Obesity and the healthcare professions: cooperation or assimilation?

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Abstract

Obesity is an epidemic in developed countries. Its ramifications range from cardiovascular disease to cancer to musculo-skeletal disorders. The causes of obesity are not solely biological, as the brief time frame toward the current epidemic has been insufficient to allow for adequate alterations in the gene pool. It has been estimated that variation in body fat is approximately 25% genetic (Bouchard 1998), with 45% of the remaining variance explained by lifestyle factors. Additionally, in the United States, an ageing population of "baby boomers" will compound the need for chronic disease prevention and treatment. No single health discipline/profession can solve the growing obesity-chronic disease problem. Thus, there is a need for "intellectual civility" (Boone 2002) among the individuals and the governing bodies of central paramedical professions such as nutrition, exercise physiology and physical therapy. Unfortunately, overlapping scopes of practice can lead to legal contests and an expanding number of certifications that could leave the increasingly at-risk overweight public with inferior care when evidence-based interventions and standardized referral are needed. This presentation will address examples of scope-of-practice competition (attempts at "assimilation"), and collaboration and submit referral guidelines for discussion.

Introduction

Obesity is currently an epidemic among Westernized cultures and is experienced by a variety of their subpopulations. In fact, only sub-Saharan Africa is reportedly free of the obesity pandemic (American Heart Association 2005). Resulting health consequences are well described and include elevated risk for diseases, both chronic and acute, that are leading causes of mortality such as high blood pressure, high blood cholesterol, type 2 diabetes, coronary heart disease, and other health problems (National Institutes of Health 1998). There is a decrease in quality of life and decreased lifespan among the obese (Haomiao and Lubetkin 2005; American Heart Association 2005). In the United States (U.S.) the incidence of obesity among children has risen to 30% and the percentage of overweight and obese adults is "growing unabated", presently at 60% (McInnis et al. 2003; Schwarzenberg 2005). As of 1998, the total costs attributable to obesity-related disease approached $100 billion annually in the United States (National Institutes of Health 1998). Similarly in Great Britain, overweight and obese persons comprise approximately two-thirds of the adult population, while obesity has risen from 9.9% to 13.7% among young British children since 1995 (Cole 2006; British House of Commons Health Committee 2004). Associated costs are conservatively set at 6.6-7.4 billion [pounds sterling]. (British House of Commons Health Committee 2004) One British report (Mayor 2005) suggests a need for a national obesity institute or nutrition council to enhance coordination among different stakeholder groups to reduce the problem effectively. Further, this report urged the government to mount a "sustained and consistent" public education campaign. Logistical issues and inconsistency also appear to affect the U.S., where the responsibility rests more on the individual and his or her healthcare provider (Jain 2004).

Despite a general agreement among healthcare authorities that obesity is a serious and widespread problem, there remains an element of competitiveness in the U.S. regarding who should play a central role in treating it. The purpose of this paper is to describe the various professions addressing obesity in the U.S. and their additive benefits to patients and clients (cooperation). Further, health professions' overlapping scopes of practice and examples of contention at the legal, organizational and practitioner levels (assimilation) will be presented to invite discussion about how to best coordinate anti-obesity efforts. Existing guidelines and partnerships face challenges because the different states in the U.S. regulate healthcare professions differently.

Obesity is a multi-factorial condition and includes genetic, lifestyle and socio-cultural factors (Bouchard 1998). The prevention and treatment of obesity optimally focuses on behavioral interventions from a variety of health practitioners because energy balance (kilojoules consumed versus kilojoules expended) is a broad physical reality that remains a widely-accepted determinant of body weight. Indeed, lifestyle issues appear to play a larger role than do genetic influences (Bouchard 1998). Thus, healthcare professionals can play a meaningful role in prevention as well as in treatment of obesity. Perhaps more importantly, energy balance is not the only addressable determinant of obesity; human biology can adapt to its environment. Changes in macronutrient profile and timing alter metabolism and aspects of health (Krieger et al. 2006; Luscombe-Marsh et al. 2005; Smith 2002a; Smith 2002b; Zderic et al. 2004). Further, changes in physical activity alter metabolism and the physical structure of the body on multiple levels. Thus, changed structure and function can lead to health changes beyond a simple energy balance perspective.

Questions remain, however, as to which health professionals, if any, are most central (or cost effective) regarding obesity prevention and treatment. How will these professionals interact? Is certification in obesity or weight management adequate or should referral guidelines be developed and updated regularly? Can inter-organizational coordination efforts lead to broad, effective changes in education and healthcare delivery? This paper will highlight select professionals' roles on an obesity healthcare team and how they might work together rather than compete as is currently happening in the U.S. Examples of legal, organizational and practitioner-level competitiveness and a model for collaboration in the U.S. will be included, after which referral guidelines will be offered for discussion.

Treating Energy Balance

Addressing Energy Restriction

Energy restriction through dietary counseling and behavioral change is one approach to encouraging a negative energy balance (negative energy status). Short term weight loss via energy restriction and portion size reduction is widely recognized. Hunger, lean tissue loss and body mass-preserving endocrine factors, however, have led to an acknowledgement that dietary restriction alone is ineffective for substantial, long term weight reduction (American Dietetic Association 2002; Hill and Wyatt 2005; Pavlou et al. 1989; Taylor et al. 2004). In the President's Lecture on "globesity" at the 2005 American Dietetics Association (ADA) annual meeting, panelist James Hill suggested that the battle against obesity should be fought not with calorie restriction but with physical activity; he then went on to suggest that a strategy that relies on food restriction is doomed to fail (American Dietetic Association 2005). Beyond total energy intake, macronutrient changes are an ongoing source of debate regarding weight control. That is, some question remains as to whether it is best to focus upon reducing total carbohydrate or total fat intake; sources and subtypes of each macronutrient further complicate the issue. Public confusion surrounding fat and carbohydrate is not improved by the mixed messages from corporate media efforts.

This is not to suggest that small, enjoyable changes in food choices cannot help sway energy balance to the mildly negative side. Acceptable dietary changes such as eating a higher-fiber and/or portable breakfast, avoiding soft drinks, consuming low-fat dairy and fruit, and preventing Holiday weight gain (with special consideration for religious customs) could address common lifestyle pitfalls (Bellisle et al. 1995; Davies et al. 1986; Drapeau et al. 2004; Farshchi et al. 2005; James and Kerr 2005; Jenkins et al. 2002; Shemilt et al. 2000; Siega-Riz et al. 2000; Smith 2002a; Smith 2002b; Sweeny and Horishita 2005; Yanovski et al. 2000). Other suggestions beyond food restriction have been made by Taylor, et al. (2004) and should be considered in light of the well-known inability of energy restriction to induce long-term weight loss in most patients. Of course, even small behaviorally acceptable changes require consideration of each patient's needs and thus should include a full nutrition assessment with by a dietitian.

Addressing Energy Expenditure

Conversely to energy restriction, manipulation of energy expenditure affects body weight. Although gross weight changes are often modest, exercise has been proposed to be effective for body weight control and /or improvement in health status (American College of Sports Medicine 2001; American Dietetic Association 2005; Pavlou et al. 1989; Ross et al. 2000). Similar to the manipulation of food type as well as food quantity, physical activity interventions can focus on both the type (mode) of exercise as well as the total kilojoule output it creates. For example, resistance training increases the fat free mass of the body, elevating resting metabolic rate (McClave and Snider 2001) while aerobic exercise is valuable for increasing energy expenditure during a session. Further, increased capillarization of tissues and increased mitochondrial density are widely accepted benefits that allow for superior fat oxidation. Further still, enhanced function of glucose transporters and vasodilation in skeletal muscle improve glucose tolerance and/or insulin action (Ivy 1997). Although less directly related to energy expenditure, improved fat oxidation and glucose tolerance are welcome adaptations to many obese individuals. Finally, the American College of Sports Medicine (1998) recognizes the need for a well-rounded combination of resistance training and cardiovascular endurance training. Legitimate exercise prescription carefully addresses the mode of exercise. Client or patient barriers such as daily schedules should also be considered (Neumark-Sztainer et al. 2003). A difficulty with acquiring appropriate exercise prescription and readiness assessment in the U.S., however, is that hundreds of certifications crowd and "dilute" the standardization of the exercise science profession; that is, vastly differing requirements prevent standardized quality care.

Who Should Coordinate the Approaches?

Physician

An initial reaction to the question of multidisciplinary coordination may be to answer "physician". However, there are problems with this approach. First, the existing nature of physician-led medical care for weight management and chronic disease is not working from an epidemiological perspective. The prevalence of obesity is clearly rising in many populations, as are a decline in physical activity and unbalanced food choices (American Heart Association 2005; Sanders 2000; Lindstrom et al. 2003). A physician cannot simultaneously specialize in (or devote the time to) exercise physiology, dietetics, physical therapy, psychology and other supportive professions. Chronic diseases, often related to obesity, have been reported to require an estimated 20 additional minutes per physician visit that often are not offered (Martin et al. 1999). This is especially problematic considering that an estimated 70% of physician appointments involve chronic disease (Veale 2003). Further, according to Flock and colleagues (2005), outpatient advice in family medicine settings rarely includes components that could lead to healthy behavior changes.

A physician remains important to obesity management however (McInnis et al. 2003; Rippe et al. 2001). As indirect evidence, a traditional team of physicians, nurses and social workers has been reported to achieve fewer physician visits and cost savings when cooperatively treating chronic disease (Sommers et al. 2000). A more collaborative approach rather than the addition of exercise or dietetic professionals hallmarked this study. The results were accompanied by only mixed self-reports of better health among patients, however, and were not obesity-specific (Sommers et al. 2000). In more direct obesity research, a "meaningful" weight loss among 33% of participants has been achieved using a primary care team led by nurses and facilitated by dietitians (McQuigg et al. 2005). Physicians are important because they provide the necessary medical training, diagnostic and prescriptive ability to address morbidity beyond the scope of other practitioners. For such reasons, published obesity recommendations do include the physician along with other recognized healthcare professionals (Barlow and Dietz 1998). Collectively these findings

suggest that different mixtures of personnel can each achieve some success when changing from a traditional medical approach. Whether a group of traditional medical personnel are best educated to handle exercise issues is another matter.

In light of the escalating obesity epidemic, traditional Western medical approaches common to the U.S. are failing the obese public. Whether the problem lies in the non-specific education of doctors, nurses and social workers or the problem is mostly a time and money issue, changes should be made. The need for a multi-disciplinary team's treatment interventions is described in the Wagner Chronic Care Model (Wagner et al. 2001), and the Weight Management position paper of the American Dietetic Association (ADA), which emphasizes exercise treatment (American Dietetic Association 2002).

Dietitian

The registered dietitian (RD) is the recognized professional of choice regarding food and nutrition. These professionals have standardized curricula, experience, standards of practice, and a national examination, along with a unified public and governmental message that is supported by licensure in most U.S. states. Although long term weight management via energy restriction is widely recognized to have a poor success rate, there are nonetheless numerous dietary approaches that can improve the health of obese patients and clients. An altered macronutrient profile, attention to glycemic index, choice of dietary fat subtypes, daily and seasonal nutrient timing, scheduling, and other possibilities help tailor an acceptable nutrition message to the obese client (Davies et al. 1986; Drapeau et al. 2004; Farshchi et al. 2005; James and Kerr 2005; Jenkins et al. 2002; Shemilt et al. 2000; Siega-Riz et al. 2000; Smith 2002a; Smith 2002b; Sweeny and Horishita 2005; Yanovski et al. 2000). Dietitians are ideal health professionals to address the intake aspects of energy balance as described previously.

Exercise Physiologist

Only one of 50 states in the U.S. (Louisiana) enforces Exercise Physiology licensure (Louisiana State Board of Medical Examiners 1995) and thus elsewhere exercise treatment is either handled without physician supervision or divided among dietitians, physical therapists and/ or personal trainers, none of which are optimally trained in preventative exercise prescription, adaptations and/ or related aspects of weight management. Unfortunately, the exclusive organization for the Exercise Physiology profession, the American Society of Exercise Physiologists, is small in comparison to the deluge of non-specific certifying organizations and fitness-related groups (American Society of Exercise Physiologists 2004). A common practice when a Board--certified Exercise Physiologist (EPC) is unavailable in the U.S., or when the EPC is unrecognized by a healthcare provider, is to refer to a dietitian, physical therapist or other licensed professional to handle "physical activity" (as opposed to purposeful exercise, per se) as best as possible. Or a member of a healthcare team may make an informal "referral" to a familiar person holding an American College of Sports Medicine or National Strength and Conditioning Association certificate. In the context of other licensed professions, the lack of exercise physiology licensure (regulation) in the U.S., however, remains an obstacle for formal referrals to legally competent individuals.

Currently over 300 fitness certifications dilute the exercise profession in the United States, with only one state, Louisiana, enforcing exercise physiology licensure (American Society of Exercise Physiologists 2004). The lack of government regulation for exercise professionals, in an increasingly fragmented and privatized medical system (Dorr et al. 2006) could create public confusion regarding who to trust for this essential aspect of obesity management. Licensure acquisition is unlikely in states such as Ohio where existing health profession licensure, such as that of dietetics, already has opposition (Buckeye Institute of Public Policy 2003). In Australia, consumers trust physicians and dietitians for exercise advice (Schofield et al. 2005). However, physicians and nurses lack optimal education in exercise physiology (as well as optimal physician time per patient encounter [Martin et al. 1999]). Dietitians in the U.S. take a single

exercise-specific course, leaving a need for further certification (Sports Cardiovascular and Wellness Nutritionists 2006). Thus, such trust in the U.S. would still necessitate appropriate referral. Unfortunately, the ADA position paper on weight management does not describe who an "exercise physiologist" is or how or when to make a formal referral to one (American Dietetic Association 2002). Poorly described definitions and under-developed referral guidelines are problematic because a growing body of literature now validates describing the multiple health benefits (beyond weight loss) obtainable via appropriate exercise for obese individuals (Gaesser 1999; Jeffery et al. 2003; Lee et al. 2005; Ross et al. 2000; Shephard 1985).

University accreditation, nationwide examination and board certification, such as that initiated by ASEP, mirrors existing licensed professions. Similar efforts are now being implemented among other, larger exercise-related organizations such as the American College of Sports Medicine (ACSM). Although a non-exclusive organization, the ACSM has the size and organizational partnerships to aid ASEP in unified credentialing efforts. The necessity of appropriate, recognized exercise prescription for obese patients and clients will require cooperation and competency-standardization across the profession.

Physical Therapist

Although historically focused upon rehabilitation, the American Physical Therapy Association (APTA) has become increasingly focused upon the growing wellness market (US Dept Labor, 2006a; US Dept Labor, 2006b). Bills incorporating wellness and prevention as part of a legally-recognized scope of practice have been introduced into state legislatures in Indiana (1) and California. (2) Although exclusivity in treating preventative issues is not explicitly described in these bills, the unregulated exercise profession would in effect be assimilated by default (Birnbaum 2004).That is, physical therapists are legally recognized, insurance-reimbursable professionals whereas, despite specific training, exercise physiologists are not; this leaves the latter out of a legally-recognized healthcare (obesity) team. How such a bill would impact dietitians is less clear.

In summary, the multi-factorial nature of obesity and related chronic diseases are not being well managed by the traditional acute care model and the at-times competitive nature of various healthcare specialists. The dramatic rise in obesity of 61% since 1991 in the United States, the lack of successful intervention outcomes (Taylor et al. 2004) and its associated costs (British House of Commons Health Committee 2004; National Institutes of Health 1998; American Heart Association 2005) suggest some aspect of prevention and treatment is not working. Apparently, there are many contributing factors to inadequate obesity intervention.

The literature suggests that the current healthcare system and strategies incorporated in the care of chronic disease (including obesity) appear to be misdirected. Most chronic diseases are diagnosed and/or eventually treated in health care settings. However, the management of chronic diseases is generally sub-optimal in health care settings because of a variety of historical, structural, and economic factors. The traditional approach has been to provide care when a medical problem arises. Current treatment approaches utilize modalities appropriate for acute illness rather than chronic illness. This acute care focus lacks the critical preventative interventions that can save health care dollars and greatly increase quality of life. Approaches are reactive rather than proactive (Holman and Lorig 2004). Health care neglects to adequately arm patients with sufficient self-management skills and lacks effective employment of a division of labor among clinicians. Ancillary healthcare services, such as nutrition and exercise specialists, are underutilized where they otherwise would more effectively contribute to positive patient outcomes (Holman and Lorig 2004).

Competitive Healthcare Practice in Obesity Management

Although a large number of initiatives exist that are attempting to deal with obesity in a cooperative way (American Heart Association 2005), competition at multiple levels still exists. Competition does not facilitate a unified message to the public or necessarily improve obesity interventions. Legal examples of scope-of-practice contests include the two aforementioned bills proposed in Indiana (Senate Bill-360 2004) and California (Senate Bill-1485 2005) that sought to expand the physical therapy scope of practice to include fitness and wellness. Similar attempts to change Medicaid/ Medicare language3 were condemned by a coalition of non-physical therapist exercise-related professionals because the changes would exclude these professionals from reimbursement when working incident to a physician (Wattles 2004). Likewise, national organizations are annexing the responsibilities and/ or competencies of other professions into their own scopes of practice, certifications and position papers (American Dietetic Association 2006; American Society Exercise Physiologists 2006; Commission on Dietetics Registration 2006; International Society of Sports Nutrition 2005; International Society of Sports Nutrition 2006; Sports Cardiovascular and Wellness Nutritionists 2006). Finally, practitioner level public commentary can at times be almost contemptuous such as that published in an ASEP professional journal: "I am mad. I have spent 10 years educating myself and acquiring experience in a field where I am viewed lower in the healthcare field than a physical therapist assistant. LPNs command a higher salary than I do and RNs with not a stitch of education or training in the study of Exercise Physiology are taking over my field. I have had it and I will not take this lying down ... The people that are sitting on the sidelines are just as guilty as the people that are crucifying our field."(Wattles, M., 2002)[unpaginated electronic publication] Or that highlighted in an Ohio Dietetic Association conference flyer: "The time is right for nutrition professionals to branch into areas of overall wellness. This session will describe the role of the dietitian in taking on or back what should have been ours to begin with."(Lakhi, K., 2006)[unpaginated promotional flyer] If the goal of healthcare organizations is indeed to protect the public rather than their own members, such contests and attitudes should be replaced with cooperative, multi-disciplinary plans such as state or national referral guidelines.

Collaborative Healthcare Practice in Obesity Management

The severity and prevalence of the obesity epidemic call for a new paradigm in healthcare. Approaches are needed that offer solutions in which health professionals deliver collaborative, evidence-based and effective interventions. The most recognized approach for improving care is the Wagner Chronic Care Model (CCM) (Wagner et al. 2001). This approach provides a framework that aims to improve patient outcomes and emphasizes informed, active patients and prepared, proactive healthcare teams (Bodenheimer et al. 2002a; Bodenheimer et al. 2002b). The Chronic Care Disease Model (Wagner et al. 2001) provides a functional blueprint and a set of organizational principles for basic changes to the structure and delivery of chronic disease healthcare. Key components of the model include patient-centeredness, decision support, a mix of case-management and population management, and the systematic use of multidisciplinary teams of physicians, nurses, and other health professionals that collaborate with patients in their efforts to manage chronic problems over time (Bodenheimer et al. 2002a; Bodenheimer et al. 2002b). The principles of the chronic disease care model are designed to improve clinical outcomes and decrease aggregate health care costs for patients with common chronic diseases. These principles stress greater reliance on 1) community resources and policies; 2) health system redesign; 3) patient self-management support; 4) clinical decision support; and 5) clinical information systems to facilitate productive interactions between each informed, activated patient and a prepared, proactive practice team.

Advocates of improved chronic illness care seek basic changes in healthcare organizations, including reorienting the system away from symptom-driven interventions, and providing training to support healthcare provider-patient partnerships that will produce a collaborative care process (Glasgow et al. 2001). These models ultimately aim to promote patient-focused care providing patients with the knowledge, resources and support to manage their own disease (Bodenheimer et al 2002a; Bodenheimer

et al. 2002b). The Wagner CCM proposes an interdisciplinary healthcare team approach that recognizes the need for community support in the form of policies, service and resource development; high quality health care with incentives; education provision, emotional support, and strategies to promote patient self-management; healthcare team division of labor with planned management; routine monitoring and follow-up; evidence-based care aided by standards and guidelines; and effective clinical information services for data management (Blackburn 2005). The ultimate vision of the CCM represents a new chronic disease intervention paradigm--that of the patient-professional partnership which has the patient at the center of care supported by a prepared, proactive, collaborative and effective healthcare practice team (Bodenheimer et al. 2002; Bodenheimer et al. 2002b).

Conclusion

Despite legal maneuvering, an increasingly fragmented and privatized healthcare system in the U.S. and a certain level of practitioner-level defensiveness over scope-of-practice, the multidisciplinary nature of obesity requires coordination among health professionals. Alliances at the organizational level could serve to enhance intellectual (professional) civility and reduce public confusion by offering more consistent messages regarding who can be trusted to help manage obesity. A patient-centric focus with scheduled follow-ups, even via Internet at times (Holman and Lorig 2004; Smith, S. 2002), is emerging as an alternative to largely ineffectual acute care medicine.

A multi-disciplinary team comprised of: MD, RD, EP, RN, social worker and/ or PT (or international equivalents) could be cost-prohibitive but as-needed referrals could limit unnecessary services. Given the competency and ethical issues surrounding certifications as a replacement for a university-trained professional, referral guidelines should be continually developed. Referral guidelines regarding obesity and its co-morbidities may include the following:

1. Regardless of point of healthcare entry, referral to a physician (Medical Doctor, Doctor of Osteopathy or international equivalent) should be made when established screening criteria suggest it (e.g. PAR-Q questionnaire [Canadian Society of Exercise Physiology 2002], American Association of family Physicians Determine Nutrition Screening [Nutrition Screening Initiative 2006], patient report of symptoms).

2. Assessment of dietary readiness-to-change and other aspects of a comprehensive nutrition assessment (e.g. dietary, medical, socio-economic histories) call for Registered Dietitian (RD or international equivalent) referral as does a need for any meal planning or consultation beyond energy balance or general scientific information.

3. Referral to an Exercise Physiologist, Certified (EPC or international equivalent) should be made to ascertain exercise readiness and potential barriers, exercise-related health screening, and fitness assessment and prescription (frequency, intensity, duration and type). Any personal trainers, instructors or "exercise professionals" working incident to the EPC may also prove valuable.

4. Referral to other health professionals during medical, dietary and exercise treatments should be made when those treatments require attention beyond the professional's specific scope of practice or time constrains (e.g. nurse, physical therapist, social worker, psychologist).

Cooperation among governing bodies could be a means to enhance public awareness, an important first step in treatment (American Dietetic Association 2005). Simple messages could be built into public infrastructure such as: "eat breakfast" (shown to decrease daily kcal by the suggested 100 per day [American Dietetic Association 2005; Farshchi et al. 2005]); "seek Holiday Season counseling and information" (a time of risk for annual weight gain [Yanovski et al. 2000]); "wear a pedometer, make

time for fun resistance training activities and get social with these habits if you find it helpful" (suggested to improve weight maintenance and offer benefits beyond gross weight loss as well as helping compliance in inclined individuals [American Dietetic Association 2005; American College of Sports Medicine 2001]). Harmonious public messages, a smooth coordination of a multi-disciplinary team, and ongoing patient-centric interventions could become effective for both the prevention and the treatment of obesity. And considering that there is roughly a two-thirds chance that any person reading this paper is overweight, any change in the current system is worthy of discussion.

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