 8.0)
Education	≤ Middle school graduates	14 (14.0)
	High school graduates	39 (39.0)
	≥ College graduates	47 (47.0)
Job	Clerical	27 (27.0)
	Professional	24 (24.0)
	Sales	16 (16.0)
	Housewives	20 (20.0)
	Other	13 (13.0)
Marriage status	Unmarried	36 (36.0)
	Married	64 (64.0)
Family income (10,000won/month)	≤ 100	7 ( 7.0)
	100 – 199	40 (40.0)
	200 – 299	43 (43.0)
	≥ 300	10 (10.0)
Resident area	Cheongju city	86 (86.0)
	Chungju city	14 (14.0)

14.0%. Their occupations were administrators (27.0%), professionals (24.0%) and housewives (20.0%). 64.0% of them were married and 36.0% were single. 86.0% lived in Cheongju city and 14.0% lived in Chungju city.

#### 2) Characteristics regarding wedding reception food

The characteristics of the wedding reception foods are shown in Table 2. Most of the subjects attended weddings 1 – 5 times (73.0%) in average for the past three months. The number of dishes selected at the reception were 6 –

**Table 2.** Characteristics regarding wedding reception n = 100

		n (%)
Total frequency of attending within 3 months	1 – 5 times	73 (73.0)
	6 – 10 times	22 (22.0)
	≥ 11	5 ( 5.0)
Numbers of food item	4 – 5	11 (12.2)
	6 – 7	49 (54.4)
	8 – 9	16 (17.8)
	10 – 15	14 (15.6)
Portion size of foods compared to ordinary	Similar	29 (29.0)
	More	63 (63.0)
	Less	8 ( 8.0)
Eating meal before wedding reception	Yes	62 (79.5)
	No	16 (20.5)
Eating meal after wedding reception	Yes	62 (80.5)
	No	15 (19.5)

**Table 3.** Food preference rate (the top 20 foods) n = 100

Rank	Food	% 'liked'
1	Noodles	51 (51.0)
2	Water melon	47 (47.0)
3	Rice cake	39 (39.0)
4	Sweet and sour pork (beef)	38 (38.0)
5	Potato noodles stir-fried with vegetables	37 (37.0)
6	Beef rib soup with cooked rice	37 (37.0)
7	Bulgogi	35 (35.0)
8	Braised beef ribs	35 (35.0)
9	Fried shrimp	32 (32.0)
10	Rice rolled in laver	31 (31.0)
11	Rice cake (mixed with black soy bean)	29 (29.0)
12	Steamed rice with 5 grains	28 (28.0)
13	Sticky rice cake	27 (27.0)
14	Cuttlefish	25 (25.0)
15	Orange	23 (23.0)
16	Abalone porridge	23 (23.0)
17	Grape	21 (21.0)
18	fried fish	21 (21.0)
19	Fried oyster	20 (20.0)
20	Sweet persimmon	19 (19.0)

7(54.4%), 8–9(17.8%) and 10–15(15.6%) in the order. 63.0% responded that they eat more at the reception than they normally eat and 8.0% responded that they eat less. 20.5% responded that they skip a meal before the reception and 19.5% responded that they skip a meal after the reception. Yu(2002) reported that people consume more when eating out. Cho(2005) reported that 64.0% of population overeat when they go to a buffet. In this study, 63.0% of the subjects over-ate, and people especially who skipped the meal before the reception (899kcal) had more calorie intakes than people who did not skip the meal(800kcal).

## 2. Food preferences of wedding reception food

The food preferences of reception food are presented in Table 3. The top ten foods among 66 food items were noodles(51.0%), watermelon(47.0%), rice cake(39.0%), sweet and sour pork(38.0%), potato noodles stir-fried with vegetables(37.0%), beef rib soup with cooked rice(37.0%), bulgogi (35.0%), braised beef ribs(35.0%), fried shrimp(32.0%), rice rolled in laver(31.0%). Only 16.0% responded that they like vegetables(not shown in Table 3). Most of subjects preferred grain, meat, and fatty food to vegetables. This trend of eating-out behaviors might result in weight gain of community residents as other researchers have indicated(Cho 2005; French et al. 2001).

## 3. Nutrient intake from wedding reception food

The average calorie and nutrient intakes are shown in

**Table 4.** Nutrient intake from wedding reception foods

	Male(n = 47)	Female(n = 53)
Energy(kcal)	881.8 ± 320.2	769.2 ± 253.4
Protein(g)	45.1 ± 21.2	35.1 ± 18.1
Fat(g)	23.9 ± 10.4	17.9 ± 7.7
Cholesterol(mg)	225.7 ± 134.1	157.8 ± 100.4
Vit. B <sub>1</sub> (mg)	0.4 ± 0.1	0.4 ± 0.1
Vit. B <sub>2</sub> (mg)	0.5 ± 0.2	0.5 ± 0.2
Vit. B <sub>6</sub> (mg)	5.6 ± 3.3	3.8 ± 2.4
niacin(mg)	2.0 ± 0.6	1.8 ± 0.6
Vit. C(mg)	15.8 ± 9.2	15.8 ± 9.5
Folate(μg)	100.1 ± 61.0	80.89 ± 48.2
Vit. A(RE)	224.5 ± 121.4	206.2 ± 110.6
Calcium(mg)	169.4 ± 95.3	161.3 ± 97.3
Phosphorus(mg)	475.2 ± 196.4	382.1 ± 171.9
Iron(mg)	6.0 ± 2.4	5.0 ± 2.1
Zink(mg)	5.5 ± 2.2	4.0 ± 1.6
Dietary fiber(g)	4.7 ± 1.8	4.3 ± 1.8

Table 4. Energy and nutrient intakes of males were 881kcal, 23g of fat, 169mg of calcium, 6mg of iron, and 4.7g of fiber while the intakes of females were 769kcal, 17g of fat, 161mg of calcium, 5mg of iron, and 4.3g of fiber.

## 4. Evaluation of nutrient density

### 1) Energy percentage from carbohydrate, protein and fat

Table 5 shows the percentage of energy from carbohydrate, protein and fat as 56:19:25, which is within adequate range according to Dietary Reference Intakes for Koreans(2005). When people eat away from home, energy-rich foods are offered in larger portions and this may lead to over-consumption of energy. The main issues of diet quality in foods away from home are high fat and high calorie intake caused by larger portions. Compared with home foods, away-from-home foods had on average higher fat, saturated fat, and cholesterol densities(Lin, Frazao 1997). However, energy percent of fat intake from wedding reception foods(25%) obtained from this study is within the recommended level according to Korean's DRI. As shown in Table 3, it might be connected to food choices of eating noodles, rice cake, etc. which have

**Table 5.** Energy Percentage from carbohydrate, protein and fat

Nutrient	Male(n = 47)	Female(n = 53)	Total
Carbohydrate	55.5 ± 10.5	56.4 ± 9.1	56.0 ± 9.5
Protein	18.7 ± 5.7	19.1 ± 5.0	18.9 ± 5.4
Fat	25.8 ± 7.4	22.4 ± 7.8	25.1 ± 7.5

**Table 6.** Nutrient density from wedding reception food for one meal

Nutrient	Male(n = 47)		Female(n = 53)	
	Recommended density	Reception food density	Recommended density	Reception food density
Protein(g)	22.3	50.9	23.4	44.3
Calcium(mg)	293.0	188.0	382.1	201.3
Iron(mg)	4.2	6.9	6.6	6.4
Vit. A(RE)	314.0	249.5	337.6	272.0
Vit. B <sub>1</sub> (mg)	0.5	0.5	0.6	0.5
Vit. B <sub>2</sub> (mg)	0.6	0.6	0.6	0.6
Vit. C(mg)	41.9	18.4	51.9	20.3
Folic acid(μg)	167.4	117.4	207.7	104.3
Fiber(g)	11.9	5.5	12.1	5.6

less fat.

2) Nutrient density

The density of selected 9 nutrients, protein, calcium, iron, vitamin A, vitamin B<sub>1</sub>, vitamin B<sub>2</sub>, vitamin C, folic acid and dietary fiber were evaluated (Table 6, Fig. 1). The density of protein from reception foods was 22.3g/1,000kcal, that of calcium, iron, vitamin A, vitamin C was 293.0mg, 4.2mg, 314.0 RE, 41.9mg/1,000kcal, respectively in the order. Next, we calculated % nutrient density of reception food compared to recommended density, and are presented in Fig. 1. Among nine nutrients, only the density of protein reached at about 200% of the recommended density. On the other hand, the density of calcium, vitamin A, vitamin C and dietary fiber did not meet the standard of the recommended intake. Especially, vitamin C and dietary fiber were less than 50% of the recommended density. These findings are consistent with previous studies on nutrient composition and nutrient density of away-

from-home foods (Kim, Park 2005; Yoo, Kim 2002). In general, away-from-home foods are well known to lack vitamin C and dietary fiber (French, Story et al. 2001). The results of this study support it as well.

3) Factors that influence nutrient density

We conducted ANOVA test to examine factors that influence nutrient density of calcium, vitamin C and dietary fiber

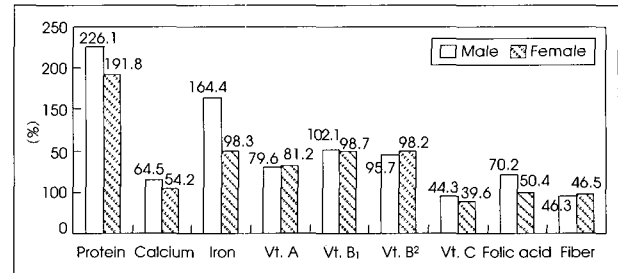


Fig. 1. % nutrient density of reception-food compared to recommended level.

Table 7. Factors that influence some nutrient density

Variables		Calcium(mg)	Vt. C(mg)	Dietary fiber(g)
General characteristics				
Marital Status	Unmarried	179.8 ± 73.0 <sup>1)</sup>	17.7 ± 7.6	5.1 ± 1.1
	Married	203.6 ± 78.5	20.4 ± 10.7	5.8 ± 1.8
t-value		1.5	1.30	2.09*
Monthly income (10,000won)	≤100	175.1 ± 50.1 <sup>b2)</sup>	21.5 ± 9.2	5.8 ± 0.9
	100 - 199	175.8 ± 62.6 <sup>b</sup>	17.3 ± 9.8	5.2 ± 1.4
	200 - 299	200.2 ± 75.7 <sup>b</sup>	20.5 ± 10.4	5.7 ± 1.9
	≥300	277.7 ± 64.5 <sup>a</sup>	22.1 ± 6.2	6.6 ± 0.7
	F-value		3.17*	0.85
Job	Clerical	201.3 ± 82.0	21.9 ± 10.3 <sup>ab</sup>	5.4 ± 1.5
	Professional	192.8 ± 61.7	18.5 ± 7.9 <sup>abc</sup>	5.4 ± 1.3
	Sales	233.6 ± 111.9	24.7 ± 13.2 <sup>c</sup>	6.3 ± 2.2
	Housewife	184.8 ± 61.9	17.3 ± 6.7 <sup>c</sup>	5.4 ± 1.4
	Other	154.7 ± 36.6	12.7 ± 5.8 <sup>bc</sup>	5.3 ± 1.5
	F-value		2.12	3.85**
Dietary factors				
Skipping meal Before reception	Yes	169.1 ± 54.5	20.2 ± 10.1	5.7 ± 1.7
	No	216.3 ± 69.2	15.2 ± 9.0	4.8 ± 0.9
t-value		-2.91**	1.79	2.60*
Energy % from fat	20% 미만	216.4 ± 46.0 <sup>a</sup>	18.6 ± 11.8	5.6 ± 1.3
	20 - 29%	202.2 ± 93.8 <sup>a</sup>	18.3 ± 6.8	5.5 ± 1.7
	30% 이상	146.5 ± 50.3 <sup>b</sup>	22.0 ± 11.7	5.5 ± 1.9
	F-value		6.18**	0.91
Level of energy intake	Low	162.6 ± 69.1 <sup>b</sup>	20.7 ± 11.3	5.9 ± 2.4
	Midium	195.9 ± 79.5 <sup>ab</sup>	18.9 ± 10.3	5.4 ± 1.3
	High	223.2 ± 69.6 <sup>a</sup>	19.2 ± 7.0	5.5 ± 1.1
	F-value		3.93*	0.28

<sup>1)</sup>M ± SD

<sup>2)</sup>Letters with different superscripts in the same column are significantly different at p < 0.05 by Duncan's multiple range test

\*: p < 0.05, \*\*: p < 0.001

whose density was below 50% of the recommended level, respectively. The results showed the main factors to be total household income of a house, marital status, occupation, and total fat consumed (Table 7). In other words, people with lower household income, or singles or housewives had foods with lower nutrient density of calcium and vitamin C.

### Summary and Conclusion

This study was conducted on 105 subjects who live in the Chungbuk area to investigate food preferences of wedding reception food, food consumption, and its nutrient density, and factors that influence nutrient density, and the results are as follows.

1) 47.0% of the subjects were males and 53.0% were females. 64.0% of them were married and 36.0% were single. A majority of the subjects were in their 30's and 20's.

2) When they eat at the reception, 63.0% responded that they over-ate, and 20.5% reported that they skipped the meal before the reception. The people who skipped the meal had more calorie intakes (899kcal) than people who did not (800 kcal).

3) In food preferences, noodles, watermelon, rice cake, pork (beef), beef rib soup, bulgogi, braised beef ribs and fried shrimp were placed in high rank. This result showed that people preferred grain, meat and fatty food to vegetables.

4) Total calorie intake from the reception foods were 881 kcal for males, and 769kcal for females. Males consumed 24g of fat, 169mg of calcium, 4.7g of fiber whereas females consumed 18g of fat, 161mg of calcium, and 4.3g of fiber. Both males and females consumed the same amount of vitamin C, 158mg.

5) Energy percentage from carbohydrate, protein and fat was 56:19:25, which is within adequate range according to Dietary Reference Intakes for Koreans. The nutrient density of calcium, vitamin A, vitamin C, and dietary fiber did not meet the standard of the recommended intake. Especially, the densities of vitamin C and dietary fiber were less than 50% of the recommended level.

6) The main factors that influenced three selected nutrient density (calcium, vitamin C and dietary fiber) were total household incomes, occupations, marital status, and total fat consumed.

In conclusion, people in general, eat more food at the wedding receptions than as usual. And they prefer meat and

fatty foods to vegetables which can cause obesity when keeping to this eating pattern. Therefore, a nutrition education on a balanced diet is recommended to improve their dietary quality. Furthermore, the restaurant industry should make more effort to develop better quality foods.

### References

- Cho JS (1997): Dietary Life and Nutrition Problems of Korean. *Woman and family life* 2: 103-146
- Cho MS (2005): Health and nutrition implications of food away from home. *Korean J Food Culture* 20 (6): 767-776
- Choi TH (2001): A Study on Customer Satisfaction of Wedding Hall visitors. Kyonggi University
- Dietary Reference Intakes for Koreans (2005): The Korean Nutrition Society
- DS 24 WIN Program (2000): Human Nutrition Lab, Seoul National University
- French SA, Story M, Neumark-Sztainer D, Fulkerson JA, Hannan P (2001): Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psychosocial variables. *International J Obesity* 25:1823-1833
- Im BG (2001): A Study of the Effect of Hotel Weddings on Banquet Revenues: Based on the first-class luxury hotels in Seoul. Kyung-Hee University
- Jo JC (2002): A study on activating method of wedding-food-menu in the food-service industry. Kyonggi University
- Jung HJ, Moon SJ, Lee LH, Yu CH, Paik HY, Yang IS, Moon HK (1997): Evaluation of elementary school food-service menus on its nutrient contents and diversity of the food served. *Korean J Nutr* 30 (7): 854-867
- Kim DH, Beik GY (2005): A study on the eating-out behavior of city worker (I) - The relationship between general characteristics and eating-out behavior-. *Korean J Food & Nutr* 18 (3): 241-253
- Kim KN, Park EJ (2005): Nutrient density of fast-food consumed by the middle school students in Cheongju city. *Korean J Community Nutrition* 10 (3): 271-280
- Kim MS (2003): A study on the next generation's knowledge on the marriage ceremony. Sejong University
- Kim SY, Kim JY (2002): Restaurant food choice and preferences of salaried employees in Jinju classified by age and gender. *Korean J Nutr* 35: 996-1006
- Kim TH (2001): Perspectives of Contract food-service Industry at home and abroad. *Nutrition and Dietetics* 226: 16-26
- Kim YH (1994): A study on the ritual service marketing: Focused on the wedding service. Seoul National University
- Kye SH (1995): Assessment of nutrient content for providing nutrition information of Dishes in restaurant and food service institutions - about Korean dishes-. *Korean J Dietary Culture* 9 (5): 447-454
- Kye SH, Kim WS, Lee JH, Moon HK (1997): Survey on the Serving Size and Waste Rate of Frequently Consumed Dishes in Korean Style Restaurants. *J Korean Dietetic Association* 3 (1):

- 44-54
- Kwon SH(2003): The relationship between general characteristics and eating-out behaviors of industrial workers. *J East Asian Soc Dietary Life* 13: 501-513
- Lee JE, Ahn YJ, Lee JY, Cha JH, Park C, Kim PK(2004): Evaluation of nutrient intake quality over 40 year-old people living in Rural and Suburban Area. *Korean J Community Nutrition* 9(4): 491-500
- Lee YH(1998): Comparison of energy adjustment with nutrient density in evaluating dietary intake: Especially on energy-providing nutrient intake. *Bull Nat Sci* 3(1): 79-85
- Lin BH, Frazao E(1997): Nutritional quality of foods at and away from home. *Food Review* 20(2): 33-40
- McCrorry MA, Fuss PJ, Hays NP, Vinken AG, Greenberg AS, Roberts SB(1999): Overeating in America: association between restaurant food consumption and body fatness in healthy adult men and women ages. *Obes Res* 7: 564-571
- Moon HK, Lee WJ, Kye SH, Chung HR, Kim YC, Song IS, Song TH(1993): Survey of Food Intake Amount and Waste Rate per Person on Korean Style Restaurants. *Korean J Dietary Culture* 8(3): 231-241
- Nha YA, Yoon US(1991): A survey on the dining out of western food in Seoul Area. *Korean J Food & Nutr* 4(2): 187-198
- Oh SY(2000): Analysis of methods on dietary quality assessment. *Korean J Community Nutrition* 5(2S): 362-367
- Roth RA, Townsend CE(2003): Nutrition and Diet Therapy, Thomson
- Sin CS(1999): Research for promotion plan of banquet sales. Kyung Hee University
- Son EJ, Moon HK(2004): Evaluation of elementary school lunch menus(1): Based on food diversity and nutrient content. *J Korean Dietetic Association* 10(1): 47-57
- Song SY(2001): A Study to increase banquet functions by wedding reception: Focus on Duluxe tourist hotels in seoul. Kyung Hee University
- Statistical year book in Korea(2003): The National statistical Office 49: 167
- The Centers for Disease Control and Prevention of Korea(2005): National Strategies for Korean's Obesity Management, The Department of Health and Welfare of Korea
- Yim YS(1997): Elderly nutrition improvement program in the community health center: Nutritional evaluation of the elderly using the index of nutritional quality and food group intake pattern. *J Korean Dietetic Association* 3(2): 182-196
- Yoo CH, Kim JY(2002): A Survey on the menu patten, food and nutrient intake in eating out establishment of Korean adult. Sangmyung University. *Research Institute of Natural Science* 13: 1-22
- Yu CH(2002): A review on the changes of lifestyle and the related nutritional problems in Korea. *Korean J Nutr* 35: 137-146