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The search for effective behavioural approaches for adolescent type 1 diabetes management

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A substantial body of evidence documents the importance of ensuring that health care for chronic conditions includes patient self-management education and support as part of ongoing medical management.^{1–2} Optimal management of a chronic condition requires that patients be equipped with the skills and support for disease management tasks, effectively cope with psychosocial aspects of the disease and its management, and communicate effectively with family, friends, and health-care providers regarding disease management. These behaviours are particularly relevant in the management of paediatric type 1 diabetes, in which a convergence of developmental and disease factors during adolescence complicates optimal disease management behaviours, contributing to a reduction in adherence and glycaemic control.

The FLEX behavioural intervention reported by Elizabeth Mayer-Davis and colleagues³ used problem-solving skills training along with motivational interviewing and a flexible array of educational tools to enhance disease management among adolescents with type 1 diabetes. This approach is well-supported by the scientific literature. Problem-solving skills are an essential component of self-management education across chronic health conditions because ongoing disease management requires that patients identify self-management challenges, take appropriate actions, and alter their behaviour according to changes in circumstances.¹ Problem-solving skills training has broad application and documented effectiveness across various health behaviours,^{4–5} and our previous work found efficacy of this approach in improving glycaemic control in young people with type 1 diabetes.^{6–7}

The age range targeted in this study (13–16 years) is consistent with the subgroups that demonstrated the greatest intervention effect previously, and the amount of intervention contact in FLEX was similar to that of other behavioural intervention trials. Incorporating motivational interviewing, an interaction style that increases intrinsic motivation, would be expected to improve the effectiveness of the problem-solving skills approach. The intervention was delivered with excellent fidelity, and participant completion of the intervention and retention across the study was high. As such, the null findings of the primary outcome of glycaemic control are unexpected and suggest that further research is

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needed to establish the most efficacious application of behavioural approaches to improve disease management.

The improvement in motivation and problem-solving skills reported by intervention participants is encouraging, but given the absence of a linkage of these outcomes to improvements in disease management, the clinical meaningfulness of these findings is uncertain. Participation in the intervention could lead to a greater tendency to report behaviour consistent with the intervention targets, leading to differential reporting error by treatment assignment, which could bias estimates of the intervention effect.⁸ Longitudinal research linking change in these constructs to change in disease outcomes would be informative. The intervention effects of greater quality of life, lower parent–child conflict, and lower fear of hypoglycaemia observed in FLEX participants represent clinically meaningful outcomes. The adverse psychosocial toll of managing type 1 diabetes is well documented;⁹ as such, the application of health-care approaches that promote psychosocial health is of crucial importance independent of any effect on glycaemic control.

The FLEX adaptive approach tailored intervention intensity on the basis of achievement of target glycaemic control. Such an approach might facilitate translation to clinical care because it allows resources to be systematically allocated to those demonstrating the greatest need. Nevertheless, more than 80% of participants received the full intervention, as their A1c remained above target. Future approaches adapting the intervention approach based on both glycaemic control and psychosocial needs could represent a promising application of personalised medicine in behavioural chronic disease management. However, developing effective approaches might require that behavioural intervention no longer be thought of as a time-limited inoculation, but rather, provided continuously as an integral aspect of clinical care for chronic disease management. Just as medical management requires ongoing monitoring, adjustment, and response to changing conditions, so too might behavioural approaches to facilitate patient self-management. Present understanding of the precise nature of these approaches and their adaptation to various patient populations for maximum effectiveness remains in progress, underscoring the crucial importance of continued work towards effective behavioural approaches for chronic disease care.

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