CASE REPORT

Should Ramadan be prescribed after Christmas? Obesity in the healthcare profession and the health benefits of fasting

Ahmed Hankir,¹ Mohammed Hankir,² Rashid Zaman³

¹Department of Psychiatry, The University of Manchester, Manchester, UK

²Integrated Research and Treatment Centre for Adiposity Diseases, University of Leipzig, Leipzig, Germany

³Department of Psychiatry, The University of Cambridge and South Essex Partnership Trust, Cambridge, UK

Correspondence to

Dr Ahmed Hankir, ahmedzakaria@doctors.org.uk

SUMMARY

Obesity is an important risk factor for cardiovascular morbidity and mortality. In the UK, one in four people are considered overweight or obese and that number is expected to rise to one in three by 2020. Employees of the National Health Service (NHS) are no exception with up to half of healthcare workers considered overweight or obese. Religious periods such as Christmas and Ramadan are associated with weight changes. Weight gain has been reported during the Christmas period albeit not as much as was traditionally believed according to the results of recent research. Conversely, weight loss has been reported in Muslims who fast during the Islamic month of Ramadan; however, this amount tends to be modest and weight gradually returns to pre-Ramadan status according to a meta-analysis of the literature. We report a case of an NHS healthcare worker – which is the first of its kind that illustrates the role that fasting and other factors have played a role in causing dramatic oscillations in his weight.

Now far be it for me to pass any judgement, only a few months ago I did not have to take a look down the hospital corridor to behold the spectacle of how the obesity epidemic has gripped our nation, I merely had to glance at my own reflection in the mirror.

With the festive season approaching and the imminent arrival of mince pies and other calorific confectionary soon to be displayed on our supermarket shelves, we thought it relevant, necessary and important to analyse and discuss the trend of weight gain during the Christmas period, the obesity epidemic and how this applies to healthcare staff.

We provide a case report of an individual from the ranks of the healthcare profession—a practicing doctor—and utilise this as a platform to discuss how mental health challenges, occupational factors and the Islamic month of Ramadan can influence phenotype.

An overview on the magnitude of the obesity problem: prevalence, facts and figures

Obesity and its associated comorbidities are relentlessly on the rise. In the UK, over half of the population are currently classified as overweight and a quarter as obese.² The economic burden that this places on the National Health Service (NHS) is immense with the total costs predicted to be in the billions of pounds within the next two decades.²

Obesity, in essence, results from an imbalance between energy intake and energy expenditure. While it is clear that the increased consumption of highly calorific foods coupled with a more sedentary lifestyle account in part for the dramatically increased prevalence of obesity, the underlying causes are known to be more complex. For instance, over-nutrition (as well as malnutrition) of the fetus in utero is now an established environmental factor that causes obesity in adulthood.³ Large-scale genome-wide association studies have also established a genetic basis for obesity in the general population.⁴

Despite the devastating consequences of what has been dubbed a 'disease of civilisation', therapeutic options for obesity remain limited. Surgery is by far the most effective form of treatment with Roux-en-Y gastric bypass causing a sustained 30% weight loss in the long term.⁵ Hormone-based therapies such as the long-lasting GLP1 receptor agonist Liraglutide, which was initially marketed as a type II antidiabetic agent, are also effective

'There is a holiness to the heart's affection...'

John Keats

'No person fills a vessel worse than their stomach. A few mouthfuls that would suffice to keep their back upright are enough for a person. But if he or she must eat more, than he or she should fill one third [of their stomach] with food, one third with drink and leave one third for easy breathing.'¹

Muhammad (PBUH)

BACKGROUND

The patient was not more than 20 m away from me. I cannot use the adjective 'portly' to describe him. He was morbidly obese and indeed boasted a spectacular corpulence. What provoked me to reflect, however, was not so much his weight but more the fact that he was skillfully balancing a box of pizza on his right hand and his eyes betrayed, in my perception at least, that he could not wait to sink his teeth into this high-in-cholesterol and low-in-nutrition meal, one of many he has consumed before no doubt. It appeared, ostensibly, that he did not want to do anything to remedy his weight problem (did he even perceive it to be a problem?) but, on the contrary, perpetuate it with an unhealthy diet.

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weight-loss agents.⁶ Combinational therapies are re-emerging after the withdrawal of the hybrid formula Phentermine-Fenfluramine (Phen-Fen). In a recent randomised clinical trial, Topiramate-Phentermine was shown to cause a greater than 10% weight loss in a majority of participants after a year.⁷ Other novel approaches are being pursued such as treatments that stimulate the browning of white adipose tissue, thereby increasing energy expenditure and tipping the energy homeostasis balance in the right direction.⁸

Addressing the issue of obesity in NHS staff

Francis Fouin in a contentious article published in *BMJ* (there were notably 12 rapid responses to his controversial piece) alludes to how there has been so much talk about carrot and stick being applied to the obesity epidemic.⁹ Indeed, how do we resolve this problem? Do we prod and poke the individual we alluded to in the preamble of this manuscript with a metaphorical stick (thus 'punishing' him) and expect to inspire his obedience with 'fear'? Or do we 'reward' him with a metaphorical carrot and hope to win him over with 'love'? Can we apply Machiavellian principles to public health policy and provision?

According to an indignant Fouin:

If indeed half of NHS employees are overweight or obese it is a national disgrace where we would expect an example to be set.¹⁰

Fouin promulgates that:

Only when people are aware that obesity will affect their employment possibilities will many take their problem seriously...¹⁰

Weight gain during the Christmas period: fact or fiction?

So is there any unequivocal evidence to prove that people become more generous in proportion over the Christmas period as has traditionally been thought? Roberts *et al* conducted a study in the USA to examine holiday weight changes and its contribution to annual weight changes in a convenience sample of 195 adults. On an average, the participants, as expected, did gain weight during the 6-week winter period from Thanksgiving through to New Year. What was not expected was the average weight gain—which was only 0.37 kg. Weight gain was, however, greater among individuals who were overweight or obese and 14% of the sample gained >2.3 kg.¹¹

Even though the absolute average weight gain in participants who volunteered in the aforementioned study was more modest than anticipated. Dr Jack Yanovski has warned that few people ever lose the extra pounds that were gained during the festive season. Indeed, Ian MacDonald, professor of metabolic physiology at Nottingham University medical school released the following statement regarding the results of this study:

...It is worrying that if the annual increase [in weight] is 1.4lbs, 50% of that is being gained in the six week period from the middle of November...¹²

These results, therefore, suggest that holiday weight gain may be an important contributory factor to the rising prevalence of obesity. Further studies, however, using representative populations and larger sample sizes are needed to confirm these findings.¹¹

CASE PRESENTATION

The benefits of autobiographical narrative and psychopathology are well described in the literature.^{13–17} In this manuscript, we provide an autobiographical narrative (ie, first person narrative) from a doctor—the primary author—employed by the NHS who has experienced dramatic oscillations in his weight. AH

comments on the religious, psychosocial, physical and occupational factors that he attributes to this phenomenon.

Case report (first person narrative): AH

Disclaimer: while weight loss has been reported in those who fast, it is important that anyone who is considering any form of fasting consult their general practitioner (GP) and/or relevant healthcare professional for guidance, advice and supervision.

I never really had any problems with my weight prior to my mid-20s. In fact, it was quite the contrary. As a teenager, I developed a passion, perhaps even an obsession, for basketball. Attending basketball practice on a regular basis endowed me with a slender body.

In my third year of university at 23 years of age, I feel I was at the peak of my physical strength and stamina. My discipline was such that I was lifting weights 3 times per week and running 3–4 times per week as well as preparing for high-stake assessments in my clinical years of medical school. During this year I was also appointed as the captain of the university basketball team. At 1.72 m in height, I had to compensate for my diminutive stature with my agility, endurance and athleticism which my exercise regime conferred on me. I earned the respect of my team-mates and adversaries, some of whom would tower over me. Through playing basketball on a daily basis and maintaining my fitness with cardiovascular and resistance training, I was a lean 70 kg man. I was of muscular build and I received compliments about my physique quite often (figure 1).

The war in Lebanon in 2006, however, was a turning point as I developed low mood and consequently I was no longer interested in my physical appearance or playing basketball or engaging in any kind of sport or exercise. Since that date, I gradually put weight on.

My eating habits were, in hindsight, quite appalling. I would eat out regularly and order take aways if and whenever I could. Vending machines would dispense high calorie snacks which I would devour in an instant. This reflected biochemically in the

Figure 1 A photo of AH taken in 2005 when he was a medical student and captain of Manchester University basketball team. He was 70 kg in weight when this picture was taken.

cholesterol levels in my blood which were a staggering 7.3 mmol/L (only 0.1 mmol/L away from a referral to a specialist). I was diagnosed with hypercholesterolaemia, a significant risk factor for cardiovascular mortality, at the age of 30 and my GP initiated me on a statin.

I became the antithesis of my former self. My body weight would reach 105 kg in May 2013 (figure 2). The compliments that I used to get turned into negative and disparaging remarks about my body weight (from friends and people I had only just met). Despite the aforementioned things, I was in denial about being overweight, let alone clinically obese and so this unhealthy lifestyle continued and did not look like changing anytime soon.

I cannot say that I can attribute my poor physical health entirely to my mental health issues. It is true that my body deteriorated around the onset of my mental disorder; however, I have been in complete remission of my mood disorder since 2009 and I continued to have significant weight problems after then.

Being a foundation trainee was quite a stressful period in my life. Although I was constantly mindful of the perils of burning out and took measures to ensure that this would not happen, I had little, if any, regard for my physical health. I was fully aware that I would be suspended to practice medicine if a mental illness did transpire, but I could continue to put on weight and this would not have a negative effect on my training or career progression.

In July 2013 Ramadan had arrived. As a practicing Muslim, I would observe this pillar of Islam. Ramadan in 2013 coincided with long days in England and there were times that the window of opportunity to eat would be as narrow as 5 h. In previous Ramadans, I would binge when the *Muezzin* would issue the call to *Maghrib* (or dusk time) prayers, thus indicating

that those who were observing a fast could break it. As a result, I would only lose a modest amount of weight, or even put some weight depending on how zealously and voraciously I would eat during *iftar* or breaking-fast time.

This Ramadan, however, I was determined to break the cycle (for reasons that will be enumerated below). I would only break my fast with salad and I eliminated from my diet chocolate, sweets and any other calorific food products and kept carbohydrate consumption to a minimum. I cut my calorie intake per day to no more than 1500. I would perform push-up exercises whenever I could (even on an ad hoc basis), sometimes performing up to 500 push-ups per day and other callisthenics. I also became a member of a gym again.

My exercise tolerance had decreased significantly as did my muscle mass, strength and stamina. I was fatigued and developed aches and pains throughout my body in the initial period. I, however, persisted and the rewards have been, according to others, quite astonishing.

OUTCOME AND FOLLOW-UP

It has been 3 months since I adopted this new lifestyle and I now weigh in at 75 kg (I have lost approximately 30 kg in weight in a 3-month period; figure 3). My waist size has decreased from 36 inches to 32 inches. I have even had to buy a new wardrobe of clothes because all of my other clothes no longer fit me. I now, once again, receive compliments about my physique. Even at the gym, I feel that other members have esteem and respect for me. I run 10 km 3 times per week and lift weights 3–4 times per week as I once did.

Looking back at photos of myself, I cannot believe how overweight I looked (this was less than 4 months ago). At that time, I did not appear to be morbidly overweight to myself. With hindsight, I appreciate that there must have been some kind of psychological process or phenomenon taking place (perhaps in a similar way that those who suffer from anorexia nervosa perceive themselves to be heavier than they really are).

My intention is to maintain my body weight and physical well-being through exercise and diet. Although I cannot attribute maintaining my current weight entirely to Ramadan it did

Figure 2 A picture of AH in May 2013 while he was a Foundation Year 2 Trainee. At 105 kg in weight and 1.72 cm in height; he was clinically obese.

Figure 3 AH in November 2013. He lost approximately 30 kg weight in 3 months and weighed 75 kg when this photo was taken.

provide me with the impetus and platform to modify my lifestyle. Fear of returning to my overweight self has helped me to resist the temptation that the modern world invariably thrusts your way (just go to any café and you will see cakes, scones and all sorts of high-calorie pastries on display attempting to entice you to an unhealthy existence). I will adopt the mantra of Alcoholics Anonymous and take it one day at a time. The most important factor, however, in my losing weight was finding the love of my life. In an article in *BMJ Case Reports*, David Holloway, a poet who has experienced schizophrenia, expounds on how the power of love was crucial in his convalescence.¹⁴ I, too, would like to echo David's message.

DISCUSSION

Bipolar disorder and weight gain

As it turns out, I was not alone when it comes to suffering from oscillations in my mood and an increase in adipose tissue. Indeed, one of the significant issues that people with bipolar disorder grapple with is weight gain. Susan Simmons-Alling and Sandra Talley examined research that focused on this phenomenon. They note that 35% of people with bipolar disorder are clinically obese, which is the highest percentage of any psychiatric illness.¹⁸

The suggested factors that may be contributing to this problem include gender, geographical location, coexisting eating disorders (such as binge-eating disorder (as high as 18%) and bulimia nervosa (up to 10%)), higher number of depressive episodes, treatment with medications that cause weight gain, high carbohydrate consumption and physical inactivity.¹⁸

Additional theories have also been posited. Although I was a teetotaler and fortunate enough not to have a penchant for smoking or taking drugs (and, one could argue, this protected me from gaining even more weight), substance misuse is a major issue in those who suffer from bipolar disorder with alcohol excess and chain smoking over-represented in this population and both of which have been correlated with weight gain.¹⁸

The correlation between Ramadan and weight loss: a meta-analysis

The results of studies on the effects of fasting in Ramadan on weight changes have been inconsistent. Sadeghirad *et al*¹⁹ conducted a systematic review and meta-analysis to comprehensively evaluate and assess whether fasting during the Islamic month of Ramadan was indeed correlated with weight loss.

It is important to note that the inclusion criteria for participants involved in the studies that were subjected to meta-analysis were healthy adults. The results were intuitive; they revealed that fasting during Ramadan caused a significant weight loss (−1.24 kg; 95% CI −1.60 to −0.88 kg). However, most of the weight that was lost during this Islamic month was regained within a few weeks and only a slight decrease in body weight was observed in the following weeks after Ramadan compared with that at the beginning of Ramadan. The results also revealed that there was cultural variation with weight loss during Ramadan, which is greater among Asian participants compared with African and European counterparts.¹⁹

Sadeghirad and colleagues concluded that weight loss during Ramadan was relatively modest and mostly reversed, gradually returning to pre-Ramadan status. They posit that Ramadan provides an opportunity to lose weight, but that structured and

consistent lifestyle modifications are necessary to maintain a sustained weight loss.¹⁹

Intermittent fasting and the 5:2 diet: the secret to sustained weight loss?

Michael Mosley, in an article published in the Daily Telegraph, describes how despite the fact that most of the great religions advocate fasting he was always sceptical about the medical benefits. Mosley's scepticism, however, was before he tried what has now become the influential 5:2 diet, a regimen in which you can eat whatever you want to 5 days of the week, then twice a week you restrict yourself to no more than 600 calories a day.²⁰

Mosley tried various approaches with regard to how and when he should consume 600 calories including having 300 calories for breakfast and 300 for supper. This is in fact similar to what Muslims would do when fasting (those who fast would have *suhur* or a meal before sunrise and *iftar*, or a meal to break their fast with at sunset). It does not matter which 2 days of the week you fast but Dr Mosley himself preferred to do his intermittent fasts on Tuesdays and Thursdays. Again, this is similar to what Muslims would do and Mosley actually cites that this is apparently something that the prophet Muhammad recommended.²⁰

The results, in Mosley's own words, were quite impressive. Six weeks after starting the 5:2 diet, Dr Mosley had a full medical examination. He lost well over a stone and his blood glucose, which had been borderline diabetic, was now within normal range and his cholesterol levels, previously high enough to necessitate medication, were also down in the healthy range.²⁰

Dr Mosley concludes that intermittent fasting is not something that you will find many doctors recommending because according to the current medical opinion the benefits of fasting remain unproven and that while there is plenty of animal data, hitherto there is limited evidence of its efficacy in long-term human trials. Mosley also adds the caveat that intermittent fasting is not recommended for pregnant women or patients with diabetes on medication and that anyone considering a diet that involves fasting is advised to consult their GP first, and to do it under medical supervision. Interestingly, there is dispensation from observing a fast in the holy month of Ramadan (ie, women who are menstruating, people who are not able to fast for health reasons, etc).²⁰

CONCLUSION

Obesity is a complex health issue that has a multifactorial aetiology and is continuing to rise at a staggering rate. It is an important cause of cardiovascular morbidity and mortality as well as other physical and psychological comorbidities. On a personal note, I concede that there were elements of denial and ignorance regarding the seriousness of this disease, particularly when I was overweight myself. There has, however, been a paradigm shift in my health belief system; I have deconstructed and reformulated my opinion on obesity. I now understand and believe that being obese is a serious illness that can be insidious in its development and literally fatal in its consequences. It is, fortunately, reversible and obese individuals can normalise their body mass index in a matter of months as evidenced in this case report and others. All those who are considering lifestyle changes to promote weight loss are advised to consult their GP and/or relevant healthcare professional.

Learning points

- ▶ Obesity is an important cause of cardiovascular morbidity and mortality with an underlying multifactorial aetiology including lifestyle (ie, diet and exercise) factors and genetic and metabolic factors. The number of people considered to be overweight or obese is continuing to rise with up to 50% of healthcare professionals also affected.
- ▶ A recent study has confirmed that people do gain weight during the Christmas period; however, the results also revealed that the absolute average weight gain was less than expected. The weight gain in the Christmas period does, however, account for up to 50% of annual weight gain.
- ▶ Holiday weight gain may be an important contributory factor to the rising prevalence of obesity.
- ▶ Weight loss has been reported in Ramadan; however, a meta-analysis has revealed that this amount tends to be modest and mostly reversed, gradually returning to pre-Ramadan status.
- ▶ Fasting during Ramadan can provide an opportunity to lose weight; however, structured and consistent lifestyle modifications are necessary to maintain sustained weight loss. Anyone considering fasting should consult their general practitioner and/or relevant healthcare professional for guidance and supervision.

Contributors AH devised the idea for this manuscript, provided the case report and conducted the study and contributed significantly with the review of the literature. MH provided the information on the aetiology, prevalence and treatment of obesity. RZ proofread the article, making modifications and correcting errors on the psychiatry section of the manuscript and adding further specialist information on bipolar disorder and weight changes.

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REFERENCES

- 1 Islamweb. *Food for thought: Prophet Muhammad's recommendations regarding food*. <http://www.islamweb.net/ver2/engblue/ebooks/en/Prophet%20Muhammads%20Recommendations%20Regarding%20Food.pdf>
- 2 Wang YC, McPherson K, Marsh T, *et al*. Health and economic burden of the projected obesity trends in the USA and the UK. *Lancet* 2011;378:815–25.
- 3 Tarry-Adkins JL, Ozanne SE. Mechanisms of early life programming: current knowledge and future directions. *Am J Clin Nutr* 2011;176S–71S.
- 4 Spiliotes EK, Willer CJ, Berndt SI, *et al*. Association analyses of 249,796 individuals reveal 18 new loci associated with body mass index. *Nat Genet* 2010;42:937–48.
- 5 Sjöström L, Lindroos AK, Peltonen M, *et al*. Swedish Obese Subjects Study Scientific Group. Lifestyle, diabetes, and cardiovascular risk factors 10 years after bariatric surgery. *N Engl J Med* 2004;351:2683–93.
- 6 Astrup A, Rössner S, Van Gaal L, *et al*. Lean ME; NN8022-1807 Study Group. Effects of liraglutide in the treatment of obesity: a randomised, double-blind, placebo-controlled study. *Lancet* 2009;374:1606–16.
- 7 Gadde KM, Allison DB, Ryan DH, *et al*. Day WW. Effects of low-dose, controlled-release, phentermine plus topiramate combination on weight and associated comorbidities in overweight and obese adults (CONQUER): a randomised, placebo-controlled, phase 3 trial. *Lancet* 2011;377:1341–52.
- 8 Whittle A, Relat-Pardo J, Vidal-Puig A. Pharmacological strategies for targeting BAT thermogenesis. *Trends Pharmacol Sci* 2013;34:347–55.
- 9 Malhotra A. It's time to ban junk food on hospital premises. *BMJ* 2013;346:f3932.
- 10 Francois LP. Foin Banning junk food in hospitals. It's time to ban obesity in NHS employees. *BMJ* 2013;347:f4646.
- 11 Roberts SB, Mayer J. Holiday weight gain: fact or fiction? *Nutr Rev* 2000;58:378–9.
- 12 Christmas weight gain 'small'. *BBC News*, 23 Mar 2000. <http://news.bbc.co.uk/1/hi/health/687024.stm>
- 13 Hankir A, Zaman R. Jung's Archetype, 'the wounded healer', mental illness in the medical profession and the role of the health humanities in psychiatry. *BMJ Case Rep*. Published Online: 12 Jul 2013. doi:10.1136/bcr-2013-009990
- 14 Hankir A, Holloway D, Agius M, *et al*. 'The Verses of Madness' schizophrenia and poetry. *BMJ Case Rep*. Published Online: 20 Dec 2012. doi:10.1136/bcr-2012-007499
- 15 Holloway D. My 'colourful' life with schizophrenia. *CEPiP* 2011;1:111–14.
- 16 Hankir A. The melodies of manic-depressive illness: a case study of bipolar disorder. *CEPiP* 2013;1:246–53.
- 17 Hankir A, Agius M. Review and overview: autobiographical narrative and psychopathology. *CEPiP* 2013;1:254–60.
- 18 Simmons-Alling S, Talley S. Bipolar disorder and weight gain: a multifactorial assessment. *J Am Psychiatr Nurses Assoc* 2008;13:345.
- 19 Sadeghirad B, Motaghipisheh S, Kolahehdoo F, *et al*. Islamic fasting and weight loss: a systematic review and meta-analysis. *Public Health Nutr* 2012;1–11.
- 20 Mosley M. The 5:2 diet: can it help you lose weight and live longer? *The Telegraph*, 16 Aug 2012. <http://www.telegraph.co.uk/lifestyle/9480451/The-5-2-diet-can-it-help-you-lose-weight-and-live-longer.html>

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