

Eating behaviour in relation to personality dimensions and self-esteem

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Abstract

The research goal was to investigate the relationship between personality dimensions, self-esteem and eating behaviour in various circumstances. We were interested in differences between general eating behaviour patterns and eating behaviour of people in distress. Participants were 303 adults who filled out five questionnaires on eating behaviour patterns, eating and appraisal due to emotions and stress, the big five inventory, contingent self-esteem scale and instability of self-esteem scale. The results show that younger participants are keener to haphazard planning of meals and have higher appraisals of outside stressors and influences. Also, their score in neuroticism and openness were higher, and they expressed higher contingent self-esteem. According to the factorial structure, the factors of eating behaviour and psychological dimensions: coping with stress and extraversion, influence of outside stressors and contingent self-esteem, and eating behaviour patterns. The findings could be promising in further research of personality dimension and eating behaviour habits.

Keywords: Eating behaviour, personality, self-esteem, stress.

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1. Introduction

The relationship between personality traits and food preferences has been an important subject of research since the beginnings of the psychology of eating in the 1970s. The earliest research concentrated on satisfaction derived from food, where authors found there are a lot of sensation-seekers among gourmets (Back & Glasgow, 1981). Later, Hirsch (2001) explained the existence of an anatomic connection between the limbic cortex and the centres for taste and smell, which enables the connection between one's personality and sense of taste. Hirsch (2001) performed an extensive research to investigate the relationship between personality types and people's choice of snacks. Results showed that perfectionists repeatedly choose potato chips, whereas introverts are fonder of cookies with cream. Adventurers on the other hand like to try new flavours of ice-cream, etc. Hirsch's findings were not wholly accepted, but they do show that characteristics like food preferences are not entirely coincidental.

Snell and Johnson (2002) confirmed a number of relations between the psychology of eating, eating disorders, emotions and human behaviour. They found there are several personality traits, dimensions and characteristics, connected to eating: eating optimism, eating status self-perception, eating-related self-esteem, eating-related self-efficacy, eating-related self-monitoring, eating self-schemata, motivation for healthy eating, locus of eating control and eating perfectionism. Eating optimism relates to people's belief that they are able to improve their eating habits. Eating optimism is extremely important in changing one's eating patterns for reasons of health and since optimism is among personality characteristics that a person can actually learn, one should learn to be optimistic in the context of eating as well. Eating self-schemata (or eating self-concept) presents a cognitive frame that an individual uses to process and organise information relating to his or her eating behaviour. On the other hand, one's eating reflects a view of oneself in the area of sexuality, self-control and conflicts between pleasure and guilt. Eating-related self-esteem refers to one's general tendency to positively evaluate his or her ability to practice eating habits that improve health. Research shows that people with lower self-esteem are more guidable in their eating behaviour (including both positive and negative influences) than people with higher levels of self-esteem. With self-esteem being closely linked to one's perception of his or her body image, low self-esteem can also develop into eating disorders. Low self-esteem therefore leads to distorted physical self-concept, which cannot be repaired until an individual's self-esteem is improved (Eating Disorders Venture, 2006). Eating perfectionism represents one's proneness to excessively strict and perfectionistic standards regarding his or her eating behaviour. In the context of eating, perfectionism is particularly connected to eating disorders like anorexia nervosa and bulimia nervosa (Bardone-Cone, Abramson, Vohs, Heatherton & Joiner, 2006). Dissatisfaction with oneself in a relation towards eating reflects in low self-concept (including eating self-schemata), dedinations and oscillations in general and eating-related self-esteem, in eating perfectionism as well as other personality problems. Dissatisfaction with oneself is linked to behaviours such as losing weight, compulsive eating, obesity or eating disorders. Eating disorders derive from complicated interactions between biological, individual and environmental factors, causing the development of pathological eating behaviours (Dovey, 2010), but we can positively state that every eating disorder is a case of extremely low self-esteem and self-concept.

Research shows that both emotions and moods affect eating behaviour along the entire process of ingestion. They influence people's motivation to eat (Macht & Simons, 2000), their food choice (Köster, 2009; Ogden, 2003) and responses to food (Willner & Healy, 1994), as well as chewing, eating speed and metabolism (Blair, Wing & Wald, 1991; Macht, 1998).

Snell and Johnson (2002) found that beside personality traits and characteristics, there are also several emotional dimensions that affect eating behaviour. These dimensions represent emotions and motivation of eating and include eating-related depression, eating-related satisfaction, eating-related anxiety, eating-related guilt/shame and eating-related anger. Eating-related depression is a particular type of depression and represents individual's tendency to feeling sad, dejected and unhappy about

his or her eating behaviour. People feel sad when they think about what they eat, how they eat, etc. Eating-related depression is not linked only to food: it derives from individual's conflicts, frustrations and unsolved issues, and is shown indirectly through eating behaviour, for example, when an individual starts losing or gaining weight, when he or she stops eating certain food, etc. Eating-related satisfaction refers to one's tendency to feel satisfied about his or her eating-related thinking and behaviour. Such a person usually practices balanced nutrition and is therefore satisfied with his or her eating habits. When it comes to eating, nutritionists should strive for stimulating people's satisfaction, because feelings of satisfaction also reflect a person's health. Eating-related anxiety can develop on the basis of existing causes or imaginary unpleasant situations and events. It is accompanied by ideas about negative consequences of specific eating behaviour, for example 'If I eat two slices of pizza, I'm going to put on weight' or 'If I eat this, I'm going to be sick'. An individual is preoccupied with what he or she eats. Eating-related anxiety can also refer to one's tendency to feel tense, discomforted or concerned about his or her eating habits. But it is important to emphasise that with eating-related anxiety there are different mechanisms than with bulimia nervosa or anorexia nervosa, when eating behaviour is actually unhealthy.

Macht (2008) found there are several factors that make an essential contribution to emotion-induced changes of eating: arousal/intensity, valence, food relatedness of emotions, and restrained and emotional eating. He categorised effects of these factors on eating into five classes:

- Emotions aroused by food stimuli affect food choice. For example, tasting sugar or fat evokes positive affective responses that promote ingestion.
- Emotions high in arousal or intensity suppress eating due to incompatible emotional responses. Intense emotions are linked with behaviours and physiological responses that interfere with eating. For example, fear motivates flight and avoidance, evoking autonomic responses inhibiting motivation to eat.
- Negative and positive emotions impair cognitive eating controls. Processing of emotional stimuli requires attention and since human cognitive capacity is limited, cognitive control over eating may be impaired.
- Negative emotions elicit eating to regulate emotions. Research suggests that some people eat in order to cope with stress.
- Emotions modulate eating in congruence with emotion features. Positive information is retrieved more readily during positive mood. For example, joy is associated with an increased capability to perceive and process stimuli and an increased readiness to engage in various activities, thus increasing food pleasantness and motivation to eat.

A great problem with emotions and eating behaviour is emotional eating – aspiration for eating in response to negative emotions (Dovey, 2010). An individual experiences negative emotions and reacts to them with eating, which usually causes negative consequences to his or her health. Emotions can cause an increase or decrease in appetite or food intake. Emotional stress causes increased appetite or food intake with approximately 30% of people and decreased appetite or food intake with approximately 50% of people. Thus, only a minority of people are resistant to emotions' effect on eating behaviour. Emotions can cause increase of food intake in one group of people (restrained eaters) and decrease of food intake in another group (non-restrained eaters) (Macht, 2008). Similarly, different emotions can cause increase or decrease of food intake in the same group of people. For example, boredom can increase one's appetite, whereas sadness decreases it. In the state of anxiety or negative mood, restrained eaters eat more than non-restrained eaters. Restrained eating refers to a permanent pattern of eating-related thoughts and behaviours with the intention of reducing or maintaining one's body weight. An individual deliberately limits his or her food intake. When experiencing emotional stress, restrained eaters eat more because stress ruins their eating rhythm. In the same situation, emotional eaters eat more sweet and fatty food than normal eaters, whereas normal eaters respond to stress by decreasing food intake. Nevertheless, emotion-induced changes in

eating behaviour can occasionally occur with normal eaters as well. Another important factor of emotional eating is the intensity of emotions. Intense emotions can cause a decrease of food intake, whereas lowly or moderately intense emotions cause an increase of food intake. Negative emotions can augment impulsive eating, eating with the intention of regulating emotions and intake of unhealthy food, and reduce food pleasantness and intake of healthy food. On the other hand, positive emotions usually increase food pleasantness and motivation to eat.

Emotional eating also induces different eating patterns with regard to people's weight (normal vs. overweight). With emotional eating, an individual experiences not only negative emotions but also anxiety, which leads to various outcomes:

- decrease of food intake with people with normal weight and
- increase of food intake with overweight people.

For this reason, it is important to pay attention to overweight people under stress. Studies show that overweight people are more emotionally responsive (they experience and show emotions with greater intensity) and more prone to overeating in stressful situations than people with normal body weight (Geliebter & Aversa, 2003). Furthermore, people with highly increased weight (to the level with negative consequences for health) experience negative emotions more often and intensive than people with normal body weight, which leads to emotional eating all the more. Another important factor of emotional eating is presence or absence of other people. In the company of others, people's behaviour is often in accordance with social desirability: an overweight individual eats less to make a better impression. Therefore it is essential to observe an individual's behaviour when he or she is not in the company of others – how one eats and more importantly, controls oneself when one is alone.

The aim of our research was to investigate the relationship between personality dimensions, self-esteem and eating behaviour in various circumstances. We were particularly interested in differences between general eating behaviour patterns and eating behaviour of people in distress, namely in situations where they were under stress and/or experienced strong emotions.

2. Methodology

2.1. Participants

Participants were 303 adults, 24 male and 279 female. Participants' age range was from 18 to 69 years, with an average of 32.52 years ($SD = 11.63$).

2.2. Instruments

To perform our research, we used the following psychological questionnaires and scales:

- **Eating behaviour patterns questionnaire (Schlundt, Hargreaves & Buchowski, 2003):** The questionnaire measures six factors of eating behaviour: low-fat eating, emotional eating, snacking on sweets, cultural/lifestyle behaviours, haphazard planning and meal skipping. The questionnaire consists of 51 items. Participants are asked to read each statement and rate on a 5-point scale how characteristic these statements are of them (1 – not at all, 5 – completely). The subscales' reliabilities are from 0.50 to 0.84 (Schlundt et al., 2003). In our research, internal reliabilities were from 0.51 to 0.88.
- **Eating and appraisal due to emotions and stress questionnaire (Ozier, Kendrick, Knol, Leeper, Perko & Burnham, 2007):** The questionnaire measures how an individual uses food to cope with stress and emotions. The questionnaire measures eating behaviour in three areas: emotion- and stress-related eating, appraisal of ability and resources to cope, and appraisal of outside stressors and influences. The questionnaire consists of 49 items. Participants are asked to read each

statement and rate on a 5-point scale how characteristic these statements are of them (1 – not at all, 5 – completely). The subscales' reliabilities are from 0.65 to 0.95 (Ozier et al., 2007). In our research, internal reliabilities were from 0.63 to 0.89.

- **Big five inventory (John & Srivastava, 1999):** The questionnaire measures five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness. The questionnaire consists of 44 items. Participants are asked to read each statement and rate on a 5-point scale how characteristic these statements are of them (1 – not at all, 5 – completely).
- **Contingent Self-esteem Scale (Paradise & Kernis, 1999):** The scale measures to what degree an individual's self-esteem depends on achieving standards, goals, and positive feedback. The scale consists of 15 items. Participants are asked to read each statement and rate on a 5-point scale how characteristic these statements are of them (1 – not at all, 5 – completely). The scale's test-retest reliability is 0.77 (Kernis & Goldman, 2006). In our research, internal reliability was 0.75.
- **Instability of Self-esteem Scale (Chabrol, Rousseau & Callahan, 2006):** The scale consists of 4 items, referring to conflicting thoughts or feelings of self-worth. Participants are asked to read each statement and rate on a 4-point scale how characteristic these statements are of them (1 – not at all, 4 – completely). The scale's internal and test-retest reliability is 0.89 (Chabrol et al., 2006). In our research, internal reliability was 0.85.

Participants were asked to fill out a battery of above-mentioned scales and questionnaires along with demographic questions (age, gender, region, education, employment, relationship status) and questions referring to their daily activity and interest in sports.

2.3. Procedure

Participants filled out the questionnaires in electronic form. The link to survey page along with basic information about research goals and instructions was sent to various mailing lists, Internet forums and personal contacts. People who decided to participate filled out the questionnaires individually via Internet, which lasted approximately 20 minutes. Of all collected data, 70% of questionnaires were adequately filled out and 30% were invalid (partly or completely unfulfilled).

2.4. Statistics

The data were analysed with statistical methods such as univariate procedures and correlation. Analyses were performed with the SPSS Windows program.

3. Results and Discussion

The results in Table 1 show significant differences with regard to age. It seems that younger participants are keener to haphazard planning of meals and have higher appraisals of outside stressors and influences than older ones. Also, their score in neuroticism and openness as personality dimensions were higher, as well as they expressed higher contingent self-esteem.

Table 1. ANOVA for the gender differences in eating behaviour patterns, personality and self-esteem

Dimension	Age	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>P</i>
Haphazard planning	Younger	19.79	5.815	9.347	301	0.002**
	Older	18.21	3.708			
Outside stressors	Younger	16.42	2.149	10.307	301	0.001**
	Older	15.62	2.181			
Neuroticism	Younger	23.55	5.650	3.719	301	0.055
	Older	22.30	5.658			
Openness	Younger	37.62	6.049	8.702	301	0.003**
	Older	36.57	6.351			
Contingent self-esteem	Younger	51.16	7.719	21.964	301	0.000**
	Older	46.57	9.259			

* $p < 0.05$; ** $p < 0.001$

It could be assumed that age is an important positive variable which contributes to healthier eating patterns that are not influenced by external factors.

The results of correlations between eating behaviour patterns, personality dimensions and self-esteem show some significant relations. It is interesting that low fat eating behaviour pattern significantly negatively correlates with snacking on sweets ($r = -0.259$) and haphazard planning. We found significant positive correlation with appraisal of ability and resources to cope with emotions and stress ($r = 0.169$) and with openness as personality dimension. The second eating behaviour pattern – emotional eating – significantly correlates with snacking on sweets and appraisal of outside stressors and influences, and negatively with appraisal of ability and resources to cope with emotions and stress. There are significant correlations with all personality dimensions, but agreeableness (only neuroticism correlates positively with emotional eating). There are also correlations between emotional eating, contingent self-esteem and instability of self-esteem. Snacking on sweets eating behaviour pattern weakly, yet significantly correlates with lifestyle behaviour, and higher with haphazard planning. When it comes to eating and appraisal due to emotions and stress questionnaire, the highest correlations is with emotion- and stress-related eating, and lower with contingent self-esteem. The fourth eating behaviour pattern – lifestyle behaviour significantly correlates with haphazard planning, stress-related eating, coping with stress (negatively), conscientiousness (negatively) and neuroticism. Fifth eating behaviour pattern – haphazard planning – correlates with meal skipping, agreeableness, (negatively with) conscientiousness, and with contingent self-esteem. The sixth eating behaviour pattern – meal skipping – correlates neither with stress-related areas nor with personality dimensions nor with contingent or unstable self-esteem.

4. Conclusion

The present study showed that age could be a positive variable when it comes to eating behaviour patterns. It seems that age contributes to healthier eating habits such as cooking at home instead of eating outside, eating more vegetables etc. As it comes with age, the study shows that influences of outside stressors and other people's self-esteem dependence decrease. Openness as personality dimensions might increase with age. From all these results, it could be assumed that also personality, self-esteem and coping with stress characteristics might contribute to healthier eating behaviour patterns.

Correlation analyses imply some significant links among different variables, such as emotional eating, snacking on sweets, and unhealthy lifestyle behaviour, which negatively correlates with coping strategies with stress and positively with contingent self-esteem. It seems that there is a latent

structure among specific variables that might lead to an identification of specific factors of psychological dimensions of eating behaviour patterns. Further analysis of investigating factorial structure might be applied in future. We also think that knowledge and recognition of relations of specific eating behaviour patterns with significant psychological characteristics might also help nutrition professionals to develop the strategies of working with people with risky eating behaviour patterns.

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