Development and preliminary validation of the Salzburg Stress Eating Scale (SSES)

### Background
- Stress disrupts normal eating patterns in several ways: It alters overall food consumption, macronutrient composition and frequency of snacking/meals.
- Roughly equal numbers of individuals self-report eating more or eating less when stressed [2][3][4]. Existing questionnaires assess only increased food consumption in response to stress or emotions.
- Moreover, stress- and emotion-related items are often intermingled, although they represent distinct constructs with distinguishable physiological underpinnings and possibly effects on eating behavior.

### Method
- **Development**
  - Selection and adaptation of 4 items from the Perceived Stress Scale [PSS; 5] and 6 items from the Mood Eating Scale [6]
  - 1 = “I eat much less than usual” – 5 = “I eat much more than usual”
  - Mean scores are calculated and provide the possibility to form 3 groups: less-eater (with low SSES scores), normal-eater and more-eater (with high SSES scores)
- **Validation**
  - 340 participants (77% female) recruited via student associations for psychology all over Germany and Austria
  - Measures: Salzburg Stress Eating Scale (SSES), Dutch Eating Behavior Questionnaire (DEBQ) emotional eating subscale [7], PSS [5], Barrett Impulsiveness Scale [8], Eating Disorder Examination – Questionnaire [9], The Center for Epidemiologic Studies Depression Scale [10], Perceived Self-Regulatory Success in Dieting Scale [11]

### Aim of the present study
- Develop a questionnaire that...
  - measures solely stress-related eating behavior (independence of emotion-related changes)
  - acknowledges the fact that stress results in under- or overeating in certain individuals
- Validate the questionnaire with regard to...
  - Reliability and a 1-factorial structure
  - Convergent and discriminant validity
  - The relationship with body weight

### Results

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<tr>
<th>Stress Eating Scale</th>
<th>mean ± SD</th>
<th>Median</th>
<th>mode ± SD</th>
<th>mean ± SD</th>
<th>mode ± SD</th>
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<tbody>
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<td>raw data</td>
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<td>mean ± SD</td>
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<td>1. Wenn ich das Ereignis, das mich stresst, war, kann ich mir bei den Mahlzeiten, ...</td>
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<td>2. Wenn ich sehr gestresst bin, dann esse ich viel, als wäre ich hungrig, ...</td>
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<td>3. Wenn ich sehr gestresst bin, dann esse ich viel, als wäre ich hungrig, ...</td>
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<td>4. Wenn ich sehr gestresst bin, dann esse ich viel, als wäre ich hungrig, ...</td>
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<td>5. Wenn ich sehr gestresst bin, dann esse ich viel, als wäre ich hungrig, ...</td>
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### Conclusion
- Individuals reported more eating as well as less eating when stressed.
- The SSES had very good internal consistency, a 1-factorial structure and convergent/discriminant validity.
- Stress and stress-eating were not related per se, but moderating effects occurred: Stress-eating only related into higher BMI in case of moderate or high stress levels.
- The SSES is the first questionnaire solely measuring stress-related eating behavior alterations (independence of emotions), acknowledging the fact that individuals previously reported increased but also decreased eating in response to stress and additionally allowing for unaltered (i.e. stress uninfluenced) eating behavior.
- A clearer distinction between stress- and emotion-eating with regard to questionnaires/items but also implications should be drawn in future research.

### References