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Time for a new agenda for behavioural treatment of overweight and obesity

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Medical guidelines place lifestyle and behavioural intervention centre stage in weight management. Improved responses in terms of weight loss for people living with obesity may be achieved by adding pharmacological treatment (National-Institute-of-Health-and-Care-Excellence, 2014, Garvey et al., 2016, Jensen et al., 2014, Grunvald et al., 2022). Thus, a new generation of drug treatments has been greeted as a significant advance and understandably raised hopes. Expectations of “quick fixes” have undoubtedly been fuelled by enthusiastic media and social media coverage which does not always present a balanced view (for example, some of the potentially unpleasant side effects of certain drug treatment are not often reported in the media). Nevertheless, the mechanisms of action of these drugs mimic some of the endocrine effects of bariatric surgery (LaFerrere, 2016), and therefore these advances may represent a significant step towards the goal of a “medical bypass” – medical therapy that one day might obviate the need for invasive surgical procedures (Miras and le Roux, 2014). To the extent that the clinical effectiveness of drug treatments can extend to the longer term (which is as yet unknown), these treatments might also prove to be cost-effective. However, while extending the availability of pharmacotherapy may bring considerable health benefits on an individual level (and yield considerable financial gains for manufacturers), it is less clear whether this is a realistic or affordable solution at population level. The implications for clinical practice of new pharmacological treatments for obesity are currently uncertain. For example, drug trials usually test new drugs in conjunction with a basic behavioural support package, but the most effective way to combine these two elements in clinical practice is a different question.

New pharmacotherapies have gained licences for short term use based on early trial data, but the long-term treatment requirements of obesity are also recognised and

emphasised in UK guidance (National-Institute-of-Health-and-Care-Excellence, 2014). Self-evidently, as with other chronic diseases such as diabetes, hypertension, chronic inflammatory diseases and many cancers, relapse can occur when treatment is stopped. However, the economics of adopting potentially lifelong drug treatment as the standard approach to “epidemic” levels of obesity are not known. But perhaps most obviously, it is important to consider also that many underlying causes of overweight and obesity are not specifically affected by the mechanisms of action of drugs (e.g., environment and psychological factors).

Ultimately, a biomedical, mechanistic approach to the treatment of obesity, in the form of medical (or surgical) interventions, although clearly beneficial for some people, also serves to individualise the condition and, implicitly if not explicitly, apports responsibility, or blame, on the individual instead of recognising the wider complex social contexts that shape people’s behaviour – contexts which we argue must also form part of the “cure”. Evidence-based behavioural approaches provide the context in which these influences can be recognised and addressed.

Healthcare professionals often focus on weight loss as the primary aim whereas, for many people, weight loss *per se* is not the only or primary goal. Rather, improvement may be sought in body image, self-esteem and broader psychosocial functioning – outcomes that are not wholly accounted for by weight changes (O'Brien et al., 2007). Weight management programmes which meet the health *and* wellbeing needs of people living with obesity should be a priority, but the extent to which this can be achieved by medical intervention alone, without accompanying behavioural modification, is questionable. This point is one that goes to the heart of clinical practice for weight management. And once the importance of this is acknowledged, a broader

question must be asked: what are the *social impacts* of increasingly widespread use of potentially long-term pharmacotherapy?

Eating is a social phenomenon and a fundamental basis for social connection (“breaking bread”) and such social connections are a foundation for physical and mental health as epidemiological research has firmly established (Holt-Lunstad et al., 2010). By changing the way individuals engage with food, drug treatment has the potential to disrupt social connections, including for example through its impact on family mealtimes. Mealtimes provide important opportunities for shared family time together and facilitate communication in children and collective problem solving (and for many families, mealtimes may be the only time that a family comes together in any given day). How do different eating patterns or schedules, such as when one, or sometimes several, members of a family are receiving long-term pharmacological intervention that restricts food consumption, impact these dynamics?

Of course, obesity is a highly stigmatised condition that itself severely impacts social relationships – including the ability (and confidence) to form new social connections – and the family serves an important protective function against social isolation. Wider social connections, for example those that are formed through interest and hobby groups, and friendship networks, undoubtedly also play an important role here. But there are also indicators that behaviour-based weight management programmes, with their focus on providing skills training to support dietary behaviour change, may similarly occupy a valuable role in helping patients manage stigma experiences and other psychological distress. When such care is provided to groups of patients simultaneously, the new social connections that can be fostered amongst patients can form a powerful basis for behavioural change (Tarrant et al., 2016). Such observations should motivate a renewed commitment to developing the psychological and

behavioural science evidence base that needs to underpin a holistic approach to weight management.

A new agenda

The above observations lead us to question whether the impact on appetite of pharmacological or surgical treatment, on their own or with little accompanying behavioural change, is of sufficient magnitude to obviate a continuing need for effective lifestyle and behavioural interventions at the individual, group, and population levels. We suggest that it is not. While there is little doubt that surgical and medical interventions, including drug treatments and low calorie diets, are important options at the individual level, they cannot replace the need for effective behavioural intervention – because it is the latter that is most likely to help people meet their long-term health and wellbeing needs. Indeed, many people who recognise that they could stand to benefit from pharmacological or surgical interventions would prefer not to receive them. Effective behavioural care is the preferred approach for many people.

Much more research is needed, however, in order to develop a behavioural evidence base that informs effective long term treatments for obesity. We outline below several key priorities – a new agenda – reflected in the above discussion and drawn from our broader clinical and research experience in this field. The ten priorities we identified (Table 1) are of course not exhaustive and will undoubtedly grow as research in this area advances.

Perhaps most obviously, there is a need for investment in research into effective behavioural solutions for obesity that are implementable and deliver sustained impact. This includes developing an understanding of how behaviour-based support can be delivered effectively in remote settings and dispersed populations, where in-person

treatment is less feasible or not preferred. This might include, but is not limited to, support for behaviour change through prompts and biofeedback through digital health approaches including apps and AI. However, it cannot be assumed that these approaches will be embraced or effective, and so their wide scale adoption would be premature with little evidence or arrangements for the acquisition of high-quality long-term data.

Table 1: *A new research agenda for behavioural treatment of obesity*

Evidence Priority	Research Question
Implementable and sustainable behavioural programmes	What are the core requirements for long-term, cost-effective and scalable behaviour change programmes in weight management?
Culturally appropriate behaviour change	What are the requirements for effective behavioural weight management programmes in different populations and cultures?
Long-term behaviour change	How can behavioural interventions (with and without pharmacotherapy) achieve significant long-term weight control?
Models of behavioural care	Which models of behavioural intervention are most effective and cost-effective, and acceptable to patients?
Pharmacotherapy and behaviour change programmes	How can programmes best combine long-term behaviour change with pharmacotherapy?
Behavioural support during and after intensive dietary intervention	How can programmes best combine long-term behaviour change with/after low calorie diet interventions?
New technologies and behaviour change	Can technology (e.g., apps, AI) enhance and sustain long-term behaviour change?
Workforce organisation	How can different professional groups deliver scalable and cost-effective weight management programmes?
Professional training	How can available workforces be trained to support optimal long-term behaviour change, across different models of care (e.g., group-based; one-to-one)?
Policy and Public Health evidence	What implementable and scalable Policy and Public Health strategies at population level enhance individual adoption of healthier behaviours?

The current widespread interest in the use of apps remains poorly evidence based, especially in terms of uptake, adherence and long-term outcomes. This approach often appeals, but clearly does not suit everyone. Uptake is often low and attrition high. A recent systematic review and meta-analysis of smartphone apps in weight management encountered a very heterogeneous literature with generally poor reporting of studies (Chew et al., 2022). After identifying 16 articles that met the inclusion criteria, reporting outcomes in 2,870 individuals, the average weight losses were -2.18 kg at 3 months and -1.63 kg at 12 months. On its own, this magnitude of effect is insufficient to meet most people's needs and would make little impact in the context of specialist ("Tier 3") services for people with more severe obesity. Nevertheless, this approach could support responses to other treatment modalities.

There is a need to advance the understanding of the social and behavioural mechanisms that contribute to long-term maintenance of behaviour in people with obesity. This requires funders to recognise the very limited relevance of short-term outcome data and the need to fund longer-term studies. Relatedly, there is a need to investigate what types of long-term behavioural support and resources for weight loss and maintenance can optimise the effectiveness of surgical and pharmacological treatments. This should include developing a better understanding of how surgical, intensive dietary and pharmacological treatments affect social relationships and connectedness in the family and wider social contexts, and in the workplace setting.

The care model remains a major challenge. With obesity being an increasingly prevalent, and severe obesity now a common disease, the pivotal requirement for behavioural weight management programmes to provide regular, intensive, contact is difficult to achieve at any scale through the traditional medical model of individualised face-to-face care. Finite resources make this an unachievable luxury in most public

healthcare systems. There is growing interest in the use of groups to deliver behaviour change interventions, but the design of group interventions has generally not been informed by theory and research relevant to social group processes. Therefore, advancing understanding of how group processes shape positive health outcomes in treatment settings will be important, in order to equip services with the evidence and skills to scale up and deliver effective group-based behavioural support.

Related to this, there are continuing workforce training needs. There is a need to recognise, and develop an improved understanding of, the facilitator skill profiles that are required to effectively support behaviour change. This includes being able to create the necessary “conditions” that make such change possible. This is perhaps particularly important in delivery of group-based behaviour change programmes where relationships between patients in a group (and those between the facilitator and the group) fundamentally shape the processes that motivate change, and these require careful management by the facilitator. Health care professionals are not routinely equipped with these skills, to any significant extent, during their training or during the course of their postgraduate training.

Finally, there is a need to reflect upon the notion that obesity is simply a “choice”. For the many people who everyday experience the assumptions that are made about them, and the blame and stigma for having gained weight in the first place, obesity is very far from a voluntary state. Inherited genetic and epigenetic predispositions cannot be rectified. Furthermore, our environmental and family influences are often so strong as to be inherited. The entrenched habits of lifetime are at best exceedingly difficult to overturn permanently, if not entirely immutable, because of the unchanging landscapes in which we lead our lives: our relationships and home circumstances, economic constraints and rigid working lives. Is it really realistic to expect anyone to

choose their behaviour, and achieve sustained responses to encouragement and advice, in such a toxic environment? People will continue to struggle to make the behavioural choices that are required until these are facilitated by public health policy and political will.

In conclusion, the current hopes for effective weight loss through medical intervention place insufficient emphasis on people's psychosocial health and risks setting a dangerous, and potentially expensive, precedent. Certainly, there remain many unknowns about behavioural intervention, not least how best to enable long-term choice and behavioural change in the context engrained behaviours and a challenging social landscape. It is no surprise that behaviour change is difficult, but this is all the more reason to renew our efforts to develop a better understanding of it. It is also uncertain, but probably extremely unlikely, that pharmacotherapy will ever become a globally available treatment, given the existing limited access to, and sometimes non-availability in many developing countries of life-saving medicines such as insulin. Therefore, there is a need for a new agenda for weight management – an integrated science of weight management that recognises the above concerns and gives appropriate priority to behavioural approaches alongside medical treatment where the latter is available, warranted and chosen by patients. There is a risk that, given the current momentum behind medical treatment, behavioural science will be left behind – but now is the time to firmly embed it within integrated models of care. Meanwhile, the fate of Sisyphus remains an apt metaphor for the endless cycles of weight loss and regain that result from the difficulty of maintaining healthier behaviours.

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Conflict of interest statement

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About the authors

Jon Pinkney and Mark Tarrant are co-Principal Investigators of the NIHR-funded “PROGROUP” programme (<https://theprogroupstudy.co.uk>). This 5-year programme of research involves the development and evaluation of a new group-based intervention for the behavioural management of severe obesity. The intervention is currently being subjected to a national randomised controlled trial.

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