

Research Project

BALANCE: Promoting energy balance related behavior after liver transplantation: Development of a behavioral intervention based on diet and physical activity to support effective weight management and a healthy lifestyle - A multiphase mixed method research

Project funded by own resources

Project title BALANCE: Promoting energy balance related behavior after liver transplantation: Development of a behavioral intervention based on diet and physical activity to support effective weight management and a healthy lifestyle - A multiphase mixed method research

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Status Completed

Obesity has become a global health concern not only in the general population but also among liver transplant recipients. For more than two decades, rates of obesity in liver transplant candidates have been rising; and weight gain after transplantation is contributing to a further increase of obesity in the post-transplant course.

Weight gain and subsequent obesity is the result of an imbalance between energy intake and energy expenditure. The mechanisms behind weight gain, however, are far more complex and depend on a multitude of interrelated factors such as genetic, sociodemographic, behavioral, biomedical, psychological, and environmental factors. Despite the multifaceted dynamics, energy balance related behaviors, such as physical activity and healthy diet, are among the most influential factors and can be targeted via behavioral interventions.

In general, obesity is associated with increased risk of all-cause mortality as well as metabolic and cardiovascular comorbidities. Due to the immunosuppressive drugs, liver transplant recipients are already at a higher risk for cardiovascular and metabolic diseases compared to the general population. Maintenance of a healthy lifestyle and the promotion of energy balance related behaviors, i.e., healthy diet and physical activity is therefore highly relevant after transplantation. However, in the transplant population, there is a lack of evidence on: factors related to weight gain and obesity after transplantation; the impact of post-transplant weight gain and obesity on patient outcomes; and behavioral interventions to support effective weight management.

The BALANCE project was designed as a multiphase mixed method research project including two systematic literature reviews with meta-analyses, three quantitative data analyses of the prospective nationwide STCS, and a study with qualitative interviews to explore the patients' perspectives. The results will inform the development of a weight management intervention based on behavior change, diet and physical activity. The systematic development of the intervention will be guided by the behavior change wheel.

We expect that this scientific rigorous approach will provide essential knowledge to the so far limited body of evidence concerning energy balance related behavior and weight management after transplantation. A behavioral intervention integrating eHealth technology might have the potential to positively

impact energy balance related behaviors, decrease comorbidities, and hopefully improve long-term patient outcomes after transplantation.

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