

# Selected data on weight control behaviour of Korean middle school students in Jeonju/South Korea

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## Summary

Between April and May 2011, 334 male and female schoolchildren in the seventh and eighth classes in 6 middle schools in Jeonju (South Korea) were asked about their behaviour with respect to weight control. The group consisted of 49.4 % girls and 50.6 % boys, with an average age of  $15.3 \pm 0.7$  and  $15.5 \pm 0.5$  years, respectively. 85.5 % of the girls and 82.2 % of the boys were of normal weight. More than two thirds of the girls and boys watched television for less than 2 hours a day. About one third of the girls and half of the boys regularly engaged in sport. One third of the girls and one quarter of the boys thought that they were "slightly too fat" or "too fat", even though their body mass index (BMI) lay within the normal range. Almost half the boys and girls had attempted to lose weight. 63.8 % of the girls and 30.2 % of the boys of normal weight had attempted to diet in order to lose weight. Half of the girls and a quarter of the boys said that the most important reason they did this was "to improve their appearance". In order to lose weight, the girls often attempted to eat less or to eat nothing late in the evening. The boys preferred physical activity to lose weight.

**Keywords:** weight control behaviour, dieting habits, BMI, body image, adolescents, pupils, Korea

supports the program to prevent overweight, the so-called "Fun & Run Health Camp" [5]. Each regional school authority is responsible for carrying out this program during the summer holidays. Overweight children and adolescents take part in this program, together with their parents and teachers, as well as nutritional scientists and sports doctors. This program generally contains three sections: body development, nutritional knowledge and behaviour and an exercise program.

Because of the rapid development of the entertainment business in Korea, many Korean nutritional scientists consider that adolescents acquire a negative body image from the media [6, 7], as these propagate an unattainable ideal of slimness for girls and an athletic and muscular build for boys. As a consequence of the physical changes during puberty, girls in particular tend to regard their physical appearance critically, as it may not correspond to the current ideal of slimness. Thus the excessive emphasis on slimness in the media has led to dissatisfaction with the body, as well as unhealthy eating habits, attempts at weight control and an increase in eating disorders. The study by CHO et al. [8] on the body image of female pupils in the fifth and sixth classes showed that about 40 % of subjects were very interested in weight control. CHO et al. [8] considered that the reason that the pupils were conscious of their

## Background

According to data from the Korean Ministry for Health and Welfare for 2010 [1], 81.5 % of female pupils (12–18 years old) and 83.1 % of male pupils (12–18 years old) in South Korea were of normal weight; 6.5 % of female pupils and 3.6 % of male pupils were overweight; 12.0 % of female pupils and 13.3 % of male pupils were obese. In the context of health support and prevention for adolescents, various weight reduction programs have been implemented in Korean schools in recent years [2–4]. For example, the Korean Ministry for Health and Welfare

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bodies at this early age was that puberty in Korean adolescents normally takes place in the fifth or sixth classes.

HAN and CHO [9] and KIM and YOON [6] have carried out studies on the body image of 16- to 18-year olds and have found that many Korean adolescents of normal weight consider that they are too fat. The proportion of girls who are dissatisfied with their bodies is clearly greater than for boys. RHO and DORANDT [10] compared the weight control habits of female Korean and German students and concluded that Korean students are generally less satisfied with their appearance than German students. On a scale from 1–5, where 1 = highly dissatisfied and 5 = highly satisfied, the Koreans achieved a score of (2.9 ± 0.7) and the Germans (3.7 ± 0.6).

In order to decrease their body weight, the students frequently attempted a variety of methods that are rather unpromising and which do not aim at achieving a long-term change in eating habits. It was also found that some of these students had already deliberately controlled their weight when they were at school.

### Question to be answered and survey method

The objective of the present investigation was to present selected aspects of the health-relevant lifestyle and weight control behaviour of Korean adolescents in Jeonju, South Korea.

### Data collection

In Jeonju, from April to May 2011, 360 15- or 16-year old male and female pupils (seventh or eighth class) were given a written interview in the form of a standardised question-

Parameters	Female pupils (n = 165) (49.4 %) mean ± standard deviation	Male pupils (n = 169) (50.6 %) mean ± standard deviation	Total (n = 334) (100 %) mean ± standard deviation	Signi- fiance p
height (cm)	159.4 ± 5.4	167.7 ± 7.4	163.6 ± 7.7	0.000
weight (kg)	50.2 ± 8.1	58.1 ± 12.3	54.2 ± 11.1	0.000
BMI (kg/m <sup>2</sup> )	19.7 ± 2.7	20.5 ± 3.8	20.1 ± 3.3	0.024
underweight	9 (5.5)	10 (5.9)	19 (5.7)	0.373
normal weight	141 (85.5)	139 (82.2)	280 (83.8)	
overweight	10 (6.1)	8 (4.7)	18 (5.4)	
obesity	5 (3.0)	12 (7.1)	17 (5.1)	

Tab. 1: Anthropometric data on the adolescents surveyed (15–16 years); BMI = body mass index

naire. This was part of the research project “The relationship to eating behaviour and weight control behaviour of the middle school students in Jeonju”. The survey was performed in six selected schools in Jeonju by trained students from the course in nutritional science at Chonbuk National University.

The survey covered anthropometric data and data on weight control be-

haviour, with the focus on recording sporting activity, satisfaction with the body or figure and methods of weight control.

In order to describe weight control behaviour, the pupils’ weight and height were measured, and used to calculate the body mass index (BMI). Body weight classes were formed in accordance with the age- and gender-specific percentiles for the Korean

Parameters	Female pupils (n = 165) (49.4 %) n (%)	Male pupils (n = 169) (50.6 %) n (%)	Total (n = 334) (100 %) n (%)	Signi- fiance p
<b>television consumption</b>				
< 30 min/day	12 (7.3)	19 (11.2)	31 (9.3)	0.744
30–60 min/day	30 (18.2)	32 (18.9)	62 (18.6)	
1–2 h/day	65 (39.4)	64 (37.9)	129 (38.6)	
2–3 h/day	33 (20.0)	33 (19.5)	66 (19.8)	
≥ 3 h/day	25 (15.2)	21 (12.4)	46 (13.8)	
<b>sporting activity</b>				
every day	26 (15.8)	42 (24.9)	68 (20.4)	0.000
3–4 times/week	27 (16.4)	51 (30.2)	78 (23.4)	
1–2 times/week	41 (24.8)	50 (29.6)	91 (27.2)	
never	71 (43.0)	26 (15.4)	97 (29.0)	
<b>journey to school</b>				
on foot	141 (85.5)	73 (43.2)	214 (64.1)	0.000
bicycle	0 (0.0)	37 (21.9)	37 (11.1)	
bus	13 (7.9)	28 (16.6)	41 (12.3)	
car	11 (6.7)	31 (18.3)	42 (12.6)	

Tab. 2: Results on the health-relevant lifestyle of the adolescents surveyed (15–16 years)

Parameters	Female pupils (n = 165) (49.4 %) n (%)	Male pupils (n = 169) (50.6 %) n (%)	Total (n = 334) (100 %) n (%)	Signifi- cance  p
<b>I think I'm...</b>				
too thin	3 (1.8)	11 (6.5)	14 (4.2)	0.003
slightly too thin	22 (13.3)	45 (26.6)	67 (20.1)	
exactly right	86 (52.1)	63 (37.3)	149 (44.6)	
slightly too fat	46 (27.9)	41 (24.3)	87 (26.0)	
too fat	8 (4.8)	9 (5.3)	17 (5.1)	

Tab. 3: How the adolescents in the survey (15–16 years old) perceived their appearance

reference population [11]. A BMI value under the 5<sup>th</sup> percentile was designated as “underweight”, between the 5<sup>th</sup> and 85<sup>th</sup> percentiles as “normal weight”, above the 85<sup>th</sup> to the 95<sup>th</sup> percentiles as “overweight” and above the 95<sup>th</sup> percentile as “obese”.

### Data processing

The statistical evaluation was performed with the program SPSS 12.0 for Windows. The data were evaluated separately by gender. For com-

parison between groups, the t test was used for numerical values and the  $\chi^2$  test for variables with a nominal scale.  $p < 0.05$  was taken as significant.

### Results

Of the 360 questionnaires, 334 were evaluable – 165 from girls and 169 from boys. The mean age of the surveyed girls and boys was  $15.3 \pm 0.7$  years and  $15.5 \pm 0.5$  years, respec-

### Anthropometric data

◆ Table 1 gives an overview of the anthropometric data of the subjects. The mean height of the girls and boys was 159.4 cm and 167.7 cm, respectively; their mean weight was 50.2 kg and 58.1 kg, respectively. The mean BMI of the girls and boys was  $19.7 \pm 2.7$  and  $20.5 \pm 3.8$ , respectively. 85.5 % of the girls and 82.2 % of the boys were of normal weight. 5.5 % of the girls and 5.9 % of the boys were underweight. About 9 % of the girls and 12 % of the boys were overweight or obese.

### Health-relevant lifestyle

According to KIM [12], health-relevant lifestyles include habits that can influence health, such as engaging in sport, not smoking or drinking no alcohol. Results on lifestyle are presented in ◆ Table 2.

There was no difference between girls and boys with respect to television consumption. It was found that

Parameters	Underweight				Signifi- cance  p	Normal weight			
	Female pupils (n = 9) n (%)	Male pupils (n = 10) n (%)	Total (n = 19) n (%)			Female pupils (n = 141) n (%)	Male pupils (n = 139) n (%)	Total (n = 280) n (%)	Signifi- cance  p
<b>I think I'm...</b>									
too thin	2 (22.2)	3 (30.0)	5 (26.3)	0.460	1 (0.7)	8 (5.8)	9 (3.2)	0.001	
slightly too thin	4 (44.4)	6 (60.0)	10 (52.6)						
exactly right	3 (33.3)	1 (10.0)	4 (21.1)						
slightly too fat	0 (0.0)	0 (0.0)	0 (0.0)						
too fat	0 (0.0)	0 (0.0)	0 (0.0)						
<b>Interest in weight loss</b>									
no	4 (44.4)	1 (10.0)	5 (26.3)	0.119	23 (16.3)	39 (28.1)	62 (22.1)	0.013	
yes	5 (55.6)	9 (90.0)	14 (73.7)						
<b>Experience with attempted diet</b>									
no	5 (55.6)	4 (40.0)	9 (47.4)	0.356	48 (34.0)	79 (56.8)	127 (45.4)	0.000	
yes, weight increase	3 (33.3)	6 (60.0)	9 (47.4)						
yes, weight loss	1 (11.1)	0 (0.0)	1 (5.3)						

Tab. 5: Connection between perception of appearance, weight control behaviour and weight status

64.9 % of the girls and 68.0 % of the boys watched less than 2 h television daily.

The subjects were asked how often they engaged in sport (for at least 30 min). While 15.8 % of the girls and 24.9 % of the boys engaged in sport every day, 43.0 % of the girls and 15.4 % of the boys did not engage in sport ( $p < 0.001$ ).

The boys made their way to school in a more active manner than did the girls ( $p < 0.001$ ). While 85.5 % of the girls walked to school, 43.2 % of the boys walked to school and 21.9 % cycled to school.

#### Satisfaction with figure/weight control behaviour

◆ Table 3 summarises the pupils' perception of their appearance. This shows that there were significant differences between the boys and girls ( $p < 0.01$ ). Although 52.1 % of the girls and 37.3 % of the boys thought that their figure was "ex-

Parameters	Female pupils (n = 165) (49.4 % n (%))	Male pupils (n = 169) (50.6 % n (%))	Total (n = 334) (100 % n (%))	Significance p
<b>Interest in weight loss</b>				
no	27 (16.4)	40 (23.7)	67 (20.1)	0.063
yes	138 (83.6)	129 (76.3)	267 (79.9)	
<b>Experience with attempted diet</b>				
no	53 (32.1)	83 (49.1)	136 (40.7)	0.000
yes, weight increase	6 (3.6)	24 (14.2)	30 (9.0)	
yes, weight loss	106 (64.2)	62 (36.7)	168 (50.3)	
<b>Reasons for attempted diet</b>				
better appearance	58 (51.8)	18 (20.9)	76 (38.4)	0.000
enhancement of self-confidence	22 (19.6)	9 (10.5)	31 (15.7)	
better health	24 (21.4)	42 (48.8)	66 (33.3)	
due to discrimination suffered	3 (2.7)	5 (5.8)	8 (4.0)	
other	5 (4.5)	12 (14.0)	17 (8.6)	
total	112 (100)	86 (100)	198 (100)	

Tab. 4: Weight control behaviour of the adolescents surveyed (15–16 years old)

actly right", 32.7 % of the girls and 29.6 % of the boys thought that they were "slightly too fat" or "too fat".

◆ Table 4 summarises the pupils' weight control behaviour. 83.6 % of the girls and 76.3 % of the boys gave

Parameters	Overweight				Obesity			
	Female pupils (n = 10) n (%)	Male pupils (n = 8) n (%)	Total (n = 18) n (%)	Significance p	Female pupils (n = 5) n (%)	Male pupils (n = 12) n (%)	Total (n = 17) n (%)	Significance p
<b>I think I'm...</b>								
too thin	0 (0.0)	0 (0.0)	0 (0.0)	0.330	0 (0.0)	0 (0.0)	0 (0.0)	0.605
slightly too thin	0 (0.0)	0 (0.0)	0 (0.0)					
exactly right	2 (20.0)	1 (12.5)	3 (16.7)					
slightly too fat	6 (60.0)	7 (87.5)	13 (72.2)					
too fat	2 (20.0)	0 (0.0)	2 (11.1)					
<b>Interest in weight loss</b>								
no	0 (0.0)	0 (0.0)	0 (0.0)	–	0 (0.0)	0 (0.0)	0 (0.0)	–
yes	10 (100.0)	8 (100.0)	18 (100.0)		5 (100.0)	12 (100.0)	17 (100.0)	
<b>Experience with attempted diet</b>								
no	0 (0.0)	0 (0.0)	0 (0.0)	–	0 (0.0)	0 (0.0)	0 (0.0)	–
yes, weight increase	0 (0.0)	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	0 (0.0)	
yes, weight loss	10 (100.0)	8 (100.0)	1 (100.0)		5 (100.0)	12 (100.0)	17 (100.0)	

a positive answer to the question “Are you considering losing weight?” Moreover, 64.2 % of the girls and 36.7 % of the boys gave a positive answer to the question “Have you ever tried to lose weight?” When asked about the reason for the attempted diet, 51.8 % of the girls gave “better appearance” and 48.8 % of the boys “better health” as the most important reason for following a diet.

◆ Table 5 compares the BMI values with the weight control behaviour. Of the pupils of normal weight, 29.0 % of the girls and 22.3 % of the boys felt that they were “slightly too

fat” or “too fat” ( $p < 0.01$ ). Moreover, of the pupils of normal weight, 83.7 % of the girls and 71.9 % of the boys were interested in losing weight ( $p < 0.05$ ). In fact, 63.8 % of the girls and 30.2 % of the boys had experience with diets, even though their BMI values were within the normal range ( $p < 0.001$ ).

◆ Table 6 summarises the methods of weight control used by the surveyed pupils who had already had experience of diets. In order to lose weight, the girls often attempted to eat less or to eat nothing late in the evening. It is clear that there were differences between the boys and girls with respect to weight control behaviour. In

order to lose weight, the girls attempted to eat less or to eat a lot of vegetables. About 53 % of the girls had fasted in order to lose weight, but only 45 % of the boys. The boys favoured physical activity to lose weight. Even though this was not significant, the boys seemed to engage in more physical sporting activity than the girls (64 % versus 54.5 %).

## Discussion and conclusions

The aim of this study was to record the weight control behaviour, the health-relevant lifestyle, the body image and the dieting habits of Korean pupils in Jeonju, South Korea. Numerous studies [13, 14] assume that the use of electronic media is of decisive importance for the activity of adolescents in their free time. According to HBSC-Study 2009/10 (Health Behaviour in School-aged Children), international health recommendations state that children and adolescents should not spend more than two hours per day watching television or at the computer, as the time spent sitting is considered to be one cause of the increase in overweight [15]. Korean pupils were therefore asked how much of their free time they spent in front of the television or computer screen. There was no difference between the boys and girls with respect to consumption of television: 64.9 % of the girls and 68.0 % of the boys watched less than 2 hours television daily. The proportion of Korean pupils who watch more than 2 hours television daily is lower than that recorded in the HBSC Study 2009/10 – which found that, in Germany, 64.1 % of girls and 67.4 % of boys aged 15 watched more than 2 hours television daily [16].

Several studies confirm that sporting activity is one of the most important measures to lose weight [2,

I try...	Female pupils (n = 112) n (%)	Male pupils (n = 86) n (%)	Total (n = 198) n (%)	Signi- ficance p
<b>to eat less.</b>				
very often	7 (6.3)	6 (7.0)	13 (6.6)	0.003
often	56 (50.0)	27 (31.4)	83 (41.9)	
sometimes	37 (33.3)	27 (31.4)	64 (32.3)	
never	12 (10.7)	26 (30.2)	38 (19.2)	
<b>to eat a lot of vegetables.</b>				
very often	9 (8.0)	5 (5.8)	14 (7.1)	0.171
often	39 (34.8)	26 (30.2)	65 (32.8)	
sometimes	54 (48.2)	38 (44.2)	92 (46.5)	
never	10 (8.9)	17 (19.8)	27 (13.6)	
<b>to engage in sport every day.</b>				
very often	14 (12.5)	19 (22.1)	33 (16.7)	0.281
often	47 (42.0)	36 (41.9)	83 (41.9)	
sometimes	38 (33.9)	24 (27.9)	62 (31.3)	
never	13 (11.6)	7 (8.1)	20 (10.1)	
<b>to eat nothing all day.</b>				
very often	1 (0.9)	2 (2.3)	3 (1.5)	0.530
often	13 (11.6)	10 (11.6)	23 (11.6)	
sometimes	45 (40.2)	27 (31.4)	72 (36.4)	
never	53 (47.3)	47 (54.7)	100 (50.5)	
<b>not to eat late in the evening.</b>				
very often	15 (13.4)	7 (8.1)	22 (11.1)	0.025
often	61 (54.5)	33 (38.4)	94 (47.5)	
sometimes	25 (22.3)	30 (34.9)	55 (27.8)	
never	11 (9.8)	16 (18.6)	27 (13.6)	
<b>not to eat biscuits, chocolate or sweets.</b>				
very often	6 (5.4)	8 (9.3)	14 (7.1)	0.459
often	39 (34.8)	31 (36.0)	70 (35.4)	
sometimes	52 (46.4)	32 (37.2)	84 (42.4)	
never	15 (13.4)	15 (17.4)	30 (15.2)	

Tab. 6: Methods of weight control used by surveyed adolescents (15–16 years of age)

17, 18]. Therefore, the study participants were asked how often they engaged in sport. The results showed that the boys engaged in more sport than the girls. In addition, the pupils were asked how they came to school. It was found that the boys were more active than the girls in this respect. As regard sporting and everyday activities, METZ et al. assumed that sporting activity must be integrated into everyday patterns of movement. For example, walking is better than using public transport, and climbing the stairs better than taking the lift [19]. In fact, the successful participants in a weight reduction program more often cycled than went by car, tended to walk rather than to take public transport and engaged in more sport than the unsuccessful participants in this program [19].

The results show that the girls in our study had a more negative body image than the boys did. More than two thirds of the girls tried to lose weight by various methods that are rather unpromising. Nevertheless, the proportion of boys who considered losing weight should not be ignored, as the boys' wish to lose weight was not less than that of the girls and about 40 % of the boys had already had experience with diets. About a third of the girls and boys of normal weight felt that they were "slightly too fat" or "too fat", even if their BMI was within the normal range. This discrepancy between body image and the actual BMI has also been observed in other studies. KIM and MIN [20] showed that about 30 % of female pupils and 19 % of male pupils of normal weight had already had experience of diets. They found that the pupils were influenced by comments made about their appearance and were unable to assess these properly, as they knew little about healthy body measurements. This often made them dissatisfied with their own figure.

There were gender-specific differences in the methods the pupils with experience of dieting used to control weight. In order to lose weight, female pupils more often attempted to eat less or to fast. In contrast, the male pupils favoured physical activity to lose weight. It can be assumed that the pupils in our study did not ask for help from nutritional scientists or sports doctors, as they mostly tried out rather unpromising methods. According to RHO and DORANDT [10], most people who have lost weight regain this weight in the short or long term after stopping the diet. This "yo-yo effect" may lead to increased psychological stress, unhealthy nutritional habits and eating disorders [21]. For this reason, nutritional education and training on weight control must be regularly repeated, so that pupils are precisely informed about their physical changes during puberty, as well as the functions of nutrients and other issues. It is also desirable that parents, teachers and diet assistants in schools should continuously be informed of changes in the nutritional and weight control behaviour of overweight and obese pupils, as well as the underweight and those of normal weight, as their reactions can influence the pupils' perception of their body satisfaction and thus help to support a healthy lifestyle.

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#### Conflict of Interest

The authors declare no conflict of interest according to the guidelines of the International Committee of Medical Journal Editors.

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## References

1. Korean Ministry of Health & Welfare (2012) Korean national health & nutrition examination survey in 2010. URL: [Zugriff 25.06.12](#)
2. Hur S (2012) Effects of behavior modification for complex exercise and nutrition education providing feedback on metabolic syndrome related factors, adipocytokine and dietary intakes in obese high school girls. *Korean J Physical Education* 51: 441–451
3. Jo MA, Lee KH, Her ES, Kim JA (2009) A survey on dietary habits in Gyeongnam and the development of the nutrition education curriculum with teacher's guide for obese elementary school children. *J Korean Diet Assoc* 15: 97–112
4. Cho YG, Song HR, Kim KA et al. (2009) Effect of school-based intervention for overweight children "Fitness Class" performed on elementary schools located in Seoul. *Korean Study Obesity* 18: 146–157
5. Korean Ministry of Health & Welfare (2011) Fun & Run Health Camp. URL: <http://knhanes.cdc.go.kr> Zugriff 26.06.12
6. Kim YK, Yoon KS (2009) Awareness of body shape, weight control, and eating disorders in female adolescents living in Seoul. *J Korean Diet Assoc* 15: 232–252
7. Kang MH, Choue RY (2010) Relationships of body image, body stress and eating attitude, and dietary quality in middle school girls based on their BMI. *Korean J Nutr* 43: 285–293
8. Cho JH, Han SN, Kim JH, Lee HM (2012) Body image distortion in fifth and sixth grade students may lead to stress, depression, and undesirable dieting behavior. *Nutr Res Pract* 6: 175–181
9. Han GS, Cho WK (2011) Study of dietary behaviors and snack intake patterns of high school students in Seoul, Incheon, and Gyeonggi-do. *Korean J Food Culture* 26: 490–500
10. Rho JO, Dorandt S (2006) Gewichtskontrollverhalten koreanischer und deutscher Studentinnen – Eine vergleichende Untersuchung. *Ernährungs Umschau* 53: 435–439
11. Korean Center for Disease Control & Prevention (2007) Korean national growth chart. URL: [www.cdc.go.kr/search/sEngine.jsp](http://www.cdc.go.kr/search/sEngine.jsp) Zugriff 30.06.12

12. Kim BR (2006) *A study on nutrition knowledge, dietary habits, health-related life style and health condition of college students in Chuncheon.* *J Korean Soc Food Sci Nutr* 35: 1215–1223
13. Yoo CH, Han SH, Park YJ et al. (2006) *Correlation between time using the computer and adolescent obesity.* *Korean J Health Promot Dis Prev* 6: 207–212
14. Han YS, Joo NM (2005) *An analysis on the factors of adolescence obesity.* *Korean J Food Culture* 20: 172–185
15. HBSC-Team Deutschland (2011) *Faktenblatt zur Studie. Health Behavior in School-aged Children 2009/10. Nutzung von Computer und Spielkonsole durch Kinder und Jugendliche.* URL: <http://hbsc-germany.de> Zugriff 25.06.12
16. HBSC-Team Deutschland (2011) *Faktenblatt zur Studie. Health Behavior in School-aged Children 2009/10. Fernsehkonsum an Schultagen von Kindern und Jugendlichen.* URL: <http://hbsc-germany.de> Zugriff 25.06.12
17. Bös K, Krell J, Kutzner C (2011) *Mehr sportliche Aktivität für unsere Kinder.* *Ernährungs Umschau* 58: 432–434
18. o. A. *Deutschland in Bewegung? (Ernährungs Umschau 51(8), Meldung vom 16.08.2004)* URL: Zugriff 25.08.12
19. Metz K, Kröger C, Shaw R, Pelda U (2012) *Erfolgreiche und erfolglose Teilnehmer/-innen eines Gewichtsreduktionsprogramms: Wie unterscheiden sie sich?* *Ernährungs Umschau* 59: 712–719
20. Kim JE, Min HS (2008) *Weight-related perceptions, practices and eating behaviors of middle school students: Associations with BMI.* *Korean J Community Nutr* 13: 13–23
21. Doo MA, Kim YH (2008) *Study on the status in body weight loss practice according to age and gender of subjects with experiences of attempting to lose weight in Seoul.* *J Korean Soc Food Sci Nutr* 37: 571–577

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