

Donut worry

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Valorization Addendum

Relevance of the studies

Presently one of the most alarming health issues is obesity. Especially in the western world this problem is becoming more and more apparent as for instance in the USA approximately 70% of its inhabitants is overweight and in the Netherlands this number lies close to 50%. As overweight and obesity are associated with serious physical and psychological health concerns and even a higher mortality rate it is imperative to the scientific community to gain more insight in the aetiology of weight gain and pave the way to the development of more efficient treatment and prevention programs.

One of the most simple but true benefactors to weight gain in a healthy population is having a diet with a caloric content that exceeds energy expenditure. Often this “overeating” is caused by eating without hunger, meaning that other factors (than the need to replenish nutrients) in people’s lives makes them eat. A good example of one of these factors is emotions. Emotions can influence peoples eating behaviour, when feeling happy or sad some people restrict their food intake while others eat more. Especially this latter group is important in the context of obesity as this behavioural pattern could potentially lead to overeating and hence, weight gain. Not only does this behaviour (potentially) lead to increased intake of total calories it also often coincides with a preference for high fat and/or sweet food. While these high fat/sweet foods are usually dense in energy, this increases the risk to overeat even more. The current thesis explored a possible healthy subpopulation (high ruminative S/S-allele carriers) with an increased risk to develop an emotional eating style. By identifying these high risk subgroups, better programs can be developed to prevent or treat emotional eating and thereby prevent unhealthy weight gain.

Target groups

First and foremost this dissertation is of relevance for researchers who are interested in emotional eating behaviour and/or stress sensitivity. The

current thesis gives new insights in how the interplay between cognitive and biological stress vulnerabilities can exacerbate each other's effects and increases the negative consequences of stress within in a clinically healthy population. Researchers in related fields can use these new insights to further develop new paradigms and better understand the complex aetiology of emotional eating behaviour. Additionally, the findings in this dissertation can be important for healthcare professionals treating or preventing emotional eating, for instance clinical psychologists, dieticians, general practitioners or policy makers.

Activities and products

The main focus of the dissertation was to gain more knowledge about the influence of the serotonergic system and ruminative thinking in the context of eating behaviour. In theory these new insights can be used in the clinical context of prevention and treatment of obesity. If only used to screen for people who are prone to develop an emotional eating style, genotyping for 5-HTTLPR genotype is (currently) too expensive. However this genotyping could be used more selectively among (sub) populations or families where obesity is prevalent. To screen for ruminative thinking patterns is much easier than genotyping as there are several well validated questionnaires that can be taken through online surveys. If individuals are screened for a vulnerability to develop an emotional eating style (high ruminative S/S-carriers), prevention programs can be setup to coach those individuals in developing/maintaining a healthy eating style.

The amino-acid tryptophan can also be potentially used in the treatment of these stress prone (S/S-carrying) individuals. Tryptophan is a large amino acid which serves as a precursor for serotonin. Several studies have shown that tryptophan can have a beneficial effect on the mood of individuals with an S/S-5-HTTLPR genotype. A few studies have shown that through (sub) chronic intake of tryptophan supplements (which have virtually no negative side effects) the negative effects on mood and stress induced appetite caused

by an S-allele of 5-HTTLPR can be countered. Ancillary, certain diets can also improve tryptophan availability in the brain. For instance carbohydrate consumption can make tryptophan pass the blood brain barrier easier, thereby theoretically having similar effects as taking tryptophan supplements among S-allele carriers. If people are screened for ruminative thinking, this can be treated in the form of cognitive therapy. However as the effects of carrying an S-allele and/or having a ruminative thinking style on emotional eating (described in the current thesis) are of modest size these prevention methods might be too costly (in effort of the patient and financial costs for the healthcare system) for the benefits they might provide.

Innovation

Where a lot a former studies regarding emotional eating mostly looked at either biological or psychological factors, the innovation in the current dissertation was to look at the interplay between these factors. As hypothesized it was found that this combination of biological and psychological stress vulnerabilities in the context of emotional eating is far more explanatory than simply looking at either factor separately. A second innovative approach of the current research line was to look for vulnerabilities to develop an emotional eating style within a healthy population rather than looking for associations among individuals pre-screened for having an emotional eating style, eating disorder or obesity.

Dissemination

The new insights as described in this dissertation have been disseminated in the academic community through publications in leading international scientific journals and presentations at international conferences. These new findings have also been incorporated in courses of the research master curriculum at the faculty of psychology and neuroscience at Maastricht University. As described under the previous headings, at the moment, these findings aren't immediately applicable for clinicians or the general public, therefor they will mostly serve an academic purpose to further our

knowledge about emotional eating and give way to develop better models/
paradigms explaining emotional eating behaviour.

