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Dining-out behaviors of residents in Chuncheon city, Korea, in comparison to the Korean National Health and Nutrition Survey 2001*

Yang-Wha Kang, Kyung-Eui Hong, Hyeon-Jeong Choi and Hyojee Joung§
Graduate School of Public Health, Seoul National University, School 110-799, Korea

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Abstract

Dining-out behavior is associated not only with socio-demographic characteristics such as gender, education, occupation, residence, and marital status, but also with individual preferences, such as eating-out activities, interests, and opinions. We investigated dining-out behaviors and their associated factors. Announcements by health practioners and the Chief of Dong Office were used to recruit 739 residents (217 males and 522 females) in Chuncheon, Korea. Information on the frequency and reasons for eating out, the standards for meal selection, and the overall satisfaction with restaurants, based on taste, nutrition, amount, price, service, sanitation, and subsidiary facilities of restaurants, was obtained through personal interviews with a structured questionnaire. Among all respondents, 46.3% of subjects ate outside of the home once or twice a month, and 33.8% reported that they ate out only a few times a year, or never. This was much higher than the national average of 52.0% as reported by the Korean National Health and Nutrition Survey (KNHNS) in 2001. The frequency of eating out differed significantly according to age ($p=0.001$), family income ($p<0.001$), residential area ($p<0.001$), and educational level ($p<0.001$). The most common reasons for dining out were meetings (46.7%), followed by special celebrations (15.4%), and enjoyment (11.2%). Korean food (55.3%) was the most frequently selected type of meal when eating out, and food was most often selected based on personal preferences (41.4%) and taste (29.8%); only 5.5% and 7.7% of subjects considered nutrition or other factors (e.g., sanitation), respectively. The results showed that the frequency of eating out for Chuncheon residents was much lower than the national average; in addition, eating-out behaviors depended on the residents' socio-demographic and personal characteristics.

Key Words: dining-out behaviors, socio-demographic characteristics, chuncheon

Introduction

Over the past two decades, dining-out behavior in Korea has increased greatly, and the restaurant industry has greatly expanded (Lim, 2006). The frequency of eating out has risen rapidly as a result of numerous factors, including the participation of females in economic activities, convenience, the increasing number of small and single families, and the enhancement of economic power (Lim, 2006). The 5-day workweek has allowed more leisure time and has changed the Korean lifestyle, which may result in eating outside of the home more frequently.

The Korean National Health and Nutrition Survey (KNHNS) in 2001 showed that 40.7% of males and 18.5% of females eat out once a day (Korea Health and Welfare Ministry [KHWM] 2002). Since the number of people eating out has increased, the restaurant industry has reported a large increase in sales: 28 trillion won in 1996, 36 trillion won in 2000, and 42 trillion won in 2003 (Kim & Chung, 1989; Kim, 2003; Han *et al*., 2005). In 1987, dining out only accounted for 4.1% of total living expenses, but this value increased to 10.4% in 1997 and 12.7% in 2003 (Kim & Lee, 2004).

Some studies have suggested that the tendency to eat out could differ based on age, gender, occupation, educational level, family income, marital status, personal preferences, and residential areas (Duffey *et al*., 2007; Kim & Lee, 2004; Park & Chung, 2004). Lee & Um (2004) reported that males are more conscious of nutrition when eating out than are females, and that young people were more interested in healthy eating habits than older people. It is also possible that the motivation or purposes for eating out and the taste of food influence the frequency of dining out (Kim, 2004; Park & Chung, 2004). Lyu & Kwak (2001) showed that differences in the frequency of eating out and the type of restaurants chosen are dependent upon the characteristics of the users.

The increasing popularity of dining out may lead to exceeding the dietary recommendations for fat, sodium, carbohydrate, and other nutrients, which could influence dietary quality and the food environment (Boutelle *et al*., 2007; Lin *et al*., 1996; Root *et al*., 2004). Some studies have shown a positive association between the frequency of eating out and body fat, weight gain, and obesity (Duffey *et al*., 2007; Ma *et al*., 2003; McCrory *et al*., 1999).

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§ **Corresponding Author:** Hyojee Joung, Tel: 02-740-8865, Fax: 02-745-9104, E-mail: hjjoung@snu.ac.kr

Compared to nationwide data collected by the KNHNS 2001, residents of Chuncheon over 30 years of age have a higher prevalence of obesity (51.9% vs. 36.6%), hypercholesterolemia (14.8% vs. 9.3%), and hypertension (56.5% vs. 24.6%; Chuncheon City, 2003; KNHNS, 2001). These values emphasize the need for public health education to modify dietary behaviors and to reduce or prevent the risk of chronic diseases that result from unhealthy dietary patterns.

Considering the potentially serious impact of dining out on nutrition and health, it is necessary to understand eating-out behaviors in order to develop programs that promote healthy habits**.** Here we have examined the patterns and features of eating-out behaviors of community residents from Chuncheon. We compared our results to the KNHNS 2001 to develop a nutrition promotion program that is specifically targeted to this group.

Table 1. General characteristics of the residents of Chuncheon and the subjects from KNHNS 2001 Unit: n (%)

	Chuncheon (2002)			Korean National Health and Nutrition Survey (2001)		
	Male: No. (%)	Female: No. (%)	P-value[1)]	Male: No. (%)	Female: No. (%)	P-value[1)]
Age						
30-39	18 (8.3)	58 (11.1)		860 (32.4)	947 (30.6)	
40-49	36 (16.6)	114 (21.8)		791 (29.8)	822 (26.6)	
50-59	44 (20.3)	117 (22.4)	0.004	459 (17.3)	522 (16.9)	<0.001
60-69	68 (31.3)	168 (32.2)		349 (13.2)	444 (14.4)	
70+	51 (23.5)	65 (12.5)		192 (7.2)	358 (11.6)	
Total	217 (100)	522 (100)		2651 (100)	3093 (100)	
Occupation						
Non-physical	86 (39.6)	128 (24.5)		1199 (45.2)	745 (24.1)	
Physical	110 (50.7)	113 (21.6)	<0.001	983 (37.1)	535 (17.3)	<0.001
Other[2)]	21 (9.7)	281 (53.8)		469 (17.7)	1813 (58.6)	
Total	217 (100)	522 (100)		2651 (100)	3093 (100)	
Marital status						
Married	185 (85.3)	372 (71.3)		2350 (88.6)	2372 (76.7)	
Widow/Widower	13 (6.0)	130 (24.9)	<0.001	47 (1.8)	558 (18.0)	<0.001
Other[3)]	19 (8.8)	20 (3.8)		254 (9.6)	163 (5.3)	
Total	217 (100)	522 (100)		2651 (100)	3093 (100)	
Monthly Income						
≤500,000 won	97 (44.7)	216 (41.4)		248 (9.4)	454 (14.7)	
510,000-1,500,000	75 (34.6)	181 (34.7)	0.581	929 (35.0)	1084 (35.0)	<0.001
≥1,510,000	45 (20.7)	125 (23.9)		1474 (55.6)	1555 (50.3)	
Total	217 (100)	522 (100)		2651 (100)	3093 (100)	
Residence[4)]						
Urban	89 (41.0)	270 (51.7)	0.008	2034 (77.0)	2323 (75.5)	0.094
Rural	128 (59.0)	252 (48.3)		607 (23.0)	754 (24.5)	
Total	217 (100)	522 (100)		2641 (100)	3077 (100)	
Educational Level[4)]						
Elementary	109 (50.2)	313 (60.0)		455 (17.2)	1094 (35.4)	
Middle school	37 (17.1)	62 (11.9)	0.057	359 (13.6)	461 (14.9)	<0.001
High school	45 (20.7)	102 (19.5)		949 (35.8)	1038 (33.6)	
College	26 (12.0)	45 (8.6)		885 (33.4)	496 (16.1)	
Total	217 (100)	522 (100)		2648 (100)	3089 (100)	
BMI (kg/m^2)[4)]						
Underweight (<18.5)	5 (2.3)	6 (1.1)		75 (3.6)	124 (4.5)	
Normal (18.5-24.9)	113 (52.1)	234 (44.8)	0.075	1325 (63.1)	1743 (63.6)	0.187
Overweight (>25.0)	99 (45.6)	282 (54.0)		699 (33.3)	875 (31.9)	
Total	217 (100)	522 (100)		2099 (100)	2742 (100)	

[1)] P-value from Chi-square test [2)] Student, housewife, unemployed [3)] single, divorced.
[4)] The number of subtotal subjects less than 57.44 in KNHNS was missing from each distribution.

Subjects and Methods

Subjects

A total of 1,007 people over 30 years of age were selected from two urban areas and nine rural areas belonging to Chuncheon, Kangwon Province, South Korea. They were recruited for a community assessment program through announcements from health practitioners and the Chief of Dong Office in 2002. Participation in the survey was voluntary. After the survey, 268 subjects were excluded because they failed to answer all questions regarding their habits while eating out: e.g.,

Table 2. The frequency of eating out among residents of Chuncheon and subjects from the KNHNS 2001 Unit: n (%)

Variable	Group	Chuncheon (2002)						Korean National Health and Nutrition Survey (2001)					
		Daily	1-2 times/ week	1-2 times/ month	Never or a few times/yr	Total	P-value[1)]	Daily	1-2 times/ week	1-2 times/ month	Never	Total	P-value[1)]
Sex	Male	6 (2.8)	49 (22.6)	91 (41.9)	71 (32.7)	217 (100)	*N.S.*	1030 (38.9)	548 (20.7)	526 (19.8)	547 (20.6)	2651 (100)	<0.001
	Female	6 (1.1)	86 (16.5)	251 (48.1)	179 (34.3)	522 (100)		443 (14.3)	735 (23.8)	818 (26.4)	1097 (35.5)	3093 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1473 (25.6)	1283 (22.3)	1344 (23.4)	1644 (28.6)	5744 (100)	
Age	30-39	3 (3.9)	15 (19.7)	41 (53.9)	17 (22.4)	76 (100)	0.001	597 (33.0)	517 (28.6)	462 (25.6)	231 (12.8)	1807 (100)	<0.001
	40-49	1 (0.7)	41 (27.3)	66 (44.0)	42 (28.0)	150 (100)		516 (32.0)	377 (23.4)	373 (23.1)	347 (21.5)	1613 (100)	
	50-59	2 (1.2)	34 (21.1)	75 (46.6)	50 (31.1)	161 (100)		230 (23.4)	210 (21.4)	225 (22.9)	316 (32.2)	981 (100)	
	60-69	4 (1.7)	29 (12.3)	117 (49.6)	86 (36.4)	236 (100)		102 (12.9)	123 (15.5)	184 (23.2)	384 (48.4)	793 (100)	
	70+	2 (1.7)	16 (13.8)	43 (37.1)	55 (47.4)	116 (100)		28 (5.1)	56 (10.2)	100 (18.2)	366 (66.5)	550 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1473 (25.6)	1283 (22.3)	1344 (23.4)	1644 (28.6)	5744 (100)	
Occupation	Non-physical	4 (1.9)	40 (18.7)	104 (48.6)	66 (30.8)	214 (100)	*N.S.*	824 (42.4)	472 (24.3)	348 (17.9)	300 (15.4)	1944 (100)	<0.001
	Physical	2 (0.9)	40 (17.9)	101 (45.3)	80 (35.9)	223 (100)		439 (28.9)	255 (16.8)	367 (24.2)	457 (30.1)	1518 (100)	
	Other[2)]	6 (2.0)	55 (18.2)	137 (45.4)	104 (34.4)	302 (100)		210 (9.2)	556 (24.4)	629 (27.6)	887 (38.9)	2282 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1473 (25.6)	1283 (22.3)	1344 (23.4)	1644 (28.6)	5744 (100)	
Marital status	Married	11 (2.0)	108 (19.4)	254 (45.6)	184 (33.0)	214 (100)	*N.S.*	1218 (25.8)	1118 (23.7)	1182 (25.0)	1204 (25.5)	4722 (100)	<0.001
	Widow/ Widower	0 (0.0)	17 (11.9)	70 (49.0)	56 (39.2)	143 (100)		64 (10.6)	79 (13.1)	115 (19.0)	347 (57.4)	605 (100)	
	Other[3)]	1 (2.6)	10 (25.6)	18 (46.2)	10 (25.6)	39 (100)		191 (45.8)	86 (20.6)	47 (11.3)	93 (22.3)	417 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1473 (25.6)	1283 (22.3)	1344 (23.4)	1644 (28.6)	5744 (100)	
Family Income	≤500,000 won	1 (0.3)	39 (12.5)	138 (44.1)	135 (43.1)	313 (100)	<0.001	68 (9.7)	73 (10.4)	143 (20.4)	418 (59.5)	702 (100)	<0.001
	510,000-1,500,000 won	5 (2.0)	44 (17.2)	117 (45.7)	90 (35.2)	256 (100)		475 (23.6)	379 (18.8)	496 (24.6)	663 (32.9)	2013 (100)	
	≥1,510,000 won	6 (3.5)	52 (30.6)	87 (51.2)	25 (14.7)	170 (100)		930 (30.7)	831 (27.4)	705 (23.3)	563 (18.6)	3029 (100	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1473 (25.6)	1283 (22.3)	14 (23.4)	1644 (28.6)	5744 (100)	
Residential area	Urban	7 (1.9)	84 (23.4)	168 (46.8)	100 (27.9)	359 (100)	<0.001	1260 (28.9)	1068 (24.5)	1006 (23.1)	1023 (23.5)	4357 (100)	<0.001
	Rural	5 (1.3)	51 (13.4)	174 (45.8)	150 (39.5)	380 (100)		209 (15.4)	207 (15.2)	334 (24.5)	611 (44.9)	1361 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1469 (25.7)	1275 (22.3)	1340 (23.4)	1634 (28.6)	5718 (100)[4)]	
Educational Level	Elementary	3 (0.7)	51 (12.1)	188 (44.5)	180 (42.7)	422 (100)	<0.001	167 (10.8)	165 (10.7)	325 (21.0)	892 (57.6)	1549 (100)	<0.001
	Middle school	4 (4.0)	16 (16.2)	49 (49.5)	30 (30.3)	99 (100		175 (21.3)	151 (18.4)	217 (26.5)	277 (33.8)	820 (100)	
	High school	0 (0.0)	43 (29.3)	74 (50.3)	30 (20.4)	147 (100)		549 (27.6)	517 (26.0)	555 (27.9)	366 (18.4)	1987 (100)	
	College	5 (7.0)	25 (35.2)	31 (43.7)	10 (14.1)	71 (100)		581 (42.1)	450 (32.6)	242 (17.5)	108 (7.8)	1381 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1472 (25.7)	1283 (22.4)	1339 (23.3)	1643 (28.6)	5737 (100)[4)]	
BMI (kg/m^2)	Underweight (<18.5)	0 (0.0)	3 (27.3)	6 (54.5)	2 (18.2)	11 (100)	*N.S.*	31 (15.6)	44 (22.1)	41 (20.6)	83 (41.7)	199 (100)	0.001
	Normal (18.5-24.9)	3 (0.9)	66 (19.0)	153 (44.1)	125 (36.0)	347 (100)		728 (23.7)	716 (23.3)	754 (24.6)	870 (28.4)	3068 (100)	
	Overweight (>25.0)	9 (2.4)	66 (17.3)	183 (46.3)	123 (32.30	381 (100)		374 (23.8)	327 (20.8)	378 (24.0)	495 (31.4)	1574 (100)	
	Total	12 (1.6)	135 (18.3)	342 (46.3)	250 (33.8)	739 (100)		1133 (23.4)	1087 (22.5)	1173 (24.2)	1448 (29.9)	4841 (100)[4)]	

[1)] P-value from Chi-square test [2)] student, housewife, unemployed [3)] single, divorced.
[4)] The number of subtotal subjects less than 5744 in KNHNS was missing from each distribution.

Table 3. Reasons for eating out Unit: n (%)

Variable	Group	Special day	Meeting	Taste	Enjoyment (saving time or labor)	Other	Total	P-value[1)]
Sex	Male	27 (12.4)	109 (50.2)	23 (10.6)	25 (11.5)	33 (15.2)	217 (100)	*N.S.*
	Female	87 (16.7)	236 (45.2)	64 (12.3)	58 (11.1)	77 (14.8)	522 (100)	
Age	30-39	10 (13.2)	21 (27.6)	19 (25.0)	17 (22.4)	9 (11.8)	76 (100)	<0.001
	40-49	27 (18.0)	69 (45.0)	21 (14.0)	22 (14.7)	11 (7.3)	150 (100)	
	50-59	27 (16.8)	87 (54.0)	12 (7.5)	19 (11.8)	16 (9.9)	161 (100)	
	60-69	32 (13.6)	123 (52.1)	23 (9.7)	18 (7.6)	40 (16.9)	236 (100)	
	70+	18 (15.5)	45 (38.8)	12 (10.3)	7 (6.0)	34 (29.3)	116 (100)	
Occupation	Non-physical	24 (11.2)	102 (47.7)	29 (13.6)	25 (11.7)	34 (15.9)	214 (100)	*N.S.*
	Physical	37 (16.6)	117 (52.5)	18 (8.1)	25 (11.2)	26 (11.7)	223 (100)	
	Other[2)]	53 (17.5)	126 (41.7)	40 (12.3)	33 (10.9)	50 (16.6)	302 (100)	
Marital status	Married	87 (15.6)	267 (47.9)	63 (11.3)	64 (11.5)	76 (13.6)	557 (100)	*N.S.*
	Widow/Widower	21 (14.7)	65 (45.5)	16 (11.2)	12 (8.4)	29 (20.3)	143 (100)	
	Other[3)]	6 (15.4)	13 (33.3)	8 (20.5)	7 (17.9)	5 (12.8)	39 (100)	
Family Income	≤500,000 won	54 (17.3)	145 (46.3)	32 (10.2)	22 (7.0)	60 (19.2)	313 (100)	<0.001
	510,000-1,500,000 won	39 (15.2)	134 (52.3)	24 (9.4)	26 (10.2)	33 (12.9)	256 (100)	
	≥1,510,000 won	21 (12.4)	66 (38.8)	31 (18.2)	35 (20.6)	17 (10.0)	170 (100)	
Residential area	Urban	42 (11.7)	162 (45.1)	59 (16.4)	49 (13.6)	47 (13.1)	359 (100)	<0.001
	Rural	72 (18.9)	183 (48.2)	28 (7.4)	34 (8.9)	63 (16.6)	380 (100)	
Educational Level	Elementary	72 (17.1)	207 (49.1)	37 (8.8)	30 (7.1)	76 (18.0)	422 (100)	<0.001
	Middle school	17 (17.2)	50 (50.5)	10 (10.1)	16 (16.2)	6 (6.1)	99 (100)	
	High school	20 (13.6)	63 (42.9)	23 (15.6)	21 (14.3)	20 (13.6)	147 (100)	
	College	5 (7.0)	25 (35.2)	17 (23.9)	16 (22.5)	8 (11.3)	71 (100)	
BMI (kg/m^2)	Underweight (<18.5)	1 (9.1)	4 (36.4)	4 (36.4)	2 (18.2)	0 (0.0)	11 (100)	*N.S.*
	Normal (18.5-24.9)	59 (17.0)	157 (45.2)	40 (11.5)	45 (13.0)	46 (13.3)	347 (100)	
	Overweight (>25.0)	54 (14.2)	184 (48.3)	43 (11.3)	36 (9.4)	64 (16.8)	381 (100)	
Total		114 (15.4)	345 (46.7)	87 (11.8)	83 (11.2)	110 (14.9)	739 (100)	

[1)] P-value from Chi-square test [2)] student, housewife, unemployed [3)] single, divorced.

frequency, reason, selection standard, meal selected, and their opinion about restaurant service. Ultimately, 739 subjects (217 male and 522 female) were used in the analysis. We also analyzed the data from 5,744 subjects that had participated in the KNHNS 2001. The KNHNS subjects were also over 30 and had completed a similar questionnaire regarding eating outside of the home and health-related behaviors. We compared the dining-out behaviors of the residents of Chuncheon to the nationwide data.

Measurements

Information on general characteristics, such as gender, age, occupation, marital status, family income, residential area, and level of education, and more specific information regarding eating-out behaviors were obtained by a personal interview with a structured questionnaire**.** Anthropometric measurements, such as height and weight, were measured using bioelectric impedance analysis (Inbody 3.0, Biospace Co., Korea), and the body mass index (BMI) was calculated as weight (kg)/ height^2 (m).

Age was classified into five categories: thirties, forties, fifties, sixties, and seventies and over. Marital status was divided into three categories: married, widowed, or "other" (single, divorced). Family income was categorized from ≤500,000 won, 510,000-1,500,000 won, or ≥1,510,000 won. The highest educational level achieved was divided into four groups: elementary or less, middle school, high school, or college. Occupational status was classified as non-physical, physical, or "other," and residential area was classified into either urban or rural. BMI were categorized into three groups: underweight (BMI <18.5), normal (18.5 ≤ BMI ≤ 24.9), or overweight (BMI >25.0). Questions concerning dining-out behaviors included frequency, reason, selection standard, selected meal, and opinion about restaurant service.

Informed consent was obtained from each subject after full explanation of the purpose, procedures, and risks of the study.

The data obtained from the residents of Chuncheon were compared to those from the subjects who had participated in the KNHNS 2001. Information on gender, age, occupation, marital

Table 4. Selection standard when eating a meal outside of the home Unit: n (%)

Variable	Group	Like the food	Taste	Family recommendation	Price	Nutrition	Other	Total	P-value[1)]
Sex	Male	83 (38.2)	60 (27.6)	23 (10.6)	19 (8.8)	13 (6.0)	19 (8.8)	217 (100)	*N.S.*
	Female	223 (42.7)	160 (30.7)	40 (7.7)	33 (6.3)	28 (5.4)	38 (7.3)	522 (100)	
Age	30-39	48 (63.2)	18 (23.7)	6 (7.9)	1 (1.3)	1 (1.3)	2 (2.6)	75 (100)	<0.001
	40-49	69 (46.0)	37 (24.7)	15 (10.0)	9 (6.0)	12 (8.0)	8 (5.3)	150 (100)	
	50-59	65 (40.0)	42 (26.1)	8 (5.0)	19 (11.8)	15 (9.3)	12 (7.5)	161 (100)	
	60-69	87 (36.9)	82 (34.7)	20 (8.5)	15 (6.4)	8 (3.4)	24 (10.2)	236 (100)	
	70+	37 (31.9)	41 (35.3)	14 (12.1)	8 (6.9)	5 (4.3)	9.5 (5.7)	116 (100)	
Occupation	Non-physical	94 (43.9)	48 (22.4)	25 (11.7)	18 (8.4)	10 (4.7)	19 (8.9)	214 (100)	0.017
	Physical	97 (43.5)	60 (26.9)	14 (6.3)	14 (6.3)	16 (7.2)	22 (9.9)	223 (100)	
	Other[2)]	115 (38.1)	112 (37.1)	24 (7.9)	20 (6.6)	15 (5.0)	16 (5.3)	302 (100)	
Marital status	Married	227 (40.8)	167 (30.0)	46 (8.3)	37 (6.6)	32 (5.7)	48 (8.6)	557 (100)	*N.S.*
	Widow/Widower	54 (37.8)	49 (34.3)	12 (8.4)	13 (9.1)	7 (4.9)	8 (5.6)	143 (100)	
	Other[3)]	25 (64.1)	4 (10.3)	5 (12.8)	2 (5.1)	1 (5.1)	1 (2.6)	39 (100)	
Family Income	≤500,000 won	108 (34.5)	99 (31.6)	32 (10.2)	24 (7.7)	18 (5.8)	32 (10.2)	313 (100)	*N.S.*
	510,000-1,500,000 won	116 (45.3)	76 (29.7)	18 (7.0)	17 (6.6)	12 (4.7)	17 (6.6)	256 (100)	
	≥1,510,000 won	82 (48.2)	45 (26.5)	13 (7.6)	11 (6.5)	11 (6.5)	8 (4.7)	170 (100)	
Residential area	Urban	153 (42.6)	107 (29.8)	39 (10.9)	24 (6.7)	20 (5.6)	16 (4.5)	359 (100)	0.013
	Rural	153 (40.3)	113 (29.7)	24 (6.3)	28 (7.4)	21 (5.5)	41 (10.8)	380 (100)	
Educational Level	Elementary	147 (34.8)	147 (34.8)	37 (8.8)	33 (7.8)	22 (5.2)	36 (8.5)	422 (100)	0.002
	Middle school	44 (44.4)	23 (23.2)	10 (10.1)	6 (6.1)	9 (9.1)	7 (7.1)	99 (100)	
	High school	69 (46.9)	40 (27.2)	10 (6.8)	11 (7.5)	9 (6.1)	8 (5.4)	147 (100)	
	College	46 (64.8)	10 (14.1)	6 (8.5)	2 (2.8)	1 (1.4)	6 (8.5)	71 (100)	
BMI (kg/m^2)	Underweight (<18.5)	3 (27.3)	4 (36.4)	1 (9.1)	0 (0.0)	1 (9.1)	2 (18.2)	11 (100)	*N.S.*
	Normal (18.5-24.9)	151 (43.5)	98 (28.2)	27 (7.8)	23 (6.6)	18 (5.2)	30 (8.6)	347 (100)	
	Overweight (>25.0)	152 (39.9)	118 (31.0)	35 (9.2)	29 (7.6)	22 (5.8)	14 (6.6)	381 (100)	
Total		306 (41.4)	220 (29.8)	63 (8.5)	52 (7.0)	41 (5.5)	57 (7.7)	739 (100)	

[1)] P-value from Chi-square test [2)] student, housewife, unemployed [3)] single, divorced.

status, family income, residential area, education level, and BMI were also obtained from the KNHNS 2001 and categorized in the same manner as the data from the residents of Chuncheon.

Statistical analysis

Data were analyzed using SPSS 12.0 for Windows (SPSS, Inc., Chicago). All values were expressed as frequencies and percentages. The statistical significances among the variables were verified by χ^2-tests ($p<0.05$).

Results

The general characteristics of the subjects are shown in Table 1. From the study population, 75.1% were over 50, and the mean age of males was greater than that of females (59.3 years vs. 55.7 years). The levels of education and family income of respondents were relatively low compared to the subjects from KNHNS. Fifty-five percent of the respondents had only elementary (or less) education, and 42.3% of respondents had a family income below 500,000 won per month. With regard to occupation, 50.7% of males worked as physical laborers, and 53.8% of females were housewives. Marital status showed that 75.3% of the subjects were married (85.3% of males and 71.3% of females). The mean BMIs for males and females were 24.7 and 25.8, respectively, which were not significantly different.

Table 2 shows the frequency of eating out for Chuncheon residents and subjects from the KNHNS 2001. Most subjects (80.1%) indicated that they go out to eat less than twice per month: 33.8% never went out, 46.3% went out once or twice a month, 18.3% went out once or twice a week, and 1.6% went out to eat daily. These data indicate that the residents of Chuncheon go out to eat much less frequently than do the subjects that participated in KNHNS (52.0% went out less than twice per month). Younger people ate out more frequently than did older people ($p<0.001$). The frequency of eating out was significantly different according to family income, residential

Table 5. Type of meal selected when eating out Unit: n (%)

Variable	Group	Korean food	Chinese food	Japanese food	Noodles & Snack food	Other	Total	P-value[1)]
Sex	Male	116 (53.6)	46 (21.2)	13 (6.0)	28 (12.9)	14 (6.5)	217 (100)	<0.001
	Female	293 (56.1)	49 (9.4)	34 (6.5)	81 (15.5)	65 (12.5)	522 (100)	
Age	30-39	29 (38.2)	7 (9.2)	6 (7.9)	18 (23.7)	16 (21.1)	76 (100)	<0.001
	40-49	82 (54.7)	26 (17.3)	7 (4.7)	27 (18.0)	8 (5.3)	150 (100)	
	50-59	77 (47.8)	29 (18.0)	13 (8.1)	26 (16.1)	16 (9.9)	161 (100)	
	60-69	151 (64.0)	22 (9.3)	10 (4.2)	24 (10.2)	29 (12.3)	236 (100)	
	70+	70 (60.3)	11 (9.5)	11 (9.5)	14 (12.1)	10 (8.6)	116 (100)	
Occupation	Non-physical	125 (58.4)	28 (13.1)	16 (7.5)	28 (13.1)	17 (7.9)	214 (100)	0.022
	Physical	117 (52.5)	39 (17.5)	17 (7.6)	32 (14.3)	18 (8.1)	223 (100)	
	Other[2)]	167 (55.3)	28 (9.3)	14 (4.6)	49 (16.2)	44 (14.6)	302 (100)	
Marital status	Married	302 (54.2)	77 (13.8)	33 (5.9)	88 (15.8)	57 (10.2)	557 (100)	*N.S.*
	Widow/Widower	88 (61.5)	14 (9.8)	10 (7.0)	14 (9.8)	17 (11.9)	143 (100)	
	Other[3)]	19 (48.7)	4 (10.3)	4 (10.3)	7 (17.9)	5 (12.8)	39 (100)	
Family Income	≤500,000 won	182 (58.1)	40 (12.8)	20 (6.4)	35 (11.2)	36 (11.5)	313 (100)	*N.S.*
	510,000-1,500,000 won	130 (50.8)	36 (14.1)	14 (5.5)	51 (19.9)	25 (9.8)	256 (100)	
	≥1,510,000 won	97 (57.1)	19 (11.2)	13 (7.6)	23 (13.5)	18 (10.6)	170 (100)	
Residential area	Urban	188 (52.4)	46 (12.8)	23 (6.4)	60 (16.7)	42 (11.7)	359 (100)	*N.S.*
	Rural	221 (58.2)	49 (12.9)	24 (6.3)	49 (12.9)	39 (9.7)	380 (100)	
Educational level	Elementary	248 (58.8)	51 (12.1)	26 (6.2)	54 (12.8)	43 (10.2)	422 (100)	*N.S.*
	Middle school	50 (50.5)	17 (17.2)	6 (6.1)	17 (17.2)	9 (9.1)	99 (100)	
	High school	69 (46.9)	22 (15.0)	11 (7.5)	28 (19.0)	17 (11.6)	147 (100)	
	College	42 (59.2)	5 (7.0)	4 (5.6)	10 (14.1)	10 (14.1)	71 (100)	
BMI (kg/m^2)	Underweight (<18.5)	7 (63.6)	0 (0.0)	2 (18.2)	1 (9.1)	1 (9.1)	11 (100)	*N.S.*
	Normal (18.5-24.9)	188 (54.2)	46 (13.3)	17 (4.9)	53 (15.3)	43 (12.4)	347 (100)	
	Overweight (>25.0)	214 (56.2)	49 (12.9)	28 (7.9)	55 (14.4)	35 (9.2)	381 (100)	
Total		409 (55.3)	95 (12.9)	47 (6.4)	109 (14.7)	79 (10.7)	739 (100)	

[1)] P-value from Chi-square test [2)] student, housewife, unemployed [3)] single, divorced.

area, and educational level. The respondents with higher family incomes, urban residences, and higher education ate out more frequently than other respondents with lower family incomes ($p<0.001$), but there was no significant difference in the subject distribution according to gender, occupation, or marital status. From the KNHNS data, males, young people, subjects with non-physical occupations, higher incomes, higher education, higher BMI, and urban residences ate out more frequently ($p<0.01$).

The reasons for eating out are listed in Table 3. The main reasons for dining out were personal or business meetings (46.7%), special days (15.4%), and enjoyment (11.2%), and these differed by age, family income, educational level, and occupation (Table 3). Selecting a meal outside of the home was mostly based on meal preference (41.4%) and the taste of the food (29.8%); few subjects were concerned with the nutrition of the meal (5.5%), family recommendation (8.5%), or the meal price (7.0%).

Table 5 shows that a Korean-style meal was the most popular choice for people eating out (55.3%), followed by noodles and snacks (14.7%) and Chinese food (12.9%). The type of meal selected differed significantly based on gender, age, and occupation ($p<0.05$). The degree of satisfaction with restaurant service, as rated by taste of the food, nutrition, price, amount, service, sanitation, and subsidiary facilities, was influenced by gender, age, occupation, marital status, family income, residential area, and educational level (Table 6).

Discussion

As the dietary behavior of Koreans shifts toward more westernized and convenient foods and Koreans become increasingly dependent on dining out, the nutritional status of individuals could seriously deteriorate, leaving them more vulnerable to chronic diseases. Eating out may become a major determinant in nutritional problems if this trend continues into the future. According to the KNHNS 2001, the number of people that eat out more than once a day increased from 20.5% in 1998

Table 6. Opinions of restaurant services Unit: n(%)

Variable	Group	Food taste		Food nutrition		Amount		Food price		Service		Sanitation		Subsidiary facilities	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Sex	Male	153(70.5)	64(29.5)	102(47.0)	115(53.0)	133(61.3)	84(38.7)	91(41.9)	126(58.1)	113(52.1)	104(47.9)	109(50.2)	108(49.8)	73(33.6)	144(66.4)
	Female	309(59.2)	213(40.8)	309(59.2)	213(40.8)	284(54.4)	238(45.6)	203(38.9)	319(61.1)	260(49.8)	262(50.2)	252(48.3)	270(51.7)	187(35.8)	335(64.2)
	P-value[1)]	0.004		0.017		*N.S.*		*N.S.*		*N.S.*		*N.S.*		*N.S.*	
Age	30-39	57(75.0)	19(25.0)	30(39.5)	46(60.5)	41(53.9)	35(46.1)	29(38.2)	47(61.8)	33(43.4)	43(56.6)	28(23.7)	48(63.2)	18(23.7)	58(76.3)
	40-49	84(56.0)	66(44.0)	62(41.63)	88(58.7)	92(61.3)	58(38.7)	66(44.0)	84(56.0)	76(50.7)	74(49.3)	68(45.3)	82(54.7)	55(36.7)	95(63.3)
	50-59	100(62.1)	61(37.9)	64(39.8)	97(60.2)	96(59.6)	65(40.4)	63(39.1)	98(60.9)	81(50.3)	80(49.7)	73(45.3)	88(54.7)	56(34.8)	105(65.2)
	60-69	152(64.4)	84(35.6)	102(43.2)	134(56.8)	130(55.1)	106(44.9)	93(39.4)	143(60.6)	130(55.1)	106(44.9)	126(53.4)	110(46.6)	92(39.0)	144(61.0)
	70+	69(59.5)	47(40.5)	40(34.5)	76(65.5)	58(50.0)	58(50.0)	43(37.1)	73(62.9)	53(45.7)	63(54.3)	66(56.9)	50(43.1)	39(33.6)	77(66.4)
	P-value[1)]	*N.S.*		*N.S.*		*N.S.*		*N.S.*		*N.S.*		0.028		*N.S.*	
Occupation	Non-physical	147(68.7)	67(31.30	90(42.1)	124(57.9)	114(53.3)	100(46.7)	80(37.4)	134(62.6)	94(43.9)	120(56.1)	93(43.5)	121(56.5)	60(28.0)	154(72.0)
	Physical	143(64.1)	80(35.9)	93(41.7)	130(58.3)	138(61.9)	85(38.1)	97(43.5)	126(56.5)	130(58.3)	93(41.7)	121(54.3)	102(45.7)	90(40.0)	133(59.6)
	Other[2)]	172(57.0)	130(43.0)	115(38.1)	187(61.9)	165(54.6)	137(45.4)	117(38.7)	185(61.3)	147(49.3)	153(50.7)	147(48.7)	155(51.3)	110(36.4)	192(63.6)
	P-value[1)]	0.021		*N.S.*		*N.S.*		*N.S.*		0.010		*N.S.*		0.022	
Marital status	Married	351(63.0)	206(37.0)	226(40.6)	331(59.4)	333(59.8)	224(40.20	237(42.5)	320(57.5)	283(50.8)	274(49.2)	271(48.7)	286(51.3)	195(35.0)	362(65.0)
	Widow/ Widower	83(58.0)	60(42.0)	55(38.5)	88(61.5)	64(44.8)	79(55.2)	41(28.7)	102(71.3)	72(50.3)	71(49.7)	78(54.5)	65(45.5)	58(40.6)	85(59.4)
	Other[3)]	28(71.8)	11(28.2)	17(43.6)	22(56.4)	20(51.3)	19(48.7)	16(41.0)	23(59.0)	18(46.2)	21(53.8)	12(30.8)	27(69.2)	7(17.9)	32(82.1)
	P-value[1)]	*N.S.*		*N.S.*		0.004		0.010		*N.S.*		*N.S.*		*N.S.*	
Family Income	≤500,000	191(61.0)	122(39.0)	123(39.3)	190(60.7)	173(55.3)	140(44.7)	123(39.3)	190(60.7)	160(51.1)	153(48.9)	167(53.4)	146(46.6)	103(32.9)	210(67.1)
	510,000 -1,500,000	148(57.8)	108(42.2)	103(40.2)	153(59.8)	145(56.6)	111(43.4)	101(39.5)	155(60.5)	139(54.3)	117(45.7)	126(49.2)	130(50.8)	95(37.1)	161(62.9)
	≥1,510,000	123(72.4)	47(27.6)	72(42.4)	98(57.6)	99(58.2)	71(41.8)	70(41.2)	100(58.8)	74(43.5)	96(56.5)	68(40.0)	102(60.0)	62(36.5)	108(63.5)
	P-value[1)]	0.008		*N.S.*		*N.S.*		*N.S.*		*N.S.*		0.019		*N.S.*	
Residential area	Urban	242(67.4)	117(32.6)	147(41.2)	211(58.8)	197(54.9)	162(45.1)	140(39.0)	219(61.0)	160(44.6)	199(55.4)	163(45.4)	196(54.6)	112(31.2)	247(68.8)
	Rural	220(57.9)	160(42.1)	150(39.5)	230(60.5)	220(57.9)	160(42.1)	154(40.5)	226(59.6)	213(26.1)	167(43.9)	198(52.1)	182(47.9)	147(38.9)	232(61.1)
	P-value[1)]	0.008		*N.S.*		*N.S.*		*N.S.*		0.002		0.069		0.027	
Educational level	Elementary	249(38.4)	173(41.0)	162(38.4)	260(61.6)	236(55.9)	186(44.1)	161(38.2)	261(61.8)	224(53.1)	198(46.9)	223(52.8)	199(47.2)	149(35.3)	273(64.7)
	Middle school	57(57.6)	42(42.4)	41(41.4)	58(58.6)	57(57.6)	42(42.4)	45(45.5)	54(54.5)	57(57.6)	42(42.4)	54(54.5)	45(45.4)	39(39.4)	60(60.6)
	High school	105(71.4)	42(28.6)	65(44.2)	82(55.8)	88(59.9)	59(40.1)	63(42.9)	84(57.1)	63(42.9)	84(57.1)	63(42.9)	84(57.1)	52(35.4)	95(64.6)
	College	51(71.8)	20(28.2)	30(42.3)	41(57.7)	36(50.7)	35(49.3)	25(35.2)	46(64.8)	29(40.8)	42(59.2)	21(29.6)	50(70.4)	20(28.2)	51(71.8)
	P-value[1)]	0.012		*N.S.*		*N.S.*		*N.S.*		0.027		0.001		*N.S.*	
BMI(kg/m^2)	Underweight (<18.5)	9(81.8)	2(18.2)	5(45.5)	6(54.5)	6(54.5)	5(45.5)	7(63.6)	4(36.4)	4(36.4)	7(63.6)	6(54.5)	5(45.5)	5(45.5)	6(54.5)
	Normal (18.5-24.9)	221(63.7)	126(36.3)	140(40.3)	207(59.7)	205(59.1)	142(40.9)	147(42.4)	200(57.6)	171(49.3)	176(50.7)	164(47.3)	183(52.7)	127(36.6)	220(63.4)
	Overweight (>25.0)	232(60.9)	147(39.1)	153(40.2)	228(59.80	206(54.1)	175(45.9)	140(36.7)	241(63.3)	198(52.0)	183(48.0)	191(50.1)	190(49.9)	128(33.6)	253(66.4)
	P-value[1)]	*N.S.*		*N.S.*		*N.S.*		*N.S.*		*N.S.*		*N.S.*		*N.S.*	

[1)] P-value from Chi-square test [2)] student, housewife, unemployed [3)] single, divorced

to 33.2% in 2001; the frequency of eating out differed according to gender, sex, occupation, educational level, family income, marital status, personal preference, and residential areas (Duffey *et al*., 2007; Kim & Lee, 2004; Park & Chung, 2004).

We have shown that the frequency of eating out among Chuncheon residents is much lower than that of the people who participated in the KNHNS 2001. The percentage of Chuncheon residents who ate out less than twice per month was 80.1%, which was lower than that of Yeosu residents (66.4%; Jung & Jung, 2003) and Seoul (54.9%; Park & Chung, 2004). The national value reported by KNHNS 2001 was 44.1%. It may be that Chuncheon residents eat out less frequently as a result of age, lower education, and lower family incomes compared to the residents of other cities (Table 2).

Several studies have reported a positive association between the frequency of eating out and body fat and weight gain. This is because restaurant meals not only tend to be higher in fat, but also offer larger portions (French *et al*., 2000; Lin *et al*., 1996; McCrory *et al*., 1999; Root *et al*., 2004). Although the KNHNS 2001 showed that subjects with higher BMIs ate out more frequently, there was no association between the frequency of eating out and BMI in Chuncheon. Duffey *et al*. (2007) showed

that the consumption of fast food, but not restaurant food, is positively associated with increased BMI. This result may partially explain our data: Chuncheon residents eat out infrequently, and, when they do, they select Korean food instead of fast food (Table 2, 5).

The reasons for eating out included meetings (46.7%) and celebrating a special day (15.4%). These results are similar to those of another study based on the residents of Busan, where family (48.7%) and social gatherings (40.4%) were commonly cited reasons for eating out (Kim 1994). Working males, in particular, choose to eat out for "social gatherings" (Han, 1992; Park & Shin, 1996).

Chuncheon residents selected their meals based on preference (41.4%) and taste (29.8%), whereas nutrition, sanitation, and family recommendation were not influential factors in any age group. However, Kim (2004) reported that taste and sensual factors are the most important factors in choosing the menu when eating out. Meanwhile, Lee and Um (2004) showed that older people are more likely to choose meals based on others' recommendations rather than their own preferences. Payette and Shatenstein (2005) also reported that senior citizens are more influenced by family members, social inputs, and social/economic reasons than their own preferences when they choose food. Eating out influences dietary practices associated with the formation of the nuclear family, the 5-day workweek, and increased leisure time. The motivation or purpose of eating out can also result in various patterns of eating out (Kim, 2004; Park & Chung, 2004).

Our study had several limitations. First, a cross-sectional study may not truly represent the residents of Chuncheon, because only the subjects who were willing to participate in the survey were included. Second, most of the respondents were between 50 and 60 years old, and their economic and educational levels are generally lower than the overall population of Chuncheon.

In summary, our results demonstrated that the frequency of dining out among the residents of Chuncheon is much lower than the national average, and eating-out behaviors are dependent upon the socio-demographic and personal characteristics of the residents. Therefore, programs to promote nutrition and healthy habits when eating out should be based on these observed behaviors. These programs need to be tailored to specifically target this group.

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