

REVIEW ARTICLE

Fat Shaming in Medicine: Overview of Alternative Patient Strategies

Denise R. Sackett, DO¹; Tala Dajani, MD, MPH¹

¹A.T. Still University, Mesa, Arizona.

KEYWORDS:

Behavior Change

Fat Shaming

Lifestyle

Motivation

Obesity

Overweight

ABSTRACT: As the rate of obesity-related diseases rise, physicians are spending more time in their practices working to motivate patients to lose weight. Historically, to change the lifestyle behaviors of patients, physicians have detailed the consequences of excess weight gain and offered predictions of obesity-related complications and early demise. Although this motivational technique has been widely used in medicine, this “tough love” educational approach can have unintended consequences and be ineffective or even harmful in some patients. Behavioral change models and the positive psychology literature provide tools and methods to assist providers in the care of patients living with or at risk of weight-related morbidity and mortality. These techniques motivate patients without unintentionally disempowering them or their families.

WHAT IS FAT SHAMING?

Recently, a patient said, “I went to the cardiologist, but all he did was fat shame me.” The initial reaction was to bristle. The cardiologist, of all medical specialists, had legitimate reasons to address the patient’s weight status. The patient had a body mass index (BMI) of 38 (kg/m²), with past medical history significant for diabetes mellitus type 2 and obstructive sleep apnea. But this patient was not done with her account. She further related that after she left the cardiologist’s office, because of feeling fat shamed, she ate most of a pumpkin pie. Clearly, weight loss would have a beneficial effect on her health conditions. So what caused this patient to have a negative response to weight loss counseling?

The next day, the author came across an article in a popular women’s fitness magazine in which a patient complained about being fat shamed by all but one of her doctors.¹ As a result, the patient stopped seeing the physicians who told her to lose weight and only continued seeing the one who did not bring it up.¹ Her BMI was 35 (kg/m²).¹ This behavior was truly perplexing and had a paradoxical effect. The physicians who counseled the patient in weight loss had her best interests in mind and were providing evidence-based information, so why did she stop seeing them?

CORRESPONDENCE:

Denise R. Sackett, DO | dsackett@atsu.edu

A quick Internet search revealed additional articles with similar themes in prominent magazines in the last few months.^{2,3} Was the medical community truly fat shaming or were these patients’ reactions the result of societal stigmas? We began to wonder whether we had ever harmed a patient by providing evidence-based weight loss counseling? If doctors and patients have a shared goal, namely, optimal health and vitality, then what is the disconnect on this issue? More importantly, how can we, the medical community, fix it?

WEIGHT LOSS PROMOTION AND LIFESTYLE CHANGES MOTIVATION

Until recently in medical training and practice, physicians attempted to motivate patients by discussing the progression of disease resulting from lack of behavior change. To motivate patients to change their lifestyle behaviors, providers detailed the consequences of excess weight, including predictions of severe complications and early demise. Even though the description of factual consequences as a weight loss counseling approach can induce fear and shame in some individuals, the application of “tough love” was considered acceptable if done for the right reasons.

However, these techniques are not always effective and can be detrimental as suggested at the American Psychology Association (APA) conference.⁴ At the 125th Annual Convention of the APA, Joan Chrisler asserted that fat shaming or sizism “is stressful and can cause patients to delay health care encounters or avoid interacting with providers.”⁴ After receiving weight loss advice, patients may delay seeking healthcare or avoid necessary

return visits when they feel judgment, rejection, or shame. Despite the best of intentions, the medical community may not be consistently inspiring patients to make lifestyle changes, so healthcare providers should consider using strategies that avoid the unintended consequences of weight loss counseling.

FACTORS INFLUENCING BODY MASS INDEX

There is an association between elevated BMI and health-related problems. Diseases related to weight gain include but are not limited to hypertension, diabetes mellitus, coronary artery disease, stroke, osteoarthritis, sleep apnea, gall bladder disease, hyperlipidemia, and fatty liver disease.^{5,6}

Multiple factors contribute to elevated BMI. For instance, food intake and physical activity can have a profound effect on weight and BMI. External physical environment also plays a significant role in predisposing people to obesity because of lack of access to parks, sidewalks, and supermarkets with healthy food.⁷ Other factors that increase obesity are lack of resources to join a gym, oversized serving portions, and food advertising that encourages increased caloric consumption and normalizes overeating.⁷⁻¹⁰ Furthermore, larger food portions habituate large caloric intake, and the direct consumer advertising of high sugar, high saturated fat foods increase awareness and temptation for these food that can adversely affect overall wellbeing and health. From the physician's viewpoint, societal pressures from food advertising that recommends unhealthy, sugary foods create a difficult battle when encouraging patients to follow healthy behaviors. This viewpoint is supported by the literature, which suggests that food, activity, environment, genetics, environmental stress, emotional factors, and poor sleep contribute to weight-related disease.¹⁰⁻¹² It is important to clarify with patients the limitation of using BMI to assess for healthy weight status. To get more comprehensive evaluation, physician can also follow waist circumference and body fat percentage.

While genetics, stress, emotions, and poor sleep quality can increase risk of obesity, research also suggests that race and social class are important contributing variables.¹³ For example, families may reside in an area without safe areas with parks or sidewalks, making physical activity difficult. Low socioeconomic status may make joining a gym or purchasing affordable healthy food unattainable. Poor access to affordable healthy food may lead to patients feeling incapable of eating for optimal health. Taken altogether, multiple and complex factors contribute to an individual's interactions with environment, body weight, and BMI.

PROVIDER STRATEGIES

Barriers can arise when dealing with obesity in the clinic. For instance, patients with unsuccessful attempts at losing or maintaining weight may develop mistrust of doctors and have poor adherence.¹³ Additionally, unintended stigmatization by physicians may result in increased patient shame of weight status, thus reducing the quality of care. As a result, discussing diet, exercise, and weight with patients can seem like walking through a minefield. However, studies show that education and training

in compassionate speech, slow incremental changes, a wellness approach, and motivational interviewing may help healthcare providers to provide the highest quality care for these patients.^{14,15} Because of social stigmas and personal self-esteem issues associated with weight status, physicians need to develop skills that compassionately encourage better health in these patients. Specifically, physicians can use holistic, osteopathic wellness strategies to help patients achieve optimal health without feeling shame (*Table 1*).

TABLE 1:

Strategies for Preventing Patient Perception or Interpretation of Fat Shaming

Optimal health, vitality, wellness, and prevention are more important goals than body size
Complete a full diagnostic workup regardless of weight
Avoid blame, shame, or guilt
Make office visits nonthreatening and comfortable
Use sensitivity in your word choices
Assess and address self-stigmatization like weight-bias internalization
Use the readiness assessment technique of the motivational interviewing paradigm
Offer patients an incentive agreement
Inform yourself and patients about treatment options and resources

Use Wellness and Prevention as Targeted Outcomes

Healthcare providers can reduce the focus on body weight or BMI as an endpoint and concentrate instead on screening for and preventing the diseases related to obesity. In this manner, the provider can present a wellness philosophy for all patients, regardless of weight, with a weight-inclusive approach that views health and wellness as multifaceted. From an osteopathic perspective, physicians can see the health in patients. Physicians could also inform patients about the metabolically healthy obesity. In one study, 30% of individuals with an overweight or obese BMI were determined to be metabolically healthy after completing cardiovascular factor evaluation.¹⁶ The distinguishing feature in these patients was regular physical exercise.¹⁶ This finding suggests that exercise may mitigate the cardiovascular risk factors associated with BMI elevation. Furthermore, the study found that 30% of normal weight individuals were metabolically unhealthy.¹⁶ In this context, an individual's BMI becomes a poor predictor of cardiovascular health. Thus, a high percentage of people with normal or low BMI are at risk of cardiovascular events. In fact, in a large prospective cohort study of Korean adults, a metabolically unhealthy risk profile contributed more to risk of death from cardiovascular disease and all causes than BMI alone.¹⁷

The use of a weight-inclusive approach to lifestyle medicine emphasizes the importance of wellbeing to all patients regardless of their weight. This positive focus on wellness may reduce discouraging conversations about weight or weight loss and increase the likelihood of behavior change and maintenance.

For instance, physicians could promote wellness behaviors that improve health by encouraging patients to focus on the multitude of health benefits of better nutrition, exercise, meditation, and mindfulness rather than focusing exclusively on weight loss.

To address prevention, physicians can assess and determine the patient's expectations, knowledge, and preconceptions. Once patients are aware of risks associated with certain behaviors, they can be informed about the impact of a healthy lifestyle to treat and prevent disease. Families of patients should also be educated about how reducing risk factors is a healthier goal than the number on the scale. Further, lifestyle activities can be determined with consideration of patient preferences within the context of what the physician deems most appropriate. Ultimately, healthcare providers need to work together with patients utilizing shared decision-making to set incremental lifestyle behavior changes and achievable goals toward the common purpose of optimal health and vitality.

Perform Consistent Diagnostic Evaluations

Obese patients can face obstacles when seeking medical care, such as being told that obesity is the cause of their concerns and weight loss is the only treatment. In the absence of a complete investigation, important considerations in the patient could be missed. For example, if a patient with an elevated BMI is complaining of knee pain, some physicians might attribute the condition to weight alone and fail to obtain x-rays. The patient might also be informed that weight loss is the only treatment for the knee pain. However, it is unfair and negligent to attribute a patient's pain to weight status without a proper workup, making obesity a diagnosis of exclusion. Patient evaluation should include the appropriate investigation even when elevated BMI, in theory, could possibly be the cause of the signs and symptoms.¹⁰

Avoid Assigning Blame

The world around us challenges our ability to maintain a healthy weight. As mentioned previously, multiple factors can contribute to obesity.¹⁸ Given these constant challenges, physicians can avoid assigning blame by acknowledging the difficulty of lifestyle changes and by not perpetuating the incorrect stereotype that obesity results from a lack of personal willpower. Physicians can also acknowledge and validate those patients who have tried to lose weight repeatedly and feel a sense of failure because of their lack of ability to lose weight. Furthermore, the process of behavior changes and health determinants can be used as the outcome goal rather than weight loss. Educating patients to set achievable short-term goals that emphasize small weight losses can improve compliance and sustainability. To encourage health improvements, physicians should validate patient worth outside of weight and body size.

Provide a Comfortable and Nonthreatening Office

To make office visits more comfortable, the office and waiting room suite should accommodate patients of all body habitus. For instance, armless chairs in the waiting room would be more comfortable for larger patients, and a range of gown sizes and medical equipment would be suitable for patients of varying sizes.

Although we do not advocate skipping the weight measurement at office visits, patients can be offered the option to not view their weight at every visit. This practice takes the focus off weight and instead emphasizes physical health and emotional wellness. In patients with weight-related anxiety, decreasing the emphasis on weight by not allowing them to see their weight or BMI during the visit can help them focus on optimal health and decrease anxiety.

Choose Words Carefully

A favorite question to open a discussion on weight management is to ask the patient, "How do you feel about your weight?" By using a kind word choice or tone, physicians may make a patient more open to discussing weight-related issues. One study showed a preference for the terms weight, BMI, weight problem, excess weight, unhealthy body weight, and unhealthy BMI and a distaste for the terms obesity, heaviness, large size, excess fat, and fatness (Table 2).¹⁴ By using open-ended questions and seeing failures as a normal part of the personal development process, physicians can empower patients to persevere when conditions are not ideal.

TABLE 2:

Terms/Verbage

PATIENT PREFERRED TERMS	PERCEIVED SHAMING TERMS
Weight	Obesity
BMI	Heaviness
Weight problems	Large size
Excess weight	Excess fat
Unhealthy body weight	Fatness
Unhealthy BMI	

As physicians, we should strive to be aware of our biases and overcome our preconceptions, effectively build rapport, and avoid having patients paradoxically terminate the provider relationship. When healthcare providers have obesity-related biases, patients may be perceived as lazy or unmotivated. In one study, the authors found that "More than 40% of physicians had a negative reaction towards obese patients, only 56% felt qualified to treat obesity, and 46% felt successful in this realm."¹⁹ In spite of our preconceptions, when words are chosen carefully, they can contribute to a more productive alliance with the patient.

Address Weight-Bias Internalization

External weight-based stigmatization is pervasive, but weight-bias internalization (WBI), self-directed fat shaming, and self-deprecation can also lead to self-harm and a poor cardiometabolic profile.¹⁵ In one study, individuals who self-stigmatized had an amplified cardiometabolic risk profile score when compared with individuals with obesity who did not have WBI.¹⁵ In addition, WBI has been associated with increased risk of eating disorders.¹⁵ Patients should be taught to not judge themselves and to de-emphasize failures. When WBI is noted in patients, physicians should encourage self-forgiveness and moving forward with the next task or goal.

Using this strategy, patients can be encouraged to adopt a proactive philosophy instead of reactive behavioral changes by anticipating failures and relapses as part of the weight loss process. Hence, patients should focus on proactive planning rather than depend on willpower alone. For instance, patients can be taught how to use meal planning and proactive eating when unplanned food is present. They should also be taught that WBI is a harmful response to weight gain and can have dire consequences. With proper identification, physicians can address and mitigate this maladaptive behavior quickly.

Utilize Motivational Interviewing Techniques

Another strategy to help patients with obesity and overweight status achieve better health is to consistently use the readiness assessment component of the motivational interviewing paradigm. Motivational interviewing uses guided questions that allow patients to verbalize their preferences for change. Instead of the usual direct instructions from physicians, patients are able to decide the best methods to motivate change and avoid ambivalence.²⁰ Because these communication strategies are patient-centered, patients seem more comfortable and less threatened by them. In contrast to simply informing patients of the consequences of weight gain, research suggests using motivational interviewing techniques for weight loss can have positive results.²¹ In a systematic review,²¹ more than a third of studies found participants using motivational interviewing for weight loss lost significantly more weight than controls. Other outcomes related to weight, such as physical activity, food intake, and metabolic measurements, also improved when participants using motivational interviewing were compared with controls.²¹ About half of the reviewed studies indicated that motivational interviewing helped participants lose 5% of their initial weight.²¹ Although more research is necessary to identify effective motivational interviewing strategies and approaches for weight loss, this technique can be used successfully by physicians (Table 3).²²

Another benefit of the use of motivational interviewing for weight loss is that it can be performed in the primary care clinic without having to refer to a weight loss specialist. Indeed, various members of the healthcare team can conduct the interview, giving the physician more time to focus on specific health concerns. Because motivational interviewing is an accessible and versatile technique, it may have benefits beyond the predicted loss of weight. For instance, this technique may be useful for effecting changes that help patients forego more invasive treatments, such as surgery. More physicians should use the interviewing techniques of motivational interviewing to improve health outcomes and patient adherence.

Offer Patients an Incentive Agreement

Patient empowerment and shared decision-making can help patients take accountability and pride in their compliance and self-care. As an example of an incentive agreement, the physician could agree to do a trial of decreasing or stopping a patient's medication for hypertension or lipids if the patient lost a specified amount of weight. Because many patients prefer to avoid

TABLE 3:

Sample Motivational Interviewing Questions for Patients with Abnormal Weight

MOTIVATIONAL QUESTIONS

How important is your health to you?
 How have you been doing with taking care of yourself?
 Have you been treating yourself well?
 What are the biggest barriers to taking care of yourself?
 What does self-care mean to you?
 What self-care activities would you like to do?
 On a scale from 1-10, how motivated do you feel to improve your health and vitality?
 How much of you is not wanting to change?
 What was your life like before you gained weight?
 What are your hopes for the future if you are able to become healthier?
 What kinds of small healthy changes do you think you could make this week?

REFLECTIVE LISTENING

You are thinking about losing weight but you are not sure if you are ready to take action right now. Would you be willing to talk about this again at our next visit?
 It sounds as if you are concerned about your weight and that you would like to start making some changes in your lifestyle.
 It is up to you to decide if and when you are ready to make lifestyle changes. I am here to support you.
 It can be hard to initiate changes in your life. I want to thank you for talking with me about this today.
 It is great that you feel good about your decision to make some lifestyle changes; you are taking important steps to improve your health.

medications for a plethora of reasons, this kind of incentive can be a powerful motivator.²³ Further, incentive agreements position the physician and patient as allies working toward achievement of a common goal.

Educate Yourself on Options and Resources

Finally, physicians should educate themselves on weight loss diets, weight loss medications, and bariatric surgery options so they are comfortable discussing these options with patients. Physicians should investigate the community resources that are available locally. With that knowledge, they can educate patients on available support and resources. For instance, some patients are not aware of the resources available to them, such as seeing a dietitian to help with weight loss concerns. Healthcare providers do not have unlimited time or knowledge, so referring complex issues, such as obesity, to other healthcare professionals may be best for the patient. Further, interprofessional collaborations may be very beneficial for the busy physician and the patient with multifaceted needs.

Another option is to discuss weight loss treatment options with the patient. Many patients are not aware of the newer weight loss medications that have better safety profiles than earlier

medications used for weight management.²⁴ Making patients aware of the newer medications may make them more willing to discuss weight loss because of the accessibility of novel options. Diet is a frequently discussed treatment, and most diets will lead to weight loss. It is important to choose one that fits the patient's needs and preferences and results in sustainable weight loss in the long term. Weight Watchers is the longest existing successful support and nutrition-based weight loss program,²⁵ and it has affordable online options.

Another way to help patients is to develop a self-care plan using the wellness wheel and the eight dimensions of wellness developed by the Substance Abuse and Mental Health Services Administration.²⁶ Explain to patients the importance and meaning of healthy lifestyle from a wellness perspective in the eight dimensions including emotional, environmental, financial, intellectual, occupational, physical, social and spiritual. Patient education regarding healthy lifestyle should include the comprehensive perspective towards nutrition, physical movement, mindfulness with a self-care focus. Self-care seems to be a growing reform in the healthcare community. Therefore, physicians should empower patients to take the lead in their care, set incremental goals, maintain a positive attitude, and encourage them to identify social and community support systems. In this manner, self-compassion assessment and training may be useful tools to support this empowerment and provide stories of hope and inspiration.²⁶ Communication in an open, shared decision-making paradigm can encourage patients to prioritize self-care, develop perseverance, and maintain resilience during the challenging task of weight loss to achieve optimal health and vitality.

CONCLUSION

There are many ways we can help our patients lose weight and achieve better health without adding shame. Using the strategies described above, healthcare providers should be able to effectively communicate their concerns to patients without the patients feeling bullied, threatened, or shamed. Hopefully in the future, patients will believe that when their physician discusses weight with them it is because the physician cares about their health. The physician is not fat shaming them; the physician is just doing her job.

ACKNOWLEDGMENTS

The authors thank Deborah Goggin, MA, ELS, scientific writer, from A. T. Still University and Susan Steffans, DO, assistant professor, Aaron Allgood, DO, chair and associate professor, and Kelli Glaser, DO, associate professor, from A.T. Still University's School of Osteopathic Medicine in Arizona.

AUTHOR DISCLOSURES:

No relevant financial affiliations

REFERENCES:

1. Anonymous (Karyn S), Mackenzie M. I was fat shamed by my doctor and now I'm hesitant to go back. *Shape*. August 15, 2017. <https://www.shape.com/lifestyle/mind-and-body/i-was-fat-shamed-my-doctor>. Accessed July 15, 2018.
2. Macmillan A. Fat-shaming by doctors happens way more often than you think. *Health*. August 4, 2017. <https://www.health.com/obesity/fat-shaming-by-doctors>. Accessed July 15, 2018.
3. Weiss S. It's not OK if your doctor is fat-shaming you. *Glamour*. October 9, 2017. <https://www.glamour.com/story/its-not-ok-if-your-doctor-is-fat-shaming-you>. Accessed July 15, 2018.
4. Fat shaming in the doctor's office can be mentally and physically harmful. American Psychological Association Web site. www.apa.org/news/press/releases/2017/08/fat-shaming.aspx. Published August 3, 2017. Accessed July 11, 2018.
5. Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA*. 1999;282(16):1523-1529. <https://jamanetwork.com/journals/jama/fullarticle/192030>.
6. Aune D, Sen A, Prasad M, et al. BMI and all cause mortality: systematic review and non-linear dose-response meta-analysis of 230 cohort studies with 3.74 million deaths among 30.3 million participants *BMJ*. 2016;353:i2156. <https://www.bmj.com/content/353/bmj.i2156.long>.
7. Jung CH, Lee WJ, Song KH. Metabolically healthy obesity: a friend or foe? *Korean J Intern Med*. 2017;32(4):611-621. <http://kjm.org/journal/view.php?doi=10.3904/kjm.2016.259>.
8. Stefan N, Häring HU, Hu FB, Schulze MB. Metabolically healthy obesity: epidemiology, mechanisms, and clinical implications. *Lancet Diabetes Endocrinol*. 2013;1(2):152-162. <https://www.clinicalkey.com#!/content/playContent/1-s2.0-S2213858713700627?returnurl=https%2F%2Flinkingub.elsevier.com%2Fretrieve%2Fpii%2FS2213858713700627%3Fshowall%3Dtrue&referrer=https%2F%2Fwww.ncbi.nlm.nih.gov%2F>.
9. Samocha-Bonet D, Dixit VD, Kahn CR, et al. Metabolically healthy and unhealthy obese: the 2013 Stock Conference report. *Obes Rev*. 2014;15(9):697-708. <https://onlinelibrary.wiley.com/doi/full/10.1111/obr.12199>.
10. Holtcamp W. Obesogens: an environmental link to obesity. *Environ Health Perspect*. 2012;120(2):a62-a68. <https://ehp.niehs.nih.gov/120-a62/>.
11. Overweight and obesity. National Heart, Lung, and Blood Institute Web site. <https://www.nhlbi.nih.gov/health-topics/overweight-and-obesity>. Accessed July 11, 2018.
12. Adult obesity causes and consequences. Centers for Disease Control and Prevention Web site. <https://www.cdc.gov/obesity/adult/causes.html>. Updated March 5, 2018. Accessed July 11, 2018.
13. Phelan SM, Burgess DJ, Yeazel MW, Hellerstedt WL, Griffin JM, van Ryn M. Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. *Obes Rev*. 2015;16(4):319-326. <https://onlinelibrary.wiley.com/doi/full/10.1111/obr.12266>.
14. Volger S, Vetter ML, Dougherty M, et al. Patients' preferred terms for describing their excess weight: discussing obesity in clinical practice. *Obesity (Silver Spring)*. 2012;20(1):147-150. <https://onlinelibrary.wiley.com/doi/full/10.1038/oby.2011.217>.
15. Pearl RL, Wadden TA, Hopkins CM, et al. Association between weight bias internalization and metabolic syndrome among treatment-seeking individuals with obesity. *Obesity (Silver Spring)*. 2017;25(2):317-322. <https://onlinelibrary.wiley.com/doi/full/10.1002/oby.21716>.

16. Roberson LL, Aneni EC, Maziak W, et al. Beyond BMI: the "metabolically healthy obese" phenotype and its association with clinical/subclinical cardiovascular disease and all-cause mortality—a systematic review. *BMC Public Health*. 2014;14:14. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-14>
17. Yang HK, Han K, Kwon HS, et al. Obesity, metabolic health, and mortality in adults: a nationwide population-based study in Korea. *Sci Rep*. 2016;6:30329. <https://www.nature.com/articles/srep30329>.
18. What causes obesity and overweight? National Institute of Child Health and Human Development Web site. <https://www.nichd.nih.gov/health/topics/obesity/conditioninfo/cause>. Accessed July 17, 2018.
19. Jay M, Kalet A, Ark T, et al. Physicians' attitudes about obesity and their associations with competency and specialty: a cross-sectional study. *BMC Health Serv Res*. 2009;9:106. <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-9-106>.
20. Bickley LS. *Bates' Guide to Physical Examination and History Taking*. 9th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2007:72-73.
21. Barnes RD, Ivezaj V. A systematic review of motivational interviewing for weight loss among adults in primary care. *Obes Rev*. 2015;16(4):304-318. <https://onlinelibrary.wiley.com/doi/full/10.1111/obr.12264>.
22. Motivational interviewing for diet, exercise and weight. UConn Rudd Center for Food Policy and Obesity Web site. www.uconnruddcenter.org/files/Pdfs/MotivationalInterviewing.pdf. Accessed July 11, 2018.
23. Dorte Ejg Jarbøl, Pia Veldt Larsen, Dorte Gyrd-Hansen, Jens Søndergaard, Carl Brandt, Anja Leppin, Benedicte Lind Barfoed, Jesper Bo Nielsen. Determinants of preferences for lifestyle changes versus medication and beliefs in ability to maintain lifestyle changes. A population-based survey. *Prev Med Rep*. 2017 Jun; 6: 66–73. Published online 2017 Feb 16. doi: 10.1016/j.pmedr.2017.02.010. PMID: PMC5331161
24. Kim GW, Lin JE, Blomain ES, Waldman SA. Antiobesity pharmacotherapy: new drugs and emerging targets. *Clin Pharmacol Ther*. 2014;95(1):53-66. <https://ascpt.onlinelibrary.wiley.com/doi/10.1038/clpt.2013.204>.
25. Gudzone KA, Doshi RS, Mehta AK, et al. Efficacy of commercial weight-loss programs: an updated systematic review. *Ann Intern Med*. 2015;162(7):501-512. <http://annals.org/aim/article-abstract/2214178/efficacy-commercial-weight-loss-programs-updated-systematic-review?doi=10.7326%2fM14-2238>.
26. The eight dimensions of wellness. Substance Abuse and Mental Health Services Administration Web site. www.samhsa.gov/wellness-initiative/eight-dimensions-wellness. Updated October 24, 2017. Accessed July 11, 2018.