



Eat2beNICE

Effects of Nutrition and Lifestyle on Impulsive, Compulsive, and Externalizing Behaviours

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D 3.4 – Manuscript: Analysis of joint effects of PA and nutrition on resilient behaviour in CRC 1193

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Executive Summary

The aim of Deliverable 3.4 “Analysis of joint effects of PA and nutrition on resilient behaviour in CRC 1193” was to study whether nutrition and/or PA can buffer against adversity (i.e., stressors, such as life events and daily hassles). A manuscript comprising the results of this analysis is currently in preparation. Publishers’ policies prevent sharing detailed results prior to publication in peer-reviewed journals. Therefore, the present report only gives a brief overview of the results. Detailed results and tables will be made available upon acceptance.

Abbreviations

PA	Physical activity
HEI	Healthy Eating Index
NVS	Nationale Verzehrsstudie (German National Nutrition Survey)
SR	Stressor reactivity
MVPA	Minutes spent in moderate to vigorous PA
SB	Sedentary behaviour
BMI	Body Mass Index

1. Deliverable report

Previous research indicates that resilience, “the process and outcome of successfully adapting to difficult or challenging life experiences” (American Psychological Association, n.d.), is associated with diet and physical activity (PA) (Bonaccio et al., 2018; Hegberg & Tone, 2015; Ho et al., 2015; Lutz et al., 2017; Perna et al., 2012; Robert et al., 2022; San Román-Mata et al., 2020; To et al., 2022; Whatnall et al., 2019; Yin et al., 2019; Yoshikawa et al., 2016; Yu & Ye, 2023). However, these previous studies assessed resilience through trait-questionnaires. Yet, resilience research is moving away from conceptualizing resilience as an individual trait and towards the concept of resilience as a dynamic process (Chmitorz et al., 2018; Denckla et al., 2020; Kalisch et al., 2017; Masten et al., 2021; Rutter, 2006; Stainton et al., 2019). Therefore, the aim of Deliverable 3.4 was to assess the association between resilience assessed longitudinally and diet quality as well as objectively measured PA.

To do so, participants of the CRC 1193 study which follows up individuals, not affected by a mental disorder at study inclusion, over several years to quantify resilience longitudinally (Chmitorz et al., 2021) were invited to take part in the APPetite study (work package 3) of the Eat2beNICE project to collect additional data on dietary intake and PA. In total, 186 participants of the CRC 1193 study participated in the APPetite study. Dietary data was collected through up to five 24-hour dietary recalls (Koch et al., 2020) and through the food record of the APPetite-mobile-app on up to three days (Ruf et al., 2021). Overall diet quality was assessed based on the Healthy Eating Index (HEI) of the German National Nutrition Survey II (Nationale Verzehrsstudie II [NVS]) (Wittig & Hoffmann, 2010). PA was recorded objectively for seven days using move 3 sensors from movisens (movisens GmbH, Karlsruhe, Germany). Minutes spent in moderate to vigorous PA (MVPA) per day as well as minutes spent sitting (Sedentary behaviour [SB]) were calculated from accelerometry. Resilience was quantified by the stressor reactivity (SR) score which is based on the FRESHMO-paradigm (FREquent Stressor and mental Health Monitoring) (Kalisch et al., 2021).

Multiple linear regression analysis was used to assess (1) the relationship between resilience and diet quality as well as resilience and PA (MVPA and SB), and (2) the relationship between resilience and the interaction of diet quality and MVPA. The models were controlled for gender, age, body mass index (BMI), and smoking (non-smokers vs. smokers). No associations between resilience and diet, resilience and PA (MVPA and SB) as well as resilience and the interaction of diet quality and MVPA were found.

Our findings suggest that diet and PA do not buffer against stress. Future research is needed to confirm these findings.

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