

Students' nutrition orientations: differences according to gender and subject of study

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Summary

The paper reports results from a survey on attitudes, preferences and aversions in the field of nutrition and related activities of 1 593 male and female students from seven departments at the University of Bonn in Germany in December 2011. Five basic nutrition orientations were identified: orientation towards health, food preparation, and pleasure, the perception of eating as a minor matter and the association of eating with both positive and negative emotions. The intensity of these orientations, as well as preferences for certain foodstuffs were related to the subject of study and gender. While the association of food with emotions was higher among female students, they also liked preparing their own meals and valued healthy eating higher than male students. Students of the natural sciences considered food quality and pleasure as rather unimportant, whereas students of the humanities, social and nutrition sciences perceived eating as an enjoyable common activity and attached higher value to a healthy diet. Subject areas as a determinant of nutrition orientations constitute an important factor in studies among university students.

Keywords: nutrition orientations, nutritional behavior, gender; subject area, analysis of variance, principal component analysis

and related activities. Basic nutrition orientations were empirically identified in a sample of university students (N = 1 593) from seven different departments. Like food preferences, nutrition orientations manifested themselves differently according to subject of study and gender.

Problem

With respect to socio-demographic and socio-economic characteristics such as age, education, family status, and income that are related to nutrition behavior [1, 2], university students are a comparatively homogeneous group. However, there are considerable differences in terms of nutrition in the student population that are, among other things, determined by structural factors such as living conditions [3–5] and time budget [5]. Moreover, many studies demonstrated that attitudes and orientations are related to nutrition behavior in the general population [6, 7] and in American college students [8].

In this paper, it is hypothesized that students of different subject areas differ systematically in their orientations towards nutrition. This assumption is derived from sociological research on distinct cultures in different academic subject areas. These cultures do not only manifest themselves in specific curricula, ways of teaching, research paradigms, and methods, but also in systematic differences in politi-

Introduction

Subject area is rarely considered a differentiating factor in research on university students' nutrition attitudes and behavior. However, sociological studies point out that there are different "subject cultures" in universities, manifesting themselves among other things in different food preferences. This paper investigates whether students in different subject areas also differ in their nutrition orientations, i.e. clusters of attitudes, preferences and aversions in the field of nutrition

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cal and social attitudes, leisure activities and preferences regarding interior design, clothing and food between students of different subject areas [9, 10]. The persistence of these patterns is explained both by self-selection mechanisms and subject-specific socialization processes. On the one hand, particular personal predispositions are involved in the choice of a subject area. On the other hand, one gradually internalizes the approaches and values of a respective subject area via study courses and the contact with like-minded fellow students and teachers [9]. With regard to food preferences, it has been demonstrated that students of engineering and economics preferred meat-based dishes and hearty, traditional German food, whereas fruits, vegetables and vegetarian dishes were favored in the educational sciences [9, 10].

ENGLER [9] stresses that next to subject culture, gender socialization plays an important role in body-related fields such as dietary habits and nutrition. In turn, gender differences take on different shapes according to subject area. A study by KELLER et al. [4] provides evidence that subject area is a relevant factor in nutrition science and health prevention. They found that multiple health risk behaviors, inter alia low fruit and vegetable consumption, were not as prevalent in German medical students compared to students of law and educational sciences. Moreover, KORINTH et al. [11] demonstrated that nutrition students showed high-

er dietary restraint than a control group from other subjects. In total, however, studies that differentiate according to subject area are still exceptions in research on students' nutrition attitudes and behavior.

This paper aims to contribute to closing this gap. It is investigated whether students of different subject areas do not only differ in their food preferences, but also in basic nutrition orientations. Nutrition orientations are understood as latent motivational dimensions in the field of nutrition and related activities, such as food shopping, meal preparation and situations of food consumption. This concept is based on research by STIESS and HAYN [6] and GRÜNERT et al. [7] who demonstrated that latent orientations of this sort considerably influence daily nutritional behavior. First, the present study identifies students' relevant background motivations in the field of nutrition on an empirical basis by aggregating single attitudes, preferences and habits to form latent orientation dimensions with principal component analysis. After that, analysis of variance is conducted to test whether orientations differ between students in different subject areas. Due to dissimilar gender distribution in the examined subject areas in combination with the fact that gender is an important determinant of nutrition attitudes and food preferences [6, 9, 12], the effect of gender is simultaneously specified and separated from subject-specific differences.

Sample and method

The study is based on a sample of 1 593 students from seven different subject areas at the University of Bonn: law, mathematics, German philology, social sciences, medicine, agricultural sciences and nutrition and food sciences. Participants voluntarily and anonymously completed a standardized written questionnaire during university lectures in the presence of a trained interviewer in December 2011. The participation rate in each course was close to 100 %. Due to the choice of subject areas, female students were slightly overrepresented in the sample with 63 % (♦ Table 1) as compared to the overall university population with 54 % female students. Respondents were aged between 15 (school pupils attending university) and 48 years-of-age; approximately 90 % of the sample were in an age range of 18 to 24 years (♦ Table 1).

In order to extend earlier studies' findings on different food preferences [9, 10], we included a battery of twelve food categories in the questionnaire (♦ Table 2) of which respondents could choose up to three options. This approach follows the tradition of measuring judgments of taste in the works of the sociologist Pierre BOURDIEU (e.g. [13]). Nutrition orientations were computed on the basis of 18 items dealing with attitudes and habits in the fields of food quality, food shopping, preparation of meals, food consumption situations and various emotions associ-

	Social sciences	German philology	Mathematics	Medicine	Law	Agricultural sciences	Nutrition and food sciences	total
male	55.0	18.4	66.3	33.2	41.9	33.3	15.7	36.7
female	45.0	81.6	33.7	66.8	58.1	66.7	84.3	63.3
age (sd)	21.7 (2.5)	21.1 (2.1)	20.0 (2.7)	21.4 (3.1)	20.6 (2.0)	21.6 (2.3)	22.9 (4.6)	21.2 (2.8)
number (n)	120	304	184	268	401	189	127	1 593

Tab. 1: Gender distribution (in %), mean age and number of respondents in each subject area
sd = standard deviation

ated with eating and nutrition. The items were measured on six-point Likert-scales (from “does not apply at all” to “applies perfectly to me”). The compilation and wording of the items was inspired by the works on nutrition attitudes, orientations and food-related lifestyle by STIESS and HAYN [6], LUETH [14] and GRUNERT et al. [7]; items were chosen in order to match students’ daily living conditions.¹

As the structure of students’ nutrition orientations has largely been unexplored to date, we chose principal component analysis as an explorative method for the identification of latent dimensions within the 18 nutrition-related items. Principal component analysis is a multivariate statistical method that reduces a large number of variables to a smaller number of linear combinations (principal components). The meaning and number of principal components are not determined beforehand; instead, the goal is to reproduce the existing data structure in a simpler way while minimizing loss of information. Criteria for the decision about how many components should be retained were Kaiser’s criterion (eigenvalue > 1) and the content-related condition that each component was determined by more than one variable and interpretable in a meaningful way. To improve interpretability, the solution was rotated orthogonally with varimax rotation. The questionnaire’s comprehensibility and power of discrimination were ensured by conducting a pretest in a sample of 50 students.

Results

Food preferences

Altogether, the students’ favorite dish was pasta: 68.5 % of all respondents chose this option. Analyzing food preferences by gender with chi-square tests revealed significant differences (♦ Table 2): Men’s affinity

to meat, fast food and traditional German cuisine was above average, whereas women chose fresh vegetables, vegetarian/vegan dishes, sweet dishes and salad more often. Thus, the “male taste” can be characterized as rather hearty, whereas female preferences can be subsumed under the label “light”. The absolute value of the phi-coefficient as a measure of association between gender and each food choice is highest with meat ($\phi = -0.44$), followed by salad ($\phi = 0.24$) and fresh vegetables ($\phi = 0.22$).

Patterns of food preferences also differed according to subject area. Students of German philology, social sciences and nutrition and food sciences chose traditional German cuisine and meat significantly less often, but preferred vegetarian/vegan dishes and Japanese cuisine above average. In contrast, students of law and agricultural sciences often indicated meat and

¹ For example, items referring to the provision of meals for family members (especially children) were not selected.

Statistics glossary

Phi coefficient (ϕ) = Measure of the strength of association between two dichotomous variables. Values are between -1 and 1; the higher the absolute value of ϕ , the stronger the association.

Kaiser’s criterion = Mathematical method for the rotation of a coordinate system in an n-dimensional space. Varimax rotation maximizes the variance of squared loadings per component; this allows for a more precise assignment of variables to their respective component, thus simplifying interpretation.

Varimax rotation = Mathematical method for the rotation of a coordinate system in an n-dimensional space. Varimax rotation maximizes the variance of squared loadings per component; this allows for a more precise assignment of variables to their respective component, thus simplifying interpretation.

Explained variance = Measure of the amount to which a mathematical model explains the dispersion (variance) of empirical data; values are between 0 % and 100 %.

Marginal means = Means of component scores (individual scores of respondents on each component) in groups. The more a group’s marginal mean deviates from 0, the more this group differs from the overall mean.

F = Test statistic with a known probability distribution (F-distribution). In analysis of variance, the F-test estimates whether group differences are significant.

Eta-square (η^2) = Measure of effect size in analysis of variance. A η^2 of 0.01 is denoted a small effect, 0.06 a middle effect and 0.14 a strong effect. Multiplying partial eta-square (η^2_{part}) with 100 is interpreted as a measure of explained variance in two-way analysis of variance.

traditional German cuisine as their preferred dishes, but scored below average regarding fresh vegetables, vegetarian/vegan and exotic dishes and Japanese cuisine. This reveals opposing patterns that can be labeled “vegetarian/cosmopolitan” on the one hand and “meat-based/traditional” on the other. Students of medicine showed above-average preferences of fresh vegetables and Japanese cuisine, which indicates correspondence between reported food preferences and recommendations for a healthy diet.

Nutrition orientations

Using principal component analysis, we identified five basic nutrition orientations which account for a total of 53.7 % of variance in the data (♦ Table 3).

The first component is determined by the appreciation of a diet rich in vitamins and simultaneous aversion against additives, readymade and frozen foods as well as foodstuffs that are considered unhealthy. Additionally, an adequate diet is regarded as a means to improve physical fitness, and body weight concerns are a decisive factor in food choice. This component can be described as “health orientation”.

The second component summarizes aspects of shopping food and meal preparation. Interest in cooking and trying out new recipes is positively associated with enjoyment of food shopping, but negatively with frequent consumption of readymade and frozen meals as well as lack of time to prepare one’s meals by oneself. This dimension is labeled “food preparation orientation”.

The third component combines enjoyment of (common) meals with positive associations with food (relaxation, reward, having a good time). These aspects are subsumed under “pleasure orientation”.

In contrast, the items loading high on the fourth component express a

	male	female	p	φ
meat	73.0	27.7	< 0.001	– 0.44
pasta/noodles	62.7	72.2	< 0.001	0.09
fast food	19.1	7.7	< 0.001	– 0.17
sweet dishes	21.5	32.9	< 0.001	0.12
soup	5.7	10.1	< 0.01	0.08
fish	15.8	15.5	0.88	– 0.00
traditional German cuisine	28.0	14.4	< 0.001	– 0.17
fresh vegetables	14.6	35.0	< 0.001	0.22
vegetarian/vegan dishes	8.6	16.8	< 0.001	0.11
exotic dishes	10.5	8.8	0.28	– 0.03
Japanese cuisine	10.7	9.2	0.38	– 0.02
salad	19.8	43.7	< 0.001	0.24

Tab. 2: Food preferences by gender (in %); significance (p) and effect size (φ)

casual attitude towards food: eating is perceived a minor matter that is dealt with in between more important activities. Both lack of time and boredom play a role here. This component is named “food as side issue orientation”.

Finally, the fifth component demonstrates an ambivalent attitude towards nutrition: on the one hand, eating is perceived as a means to fight sadness and boredom, while on the other hand controlling one’s body weight is considered important. As the satisfaction of emotional needs with food, as well as the struggle against possible consequences of such behavior are combined in this dimension, it is labeled “ambivalence orientation”.

Differences in nutrition orientations according to gender and subject of study

In the final step of the analysis, respondents’ standardized component scores were used to compute the influence of subject culture and gender

on nutrition orientations in a two-way analysis of variance (ANOVA). ♦ Table 4 shows the estimated marginal means of the groups² for the five orientation components. An interaction effect between gender and subject of study was tested, but was not significant on the level of $p \leq 0.05$ for any of the nutrition orientations. The results are interpreted with respect to the characterization of the principal components: positive values point to agreement with the respective orientation component, whereas negative values indicate rejection.

Positive values on the first component express preferences for healthy and vitamin-packed food and distaste for additives and ready-made

² We use unweighted means of the groups for the five orientation components in order to control for the unequal distribution of gender in subject area means and vice versa. In this manner, individual effects of both variables are represented more clearly than by the use of common weighted means.

Orientation component					
	health (1)	food preparation (2)	pleasure (3)	food as side issue (4)	ambivalence (5)
My diet is rich in vitamins.	0.693				
I eat what I like, no matter whether it is healthy or not.	- 0.693				
I try to avoid food products with additives.	0.662				
I can improve my physical fitness through the right diet.	0.626				
I often eat readymade or frozen foods.	- 0.451	- 0.408			
In my diet, it is important to me to avoid weight gain.	0.399				0.488
I just love cooking.		0.834			
I like to try out new recipes.		0.791			
Shopping for food is fun for me.		0.574			
Usually I don't have time for cooking.		- 0.439		0.409	
I really relax when I enjoy a good meal.			0.732		
I like to go out in a restaurant.			0.634		
An evening with friends is not perfect without good food.			0.577		
Sometimes I reward myself with a great meal.			0.557		
I often eat casually, for example while walking.				0.765	
I nibble a lot between meal times, so I often do not feel like having a "proper meal" anymore.				0.707	
I often eat because I feel bored.				0.487	0.521
When I am sad, I comfort myself with food.					0.770
eigenvalue	2.3	2.3	1.9	1.7	1.5
% explained variance	12.6	12.6	10.6	9.6	8.2

Tab. 3: Rotated component matrix of nutrition orientations
Only values > ± 0.300 are depicted

meals. Here, subject areas ($F[6,1513] = 12.3$; $p < 0.001$; $\eta^2_{\text{part}} = 0.046$) turned out to be somewhat more important than gender ($F[1,1513] = 34.5$; $p < 0.001$; $\eta^2_{\text{part}} = 0.022$). The estimated marginal means indicated that orientation towards health was above average in students of medicine, social sciences and especially nutrition and food sciences, whereas it was below average in students of German philology, mathematics and law. The mean differences between those two groups³ were significant on the level of $p \leq 0.05$. Moreover, female students were significantly more health-oriented than their male counterparts ($p < 0.001$).

Concerning the orientation towards food preparation (component 2), effect sizes of subject area ($F[6,1513] = 6.0$; $p < 0.001$; $\eta^2_{\text{part}} = 0.023$) and gender ($F[1,1513] = 28.6$; $p < 0.001$; $\eta^2_{\text{part}} = 0.019$) were approximately equal. Female students enjoyed preparing their own food more than males. Looking at subject areas, students of nutrition and food sciences stood out by a high positive value which made them significantly different from students of mathematics, medicine and law. Students of the latter subjects showed considerably less enjoyment in food preparation and shopping.

With regard to pleasure orientation (component 3), subject of study had a small effect ($F[6,1513] = 2.9$; $p < 0.01$; $\eta^2_{\text{part}} = 0.011$), the effect size of gender was negligible ($F[1,1513] = 4.1$; $p < 0.05$; $\eta^2_{\text{part}} = 0.003$). Among students of social sciences and nutrition and food sciences, there was a tendency towards higher pleasure orientation, whereas students of mathematics and agricultural sciences seemed to attach less importance to eating as a common activity. After correction for multiple comparisons, however, the differences failed to reach the significance level of $p \leq 0.05$.

On the component labeled "food as side issue" (component 4), gender had no significant effect ($F[1,1513]$

	Orientation component				
	health (1)	food preparation (2)	pleasure (3)	food as side issue (4)	ambivalence (5)
Social sciences	0.21 (0.09)	0.05 (0.09)	0.11 (0.09)	-0.10 (0.09)	-0.03 (0.09)
Mathematics	-0.20 (0.08)	-0.10 (0.08)	-0.20 (0.08)	0.15 (0.08)	-0.34 (0.08)
German philology	-0.16 (0.07)	0.04 (0.07)	-0.03 (0.07)	0.00 (0.08)	0.06 (0.07)
Medicine	0.13 (0.07)	-0.07 (0.07)	0.02 (0.07)	-0.18 (0.07)	-0.12 (0.06)
Law	-0.22 (0.05)	-0.18 (0.05)	-0.03 (0.05)	0.01 (0.05)	-0.05 (0.05)
Agricultural sciences	-0.04 (0.08)	-0.03 (0.08)	-0.13 (0.08)	0.04 (0.08)	-0.11 (0.07)
Nutrition and food sciences	0.44 (0.12)	0.37 (0.12)	0.20 (0.12)	0.04 (0.12)	0.02 (0.12)
male	-0.15 (0.05)	-0.14 (0.05)	-0.05 (0.05)	-0.04 (0.05)	-0.38 (0.05)
female	0.19 (0.04)	0.17 (0.04)	0.04 (0.04)	0.02 (0.04)	0.22 (0.04)
Model fit (corr. R ²)	0.07	0.05	0.01	0.01	0.11

Tab. 4: Estimated marginal means of orientation components by subject area and gender (standard error)

= 0.8; $p = 0.36$) on the distribution of values. Pairwise comparisons of subject areas revealed a significant difference between students of mathematics versus medicine: the former were highly inclined to casual eating and snacking between meals, whereas the latter were below average on this orientation. In total, however, the influence of subject area on component 4 narrowly missed the conventional significance level of $p \leq 0.05$.

The effect of gender on ambivalence orientation (component 5) was medium to high ($F[1,1513] = 130.8$; $p < 0.001$; $\eta^2_{\text{part}} = 0.080$), whereas subject areas had only weak power of differentiation ($F[6,1513] = 3.1$; $p < 0.01$; $\eta^2_{\text{part}} = 0.012$). The corrected R² of the model was 0.11 – this was the highest amount of explained variance (11 %) among all components. Hence, eating as a means against boredom or sadness combined with fear of gaining

weight was considerably more important to female students than to males. After controlling for gender distribution, differences between mathematics versus humanities and law were still significant. Whereas male and female students of mathematics both exhibited very low levels of ambivalence, students of German philology and law had a decisively more ambivalent orientation towards nutrition. Students of nutrition and food sciences were located in the positive sector, too, but not significantly different from students of other subjects (high standard error).

³ Pairwise comparisons were computed using the Bonferroni correction for multiple comparisons. This correction reduces the risk of conducting alpha errors (false-positive results) in multiple comparisons by adjusting the level of significance.

Discussion

The analysis demonstrates that various food preferences and latent nutrition-related orientations can be identified in a population of university students. These preferences and orientations are associated with both gender and subject area. As expected [9, 12], food preferences varied depending on gender. Moreover, female students' orientation towards health, pleasure and food preparation was higher than in men, which suggests the internalization of gender stereotypes regarding physical appearance (social norm of slimness) and allocation of roles [12]. It is remarkable that gender differences were most pronounced in an emotionally ambivalent orientation towards nutrition.

Irrespective of the effect of gender, culture of subject area was established as a differentiating factor, which allows for a more refined examination of university students' latent nutrition motivations compared to earlier studies [3, 8, 15–17]. Students of law and mathematics showed little interest in health-related nutrition aspects and food preparation, and preferred hearty, meat-based dishes. The latter finding suggests that these groups have taste patterns that are similar to those of students of engineering and economics in ENGLER [9] and SCHÖLLING [10]. On the contrary, students of nutrition and food sciences highly valued health as well as pleasure and own food preparation. They preferred fresh, vegetarian dishes. This finding matches the results of KORINTH et al. [11] who observed that students of nutrition and food sciences exhibited a higher level of dietary restraint and (in upper semesters) a healthier nutrition behavior than students from other subject areas. We assume that the manifestation of orientations indicating high interest in different aspects of nutrition already played a role in the process of choice of subject area

in this case. The acquisition of nutrition-related knowledge and the contact with like-minded fellow students during studies are likely to further increase orientations towards health and food preparation. For instance, KOLODINSKY et al. [15] showed that higher nutrition knowledge is associated with a healthier diet in American college students, and LOUIS et al. [16] demonstrated the influence of perceived peer norms on the intention to eat healthy in a sample of students at an Australian university. While in their study on multiple health risk factors KELLER et al. [4] suggested that medical students are more health-oriented than students of law or education sciences, food preferences and nutrition orientations of students of medicine, humanities and social sciences were relatively similar in our study. All three subject areas were dominated by preferences of vegetarian dishes and also of Japanese cuisine; values on health, pleasure and food preparation components were higher than in students of law and natural sciences, but lower than in students of nutrition and food sciences.

Limitations

Though the present study is limited in the respect that the sample was recruited at a single university, results are generalizable in the sense that students are a heterogeneous group with regard to nutrition orientations and food preferences. Therefore, we suggest testing and, if necessary, controlling for subject-specific differences in samples representing students of various subject areas in order to avoid erroneous or biased statistical conclusions. The question of how subject-specific food preferences and nutrition orientations influence actual food consumption and body weight remain open in this paper.

Conclusion

In Germany, university students are commonly deemed a stratum of the population with high health potential [18]. However, it is questionable whether this finding universally applies to all subject areas. Even surveys that did not differentiate between subject areas regularly attested that consumption of fruits and vegetables fell below the amount recommended by the German Nutrition Society (DGE) [4, 17, 19]. In the light of our results, we hypothesize that this problem is more serious among students of natural sciences and law than in other subject areas. More research is warranted concerning differences in dietary behavior, whereby structural factors such as time budget and living conditions, which also influence dietary behavior [3–5] and differ between subject areas [5], should be controlled.

In practice, the results of this study point out that campaigns and programs to promote a healthy diet at universities should be customized to the respective subject areas, for instance by stressing practicability and economy of time in the natural sciences and law, but focusing on creativity and enjoyment in the social sciences, arts and humanities. University canteens play an important part in this respect, too, especially as they are frequented above average by students of the natural sciences.

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Conflict of Interest

The author declares no conflict of interest according to the guidelines of the International Committee of Medical Journal Editors.

References

1. Max Rubner-Institut (Hg). Nationale Verzehrsstudie II. Ergebnisbericht Teil 1. Max Rubner-Institut, Bundesforschungsinstitut für Ernährung und Lebensmittel, Karlsruhe (2008)
2. Weyers S, Fekete C, Dragano N et al. (2013) Bildung, ausgewählte Ernährungseinstellungen und Ernährungsverhalten. *Präv Gesundheitsf* 8: 289–294
3. Papadaki A, Hondros G, Scott J et al. (2007) Eating habits of university students living at, or away from home in Greece. *Appetite* 49: 169–176
4. Keller S, Maddock JE, Hannover W et al. (2008) Multiple health risk behaviors in German first year university students. *Preventive medicine* 46: 189–195
5. Deutsches Studentenwerk. Die wirtschaftliche und soziale Lage der Studierenden in Deutschland. 20. Sozialerhebung des Deutschen Studentenwerks (2013)
6. Stieß I, Hayn D (2005) Ernährungsstile im Alltag: Ergebnisse einer repräsentativen Untersuchung, ISOE-Diskussionspapier Nr. 5, Frankfurt/Main
7. Grunert K, Brunso K, Bredahl L et al. Food-related lifestyle: a segmentation approach to European food consumers. In: Frewer LJ, Risvik E, Schifferstein H (Hg). *Food, people and society. A European perspective of consumers' food choices.* Springer, Berlin, Heidelberg (2011), S. 211–230
8. Marquis M (2005) Exploring convenience orientation as a food motivation for college students living in residence halls. *Int J Cons Stud* 29: 55–63
9. Engler S. *Fachkultur, Geschlecht und soziale Reproduktion. Eine Untersuchung über Studentinnen und Studenten der Erziehungswissenschaft, Rechtswissenschaft, Elektrotechnik und des Maschinenbaus.* Deutscher Studien Verlag, Weinheim (1993)
10. Schölling M. *Soziale Herkunft, Lebensstil und Studienfachwahl: eine Typologie.* Lang, Frankfurt am Main (2005)
11. Korinth A, Schiess S, Westenhöfer J (2010) Eating behaviour and eating disorders in students of nutrition sciences. *Public Health Nutr* 13: 32–37
12. Prahl HW, Setzwein M. *Soziologie der Ernährung.* Springer, Wiesbaden (1999)
13. Bourdieu P. *Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft.* Suhrkamp, Berlin (1987)
14. Lüth M. *Zielgruppensegmente und Positionierungsstrategien für das Marketing von Premium-Lebensmitteln.* Dissertation, Göttingen (2005)
15. Kolodinsky J, Harvey-Berino JR, Berlin L et al. (2007) Knowledge of current dietary guidelines and food choice by college students: Better eaters have higher knowledge of dietary guidance. *J Am Diet Assoc* 107: 1409–1413
16. Louis W, Davies S, Smith J et al. (2007) Pizza and pop and the student identity: the role of referent group norms in healthy and unhealthy eating. *JSP* 147: 57–74
17. Schweter A, Heimgärtner C, Jäger J et al. (2011) Ernährungsverhalten und körperliche Aktivität von Schwäbisch Gmünder Studentinnen. *Praev Gesundheitsf* 6: 270–276
18. Gusy B (2010) Gesundheitsberichterstattung bei Studierenden. *Praev Gesundheitsf* 5: 250–256
19. Lohmann K, Gusy B (2010) Das Ernährungsverhalten Studierender – Auswertung der Ergebnisse einer theoriegeleiteten und interventionsorientierten Gesundheitsberichterstattung bei Studierenden. *Gesundheitswesen* 72(08/09). DOI: 10.1055/s-0030-1266678

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