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Response: *In Situ* Mobilization of Patients with Obesity as a Key Determinant of Weight Loss Interventions (J Obes Metab Syndr 2020;29:292-302)

David Thivel^{1*}, Géraldine Rix-Lièvre², Michel Recope²

¹Clermont Auvergne University, EA 3533, Laboratory of the Metabolic Adaptations to Exercise under Physiological and Pathological Conditions (AME2P), Clermont-Ferrand; ²Université Clermont Auvergne, EA 4281, Laboratoire Activité, Connaissance, Transmission, Éducation (ACTé), Clermont-Ferrand, France

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*Corresponding author
David Thivel

 <https://orcid.org/0000-0003-4687-3555>

Clermont Auvergne University, EA 3533, Laboratory of the Metabolic Adaptations to Exercise under Physiological and Pathological Conditions (AME2P), BP 80026, F-63171 Aubière cedex, France
Tel: +33-4-73-40-76-79
Fax: +33-4-73-40-76-79
E-mail: david.thivel@uca.fr

While there is a growing body of evidence regarding the metabolic, physiological, or functional benefits of multi-disciplinary weight loss interventions in adolescents who are overweight and obese, their effects on mental health, well-being, health-related quality of life (HRQOL), and perceived physical-fitness and health remain less explored. Our research group recently tried to better understand these potential psycho-physiological responses to multi-disciplinary weight loss programs by considering different modalities of exercise interventions in obese adolescents.¹ In particular, we recently reported in *Journal of Obesity & Metabolic Syndrome*, that a 4-month multi-disciplinary intervention incorporating high-intensity interval training improved HRQOL and perception of health and physical fitness in obese adolescents, and that most of these improvements were associated with degree of weight loss.²

In an Letter to the Editor, Choi³, while pointing out the quality and relevance of our work and its results, also stressed the necessity to fully consider the nature of the psychological support received by the adolescents, as well as the potential implication of their initial motivation when engaging in such interventions. We would like to thank Choi³ for raising these important points, giving us the op-

portunity to complete our initial publication, and to initiate what we believe are necessary discussions regarding the role and implications of adolescent (and overall patients) motivation and engagement in clinical interventions.

First, the psychological intervention the adolescents received a monthly 90-minute session of psychological support through individual consultations with a professional. Sessions focused on self-esteem and emotional, social, and familial relationships and issues. As suggested by Choi³, psychological sessions can focus on motivation of patients to engage in the intervention efforts and to lose weight, which will impact their engagement with the program and affect the success of the intervention. However, our sessions mainly focused on coping with social and emotional difficulties that often accompany pediatric obesity.

In his paper, Choi³ describes the importance of considering patient motivation, adherence, and engagement for intervention success. We agree and would like to take advantage of this opportunity to explore these concepts and clarify their potential implication for success of behavioral and clinical programs.

Second, it seems important to clarify that our initial published

results deal with the effect of the intervention on the adolescents' quality of life and perceived health and fitness, and that psychometrics can be improved independently of the motivation of the patients. Indeed, improvements in body composition and physical fitness have been found in association with improved HRQOL and health or fitness perception despite a lack of motivation.

This leads us to what we believe is an excellent opportunity to clarify the concept of motivation, which is an essential component for the success of our interventions. Indeed, in line with what is suggested by Choi³, it appears necessary to consider the self-reported motivation of patients (initial and its evolution) to follow a weight loss intervention and behavioral *in situ* motivation that relies on mobilization and engagement during the sessions.^{4,5} A patient might be effectively motivated to take part in such a program based not only on anticipation of the final benefits, social interactions related to the intervention, and relationship with the practitioner, but also the awareness of the health-necessity of losing weight without being fully engaged, mobilized, and implicated.

Although complex and difficult to properly evaluate and assess, such *in situ* engagement and mobilization will require (1) identification of intrinsic motivation by the patients, (2) a sense of belonging and social affiliation, and (3) perception of concrete and credible competences based on criteria that are both internal and external to the program itself and also pertinent and meaningful for the patient. Importantly, a patient gathering these crucial determinants of intrinsic motivation might be more likely to be engaged and mobilized during the program, be empowered to induce the health-related benefits of the program, to express a higher HRQOL and well-being during and after the intervention, and to engage in a sustainable and autonomous healthy active lifestyle postintervention, as the major determinant of successful weight loss. From a psycho-behavioral point of view, while the initial motivation, whatever its reasons, remains important to initiate a patient in such a program, their engagement and mobilization within the program (based on intrinsic motivation) are crucial determinants that should be better considered by practitioners.⁶

While we have a basic knowledge of the mechanics of weight loss, we must better understand why the achieved benefits of our interventions in some patients remain below expectations and the estimated prescription and how to motivate such patients to main-

tain the weight loss postintervention. We believe that increased consideration of patient intrinsic motivation to begin and continue the intervention, independent of initial expressed motivation, might help us improve both the effects of the program and individual sustainability over time. This effort clearly illustrates the need for larger multi-disciplinary strategies for prevention and treatment of overweight status and obesity and for development of additional research studies combining psychosocial, physiological, and philosophical approaches.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: all authors; acquisition of data: all authors; analysis and interpretation of data: all authors; drafting of the manuscript: all authors; critical revision of the manuscript: all authors; statistical analysis: all authors; administrative, technical, or material support: all authors; and study supervision: all authors.

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