Obesity management

Paul Chadwick *and* **Helen Croker** *on why psychological intervention is the best option.*

AS anyone who has tried to lose weight will know, it is not easy. Rely on willpower or calorie counting alone, and try as you might you can't squeeze into that smaller size. But surely some serious psychological input can do the trick? Outcomes for the behavioural treatment of obesity are modest and have changed little over the past 15 years. Individuals completing such programmes can expect to lose approximately 10 per cent of their starting body weight and typically regain two thirds of it within the first year following the end of treatment. Almost all weight lost is put back on within five years (Thomas, 1995).

So is it really worth it? How can psychologists gain the upper hand in the battle of the bulge?

Goals of obesity management

Presence of excess body fat is not just a challenge to hegemonic standards of physical beauty; adipose tissue is physiologically active and contributes to a range of pathological processes. Compared with non-obese counterparts, obese individuals require more and higher dosages of prescription medication, suffer greater complications of medical conditions and surgery, and are less likely to be fertile (Counterweight Project Team, 2004; Pasquali *et al*., 2003). For children, severe amounts of excess weight can precipitate precocious puberty and cause disorders such as sleep apnoea, which can affect cognitive development. There are few medical conditions for which obesity does not exacerbate symptoms or make treatment more difficult. Because the vast majority of obese children become obese adults, the projected economic and disease burden of this condition is a 'ticking time bomb' for health and public services.

Given the deleterious impact of excess fat, the basic goal of obesity treatment is to reduce levels of excess adipose tissue without creating additional problems resulting from excessive dietary restraint or physical overexertion. But this is not as simple as it might initially seem. In an ideal world, all obese individuals would reduce their level of excess weight to within the 'ideal' body mass index (BMI) range – that is, the level at which body fat is not associated with increased physical morbidity. Unfortunately, a large body of empirical data testifies to the grim reality that this lean ideal is unattainable for the vast majority of obese individuals. Current expert recommendations therefore advise that adults should aim to lose approximately 10 per cent of their initial bodyweight, whatever that may be. For some individuals even this modest amount of weight loss may be unrealistic, and a more appropriate target may be the prevention of future weight gain. This is particularly true for physically ill individuals whose condition, or its treatment, makes weight loss very difficult.

Reducing the level of body fatness in children is even more complex. Reductions in the level of fatness must be achieved whilst providing enough energy for adequate growth and development (Barlow *et al*., 1988). Children can become less overweight simply by maintaining their current weight over the course of development. However, this strategy would be insufficient to prevent a severely obese child from becoming an obese adult. In such cases modest amounts of weight loss – around 1 pound (500g) per month – may be necessary (Dao *et al*., 2004). In some cases a slowing in the rate of weight gain would also be a useful outcome.

Whilst a drop in bodyweight is the most obvious target of treatment, there are other modifiable risk factors for present and future ill health to tackle. The diets of many obese individuals are lacking in essential nutrients and skewed towards the over-consumption of fats and unrefined sugar. Low levels of physical activity also

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contribute to poor health. The health risks associated with poor diet and a sedentary lifestyle operate independently of body weight and of each other. Nonetheless, both are greater in those who are obese. In recognition of this, weight management interventions ideally aim to modify a range of risk factors for poor health, even in the absence of weight loss. Put another way, the goals of obesity interventions are to achieve health at any – but preferably a lighter – weight.

A psychological approach to obesity management

Since the determinants of energy imbalance are primarily behavioural – eating behaviours and physical activity – a psychological approach seems ideally suited to tackle obesity. Indeed, for individuals with mild to moderate obesity, psychologically based interventions are currently the treatment of choice. Interventions for both adults and children seek to help individuals create a health-promoting micro-environment (typically the family unit) which helps to protect individuals from the intense environmental pressures against weight loss.

The goals of behaviourally based obesity treatment are typically twofold. Individuals are educated about the benefits of adopting a reduced energy but nutritionally balanced diet, and are taught a range of cognitive and behavioural techniques to help them implement this advice (e.g. self-monitoring of food intake, and rewards for achieving dietary and activity goals). This basic framework can be implemented with or without a specific encouragement to lose weight. Our preference is to encourage individuals to adopt a balanced diet with the aim of achieving modest but sustainable weight loss (e.g. Rapoport *et al*., 2000).

The goals of behavioural treatment for children are much the same, although, there is much less emphasis on weight loss. Parents are taught techniques of behavioural modification to change the contingencies that govern their children's eating and activity patterns, so that the new healthier behaviours persist. Behavioural change is the criterion for success and actual weight loss is not rewarded. Whilst the child is the identified target of treatment, the whole family is encouraged to develop habits that reflect a move towards a healthier lifestyle.

For individuals with morbid obesity – a BMI of 40 and above – lifestyle modification without the assistance of drugs or surgery is relatively ineffective.

Management of obesity in adults

As we saw at the outset, helping individuals to maintain weight loss following the end of treatment is the next challenge for behavioural treatment. Offering continued therapist contact in the form of mail, telephone and clinic appointments all help to maintain weight loss but offer diminishing returns in terms of cost-effectiveness (Perri, 1997). The use of internet-based technologies seems a promising option for encouraging greater levels of maintenance (Tate *et al*., 2003).

To the uninitiated such modest outcomes may engender a sense of therapeutic nihilism. To counter this, the modest results of behavioural treatment need to be set against the inexorable trend for increasing BMI in most untreated individuals and the fact that patients themselves are largely satisfied with modest weight losses. Standard treatment of obesity in primary care – advice-giving masquerading as behavioural therapy – is demonstrably ineffective in both adults and children, even with highly motivated individuals (Denzer *et al*., 2004; Moore *et al*., 2003). Commercial weight loss programmes have been shown to be superior to standard NHS primary care management, but are only half as effective as behavioural treatment. Self-help approaches, unless highly structured and based on behavioural principles, can actually induce weight gain (Latner, 2001).

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Given that modest weight losses fall disappointingly short of medical and aesthetic ideals, we may reasonably ask whether they are worth the effort. The most convincing argument for helping individuals to achieve modest weight losses comes from the results of large-scale prospective trials to reduce the incidence of Type 2 diabetes, a serious, chronic and progressive condition and the single leading cause of end-stage renal disease in the UK. In the Diabetes Prevention Study, behavioural treatment aiming for a 7 per cent weight loss and 150 minutes per week of moderate physical activity was compared against placebo and metformin – a drug which promotes weight loss and improves features of the insulin resistance syndrome. Compared with placebo, behavioural treatment reduced the incidence of diabetes by 58 per cent, a figure significantly higher than the 31 per cent reduction produced by metformin, and these effects were observed across gender and ethnic groupings (Molitch *et al*., 2003).

For an individual at risk of developing Type 2 diabetes the implications of this trial are clear: a weight loss of 7 per cent will substantially reduce the risk of developing a disease which could end with end-stage renal disease, blindness, sexual dysfunction and chronic pain. Since management of the complications resulting from diabetes represent some of the most costly treatments in the canon of modern health care – dialysis, supported living, Viagra and Prozac, for example – modest weight loss is clearly a valuable intervention in both individual and public health terms.

Management of obesity in children

The level of concern generated about the dangers of childhood obesity is matched only by the dearth of evidence to guide interventions in this area. A recent systematic review found only 18 randomised controlled trials of child obesity treatment and concluded that no studies had sufficient power to form the basis for a meta-analysis (Summerbell *et*

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al., 2004). Nevertheless, an impressive series of studies by Len Epstein and colleagues suggests that behaviourally based interventions that target lifestyle change for the whole family can prevent obese primary-school-age children from becoming obese adults. Follow-up of the children taking part in the Epstein studies – known as the Traffic Light Programme – found that 30 per cent of the participants were no longer obese by adulthood. A further 34 per cent were still obese but had substantially reduced their level of overweight (Epstein *et al*., 1990, 1994).

Epstein's model, despite being the most consistent and well-evaluated body of work in this area, has failed to be accepted as a valid treatment option in the UK. This is largely because of the relative homogeneity of the population studied – largely white and middle class – and the fact that the programme has not been tested outside of the centre in which it was developed. The work of the Cancer Research UK Health Behaviour Unit has sought to evaluate whether Epstein's model is successful when translated to a different cultural setting. The results of our pilot study show short-term results comparable to those achieved by Epstein with a more racially mixed population of lower socio-economic status (Edwards *et al*., 2004).

As with adults, the most severely obese children may require more intensive management. The most impressive results for this population of children have come from inpatient cognitive-behavioural programmes, such as that described by Braet *et al*. (2003). Over a period of 10 months, children living in a residential unit achieved a mean reduction of 48 per cent on their ideal per cent BMI (where 100 per cent BMI is an ideal weight for their height and 290 per cent BMI extremely overweight) and have thus far managed to maintain this weight loss for 14 months following discharge. Whilst taking children out of the family environment purely for the purpose of managing their weight may seem extreme, the low drop-out rate for this voluntary programme testifies to the extreme sense of powerlessness that some families experience in the face of this most intractable of problems.

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Parental concern that helping a child to lose weight might lead to their developing an eating disorder limits engagement with paediatric weight management programmes, and contributes to the reluctance of many professionals to offer such treatment. Interventions which elevate children's concern about their health, and weight and eating in particular, should always be handled sensitively. Nevertheless, there is now sufficient evidence to suggest that the relationship between attempts to change children's eating habits and the onset of eating disorders is complex. Children are aware of the desirability of a thin body shape from a very early age and have been shown to initiate their own attempts at weight loss at ages as young as seven (Maloney *et al*., 1989). The likelihood of attempting unsupervised weight loss is higher in children who are overweight and obese (Vander Wal & Thelen, 2000), and such efforts actually tend to lead to an increase in level of overweight (Field *et al*., 2003). Prospective studies consistently identify childhood weight as a risk factor for the subsequent development of eating disorders (Fairburn *et al*., 1998, 2003). Taken together, such findings strongly suggest that non-intervention, at least for some overweight children, is not the risk-free option it has traditionally been assumed to be.

Concerns about the toxic effects of treating childhood obesity have obscured the positive psychological benefits that can accrue from weight management interventions. Participation in group programmes is routinely associated with increases in self-esteem (e.g. Sacher *et al*., 2005), and the magnitude of improvement is often closely correlated with the amount of weight lost (Barton *et al*., 2004). Put more simply, children feel happier about themselves when they have lost weight. Rates of eating problems in adults who were treated as children with family-based behavioural management have been found to be lower than those found in the general population. Such observations suggest that sensible and well-timed weight management advice may act to improve obese children's self-esteem and reduce their risk of developing eating problems in later life (Epstein *et al*., 1994).

The primary variable by which the success of childhood obesity treatments has been evaluated is body mass index. Whilst BMI is generally used to define obesity clinically because it is easy to calculate, quick to measure and non-invasive, it is increasingly recognised to be a poor index

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of fatness in individual children (Wells, 2000). In normal growth, increases in BMI during both later childhood and adolescence can be attributed primarily to increases in fat-free tissue (e.g. muscle and bone) rather than fat (Maynard *et al*., 2001). More sensitive indicators of disease risks associated with excess adiposity – waist circumference, for example – are increasingly being used to evaluate outcome (Sacher *et al*., 2005).

Psychologists on the front line

A consistent body of research now testifies to the efficacy of psychologically based interventions for individuals with mild to moderate obesity. Such interventions are demonstrably effective in clinical terms and are well liked by those take part in them. Nevertheless, there exists a dramatic disparity between the magnitude of the obesity 'problem' and the availability of appropriately trained professionals available to deliver the 'gold standard' evidence-based practice. Of course, given the scope of the problem it is neither appropriate nor realistic to expect the NHS to stand alone against the rising tide; its efforts need to be supported by ballasts provided by effective public policy and the commercial sector. Nevertheless, the lack of access to evidence-based interventions is of serious concern.

One of the main factors limiting the dissemination of behavioural treatments is the lack of health professionals with sufficient training in the behavioural management of obesity. Clinical psychologists are rarely involved in obesity management outside of very specialised settings, and there are currently insufficient numbers of clinically skilled health psychologists to meet the need. The most promising way forward is to train other professional groups – dieticians, for example – to implement treatment based upon behavioural models. Whilst such professions are often keen to integrate psychological models into their practice, it has been our experience that they desire and require ongoing supervision if such training is to percolate into practice.

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Psychologists have the potential to make a significant contribution towards an effective response to the obesity epidemic. In order for this potential to be realised we would suggest that two things must happen. Firstly, psychologists must come to see themselves as part of the solution to the obesity problem. Our contributions are well-established in the area of research, and increasingly in public policy, but we are surprisingly absent from the therapeutic front line. Perhaps this absence is a feature of the magnitude of the problem – there are currently too few of us who have sufficient experience in this area to meet the need. Secondly, in order to best utilise our knowledge and skills we need to think creatively about how to translate them to other professional groups. This means working proactively within the health service to ensure the conditions necessary for psychological approaches – stereotypically viewed as elitist and expensive – to take hold and flourish.

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References

Barlow, E.B. & Dietz, W.H. (1998). Obesity evaluation and treatment. *Pediatrics, 102*(3), E29.

Barton, S.B., Walker, L.L., Lambert, G., Gately, P.J. & Hill, A.J. (2004). Cognitive change in obese adolescents losing weight. *Obesity Research, 12*(2), 313–319.

Braet, C., Tanghe, A., De Bode, P., Franckx, H. & Van Winckel, M. (2003). Inpatient treatment of obese children. *European Journal of Pediatrics, 162,* 391–396.

Counterweight Project Team (2004). A new evidence-based model for weight management in primary care: The Counterweight Programme. *Journal of Human Nutrition and Dietetics, 17*, 191–208.

Dao, H.H., Frelut, M-L., Peres, G., Bourgeois, P. & Navarro, J. (2004). Effects of a multi-disciplinary weight loss intervention on anaerobic and aerobic aptitudes in severely obese adolescents. *International Journal of Obesity, 28,* 870–878.

Denzer, C., Reithofer, E., Wabitsch, M. & Widhalm, K. (2004). The outcome of childhood obesity management depends highly upon patient compliance. *European Journal of Pediatrics, 163*, 99–104.

Edwards, C., Nicholls, D., Cooke, L., Viner, R. & Wardle, J. (2004). Outcome of family based behaviour therapy for obesity. *Archives of Disease in Childhood, 89,* A56.

Epstein, L.H., Valoski, A., Wing, R.R. & McCurley, J. (1990). Ten-year follow up of behavioural, family-based treatment for obese children. *JAMA, 264*(19), 2519–2523.

Epstein, L.H., Valoski, A., Wing, R.R. & McCurley, J. (1994). Ten-year outcomes of behavioral family-based treatment for childhood obesity. *Health Psychology, 13,* 373–383.

Fairburn, C.G., Doll, H.A., Welch, S.L., Hay, P.J., Davies, B.A. & O'Connor, M.E. (1998). Risk factors for binge eating disorder: A community-based, case-control study. *Archives of General Psychiatry, 55*, 425–432.

Fairburn, C.G., Stice, E., Cooper, Z., Doll, H.A., Norman, P.A. & O'Connor, M.E. (2003). Understanding persistence in bulimia nervosa: A 5-year naturalistic study. *Journal of Consulting and Clinical Psychology, 71,* 103–109.

Field, A.E., Austin, S.B., Taylor, C.B., Malspeis, S., Rosner, B., Rockett, H.R. *et al.* (2003). Relation between dieting and weight change among preadolescents and adolescents. *Pediatrics, 112,* 900–906.

Latner, J.D. (2001). Self-help in the long-term treatment of obesity. *Obesity Reviews, 2*, 87–97.

Maloney, M.J., McGuire, J., Daniels, S.R. & Specker, B. (1989). Dieting behavior and eating attitudes in children. *Pediatrics, 84*, 482–489.

Maynard, L.M., Wisemandle, W., Roche, A.F., Chumlea, W.C., Guo, S.S., Siervogel, R.M. (2001). Childhood body composition in relation to body mass index. *Pediatrics, 107*, 344–350.

Molitch, M.E., Fujimoto, W., Hamman, R.F., Knowler, W.C. and the Diabetes Prevention Program Research Group (2003). The diabetes prevention program and its global implications. *Journal of the American Society of Nephrology, 14*(7 Suppl 2), S103–7.

Moore, H., Summerbell, C.D., Greenwood, D.C., Tovey, P., Griffiths, J., Henderson, M. *et al.* (2003). Improving management of obesity in primary care: Cluster randomised trial. *British Medical Journal, 327*, 1085.

Pasquali, R., Pelusi, C., Genghini, S., Cacciari, M. & Gambineri, A. (2003). Obesity and reproductive disorders in women. *Human Reproduction Update, 9*, 359–372.

Perri, M.G., Martin, A.D., Leermakers, E.A., Sears, S.F. & Notelovitz, M. (1997). Effects of group- versus home-based exercise in the treatment of obesity. *Journal of Consulting and Clinical Psychology, 65*, 278–285.

Rapoport, L., Clark, M. & Wardle, J. (2000). Evaluation of a modified cognitive-behavioural programme for weight management. *International Journal of Obesity and Related Metabolic Disorders, 24*, 1726–1737.

Sacher, P., Chadwick, P., Wells., J., Cole, T. & Lawson, M. (2005). Evaluating the feasibility of the MEND programme for childhood obesity. *Journal of Human Nutrition and Dietetics, 18,* 3–5.

Summerbell, C.D., Ashton, V., Campbell, K.J., Edmunds, L., Kelly, S., Waters, E. (2004) Interventions for treating obesity in children (Cochrane Review). In *The Cochrane Library*, Issue 4, Chichester: Wiley.

Tate, D.F., Jackvony, E.H. & Wing, R.R. (2003). Effects of internet behavioral counseling on weight loss in adults at risk for Type 2 diabetes: A randomized trial. *JAMA, 289*, 1833–1836.

Thomas, P.R. (Ed.) (1995). *Weighing the options.* Washington, DC: National Academy Press.

Vander Wal, J.S. & Thelen, M.H. (2000). Eating and body image concerns among obese and average-weight children. *Addictive Behaviours, 25*, 775–778.

Wells, J.C.K. (2000). A Hattori chart analysis of body mass index in infants and children. *International Journal of Obesity,* 24, 325–329.