

RELATIONS BETWEEN EMOTIONS AND FOOD PREFERENCES

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Emotions have been observed to distinctly influence food choice in conditions when a vast number of women (82%) have not suffered from hunger before eating. This means that food intake is influenced by emotional hunger rather than the physiological one. The mostly preferred food at negative moods, like anger, sorrow, fear or stress, have been sweets. Boredom has favored eating of an increased amount of food, without any special preferences. Stress has influenced food intake in a different way: some subjects have declared eating lower, while some – greater amounts of food. The winter season has increased food intake among 74% of young women.

INTRODUCTION

The relation between food choice and emotional status is complex. Some foods are chosen in order to improve emotional states – restore vigor, decrease depression. On the other hand, food preferences depend substantially on current mood [Fieldhouse, 1995; Narojek, 1993; Jeżewska-Zychowicz, 1996].

Comfort foods are foods whose consumption evokes a psychologically comfortable and pleasurable state for a person [Wansink *et al.*, 2003]. The choice of a comfort food is determined by physiological and psychological dimensions of food, and their combinations, which attract people to take it [Bradley *et al.*, 1975; Arnou *et al.*, 1995; Birch *et al.*, 1989; Galef, 1991; Tuomisto *et al.*, 1998]. Physiological motivations behind food preferences can involve perceived needs for correct energy and nutrient imbalances, and psychological motivations can influence the pleasure one derives from some foods [Stewart *et al.*, 1984; Wise, 1988]. Physiological needs may be caused by the presence in foods of some opiates elevating mood and satisfaction, as well as some additives that allow balancing the one's diet, *etc.* Psychological needs are those which incline some persons to choose foods in some specific situations and context.

Gender affects the sort of food considered as comfort food: females tend to prefer snack-related foods and males prefer more nutritious meal-related foods. The aged people more accept the snack-related foods as comfort foods [Wansink *et al.*, 2003].

The relations between emotions and food preferences have been so far the objects of a few studies. In the first study carried out among a hundred of American students, the effects of 22 moods on the choice of a number of foods and dishes were determined. The results showed that different

food preferences were associated with different emotions. The largest preference for desserts which were usually sweet, was associated with joy and not depression as commonly believed. Also the largest preference for alcohol was not at anger, frustration, or depression, supposedly used to alleviate the feelings, but at love-affection; as reported, an intention to take wine with meals is to prolong the mood [Lyman, 1989].

In another research 100 university students were investigated for the nutritional values and traditional food-group characteristics of the food preferred at various emotional states. The health-promoting foods were most preferred at positive emotions, and junk foods were more likely preferred at negative emotions.

The present study has been aimed at assessing the influence of different emotions on food preferences among young women in Poland. There were no studies made in such a group which is supposed to be greatly susceptible to both physiological and psychological needs.

MATERIAL AND METHODS

The subjects have been 100 young women, aged 15-20, of different personality, *i.e.* 74% subjects described themselves as persons of unstable moods, easily becoming angry, and only 10% – as good-tempered.

The questionnaire technique was applied. A special questionnaire was elaborated with questions concerning the following issues: (i) food intake, even at a lack of hunger, (ii) food sort frequently chosen with relation to current mood, (iii) whether the eating of some food provokes mood change, and (iv) effect of season on food intake.

The subjects were asked, when choosing the comfort

food, to indicate one and only sort of food.

RESULTS AND DISCUSSION

As observed, 82% of subjects did not suffer from hunger when starting to eat. Thus, the results obtained may be considered as relatively not influenced by the need of eating and mainly by current mood.

The moods play an important role in the choice of a specific food, as shown in Table 1. The fraction of subjects equal to or higher than 10% may be assumed as significant and is indicated by bold numbers. As total the sum of fractions of subjects preferring various sorts of food is shown.

Considering the overall choice of comfort foods in different emotional states, sweets are much more preferred than any other foods. Such choice can be easily explained by very strong preference of sweet taste by people, as shown for yogurts [Vickers *et al.*, 2001] and fruit [Kühn *et al.*, 2001]; *e.g.* preference of cakes remains unchanged when even 75% of fat is removed, but only 25% of sugar [Drewnowski *et al.*, 1997]. On the other hand, such result may be an evidence of ignoring or possessing insufficient knowledge on sweets which may only temporary moderate moods and self-feeling, and should be substituted rather by fruit and vegetables, not containing so much of unnecessary sugars [Somer, 1998]. Fruit, yogurts, ice-cream and alcohol may be considered as important mood moderators in some emotional states. Chips, nuts and snacks, and salads are more seldom used to change the present emotions. However, there is a distinct relation of preference of the use of a specific comfort food on current mood.

The foods, mostly preferred in emotional “negative” states, like anger, sadness, fear and stress, are sweets, and to a lesser extent – alcohol. Boredom is also the emotional state in which one eats more, with no care of physiological needs.

Considering the preference of food in some emotional states, the majority of women took sweets (28%) and alcohol (24%) to become less angry, and salads were chosen the most seldom. Sweets were chosen by sad persons (30%), who also preferred “junk food” (nuts and snacks). Sweets were also preferred in fear (30%), likely as they increase the level of serotonin that improves the mood. Boredom was the reason to increase the intake of almost all foods, mainly sweets, chips and yogurts. It is surprising that alcohol was chosen only by 3% of women in this emotional state. The

TABLE 2. Effect of mood on food intake (%).

Mood	Quantity of food		
	More	Less	No change
Anger	25	48	27
Sadness	28	54	18
Fear	13	48	39
Boredom	83	5	12
Fatigue	9	65	26
Stress	30	48	22
Love	27	33	40
Joy	34	15	51
Average	31	40	29

tired women wished to eat low calorie and digestible food as fruit (25%), yogurts (24%) and salads (18%), less likely – nuts and snacks (5%) and sweets (8%). Stress, similarly to anger, provoked appetite for sweets (31%) and alcohol (20%). In love, most of the women demonstrated an increased need for ice-cream (26%) and sweets (24%). In joy the needs were similar, and fruit were also often chosen. Sixty two per cent of the women expressed an opinion that eaten foods improved their moods.

Table 2 illustrates the effect of mood on the quantity of ingested food. As observed, the moods generally decrease the intake of food but there is an important fraction of subjects who eat more or do not notice any effect of emotional state on the amount of food consumed.

About half the subjects declared that they ate less in such emotional state as anger, sadness, fear and stress. Fatigue substantially decreased the need for eating; 65% of the respondents took less food. Boredom is an emotional state in which eating helps to make something; 83% bored women took more foods in this state. Persons in love behave in a various way; some women ate more (27%), some less (33%), and others did not notice any change. Joy had also no distinct effect on the quantity of food consumed; 15% ate less, about 1/3 – more. Twenty six per cent of the subjects concluded that they ate quickly and did not consider taste as an important factor. It is likely that this group does not assume that moods may affect their feeding mode and preferences.

Winter season inclined the increase in the quantity of

TABLE 1. Percentage of subjects preferring different foods in various emotional states.

Food	Percentage of subjects								
	Anger	Sadness	Fear	Boredom	Fatigue	Stress	Love	Joy	Average
Sweets	28	30	31	21	8	31	24	15	23
Fruit	15	7	13	12	25	11	13	20	14
Yoghurt	5	8	19	15	24	7	11	9	13
Ice-cream	6	11	8	12	9	5	26	17	12
Alcohol	24	11	11	3	3	20	8	13	12
Chips	12	13	5	17	8	7	6	8	9
Nuts and snacks	6	12	5	12	5	16	6	7	9
Salads	4	8	8	8	18	3	6	11	8

food ingested (74% of subjects), likely because of a lack of sun and season depression, and in summer the appetite of women decreased to a considerable extent among 75% of the subjects.

CONCLUSIONS

Emotions constitute very important factors among young women affecting their choice of food. Sweets are mood moderator much more important than any other. Fruit, yogurts, ice-cream and alcohol can also be considered to be important as comfort food.

Foods mostly preferred in emotional "negative" states, like anger, sadness, fear and stress, are sweets, and to a lesser extent – alcohol. Boredom is also the emotional state in which one eats more, with no care of physiological needs.

It is not possible to determine which emotions lead to an increase in hunger and which to its decrease, as every person may behave in a different way. Stress may be an example of state in which some persons tend to eat less, and others – to eat more.

The young women are conscious that a change in a feeding mode may be helpful to eliminate negative emotions. Such a conclusion is supported by an observation that a majority of subjects increase the quantity of food consumed.

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WPŁYW STANÓW EMOCJONALNYCH NA WYBÓR ŻYWNOSCI

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Zaobserwowano, iż emocje mają wyraźny wpływ na wybór jedzenia u 82% kobiet w warunkach, gdy nie były głodne (nie odczuwały, cierpiały głodu). Oznacza to, iż wybór jedzenia jest bardziej uwarunkowany przez emocje niż przez czynniki fizjologiczne. Pod wpływem złego nastroju, jak gniew, smutek, strach czy stres, respondenci najchętniej sięgali po cukierki. Nuda sprzyjała jedzeniu zwiększonej ilości jedzenia, bez specjalnych preferencji. Stres oddziaływał na wybór jedzenia w odrębny sposób: część badanych deklarowała jedzenie większych ilości pożywienia, część – mniejszych. W grupie 74% młodych kobiet stwierdzono zwiększone spożywanie jedzenia w okresie zimowym.