RESEARCH LETTER

Short-term Healthy Lifestyle Intervention and Long-term Behavior Change After Kidney Transplantation: Findings From the CAVIAR Study

To the Editor:

Our previous work explored the benefit of active versus passive lifestyle modification in nondiabetic kidney transplant recipients in the CAVIAR randomized controlled trial.1 It introduced the concept of incorporating evidence-based behavior change therapy (BCT) into posttransplant care. While failing to show any benefit in the primary outcome of glycemic pathophysiology, it demonstrated improvements in secondary outcomes including weight and fat mass, and a trend toward less posttransplantation diabetes mellitus (PTDM; 7.6% vs 15.6%) for active versus passive intervention arms, respectively, after a 6-month personalized intervention.

However, evidence for long-term adherence to health behavior change is poor in the general population.2 Typically, encouraging early response after any targeted behavior change intervention is followed by diminished adherence in the long term. Low self-reported health,3 depression,4 and lack of motivation5 are linked to poor adherence to lifestyle changes in the general population, but evidence for this posttransplant is lacking.

One of the a priori CAVIAR study objectives was to explore if behavior change is sustained after study completion. Details of the CAVIAR study and 6-month outcomes have been reported.1 For this analysis, changes in 3-year outcomes from baseline were compared between randomized cohorts. Poststudy outcomes were linked to psychological measures tested during the original CAVIAR trial to determine associations. This included EQ-5D (questionnaire relating to health status and quality of life),2 the Beck Depression Inventory (specific tool for depression),3 and the Situational Motivation Scale (specific tool to assess motivation).4 Detailed methods are given in Item S1.

Fig S1 provides a flow diagram for data analysis. As shown in Fig 1, active versus passive study participants experienced divergent weight during study participation but converge back to baseline weight after study completion. Fig S2 provides a scatterplot of weight change during versus post study period, stratified by randomization status for individual participants. Table 1 highlights similar cardiometabolic and safety parameters between study participants at 3 years, including no significant difference in PTDM (16.1% vs 13.6% for active versus passive intervention arms, respectively, \( P = 0.7 \)). No association was observed between participant age, body mass index, ethnicity, or sex with evolution of weight either during or after study completion (Figs S3 and S4).

Multiple linear regression analysis is reported in Table S1. With regard to weight change during study intervention, the overall regression model was not significant but the randomization group significantly predicted weight change (coefficient estimate, 2.14 [95% CI, 0.56-3.73]; \( P = 0.009 \)). For weight change after study completion...
The wide range of theories of health behavior contain many overlapping constructs, and so choosing a relevant theory can be difficult for intervention designers. Translating theories to transplant patients will be more challenging, with their greater complexity and substantial burden of care, and requires support and infrastructure.

This analysis explores the sustainability of a post-transplantation BCT beyond the initial delivery. While further research is recommended, with collaboration between transplant professionals and social scientists, our findings suggest incorporating any BCT into posttransplant care must be a continual process rather than a one-off intervention owing to risk of behavior relapse.

Kulli Kuningas, MSc, Joanne Driscoll, BSc, Reena Mair, BSc, Edward Day, MD, and Adnan Sharif, MD

Supplementary Material

Supplementary File (PDF)
Figures S1-S4; Item S1; Table S1.

Article Information

Authors’ Affiliations: Departments of Nephrology and Transplantation (KK, AS) and Nutrition and Dietetics (JD, RM), University Hospitals Birmingham, UK; and School of Psychology (ED) and Institute of Immunology and Immunotherapy (AS), University of Birmingham, Birmingham, UK.

Additional Information: ORCID ID for AS: 0000-0002-7586-9136.

Address for Correspondence: Adnan Sharif, MD, Department of Nephrology and Transplantation, University Hospitals Birmingham, Queen Elizabeth Hospital, Edgbaston, Birmingham, B15 2GW, United Kingdom. Email: adnan.sharif@uhb.nhs.uk

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References


