

Obesity and Disability: A Paradigm Shift in Workers' Compensation Rehabilitation

Chad J. Betters, PhD, CRC, CDMS, CVE

Abstract

Obesity has become a major public health concern in the United States. This epidemic has also become an occupational and long-term health problem as well. Although the obesity associated risk for mortality has diminished, obesity associated disability is on the rise, which is greatly increasing work-disability and health care needs. There is also an impact on Workers' Compensation rehabilitation, as recent literature has also identified the relationship between obesity and work-related injury, as well as how this dynamic can promote challenges to vocational rehabilitation services. This article will discuss the literature addressing the obesity paradigm shift and how it will specifically effect Workers' Compensation rehabilitation and the future care needs of obese individuals.

The Obesity Epidemic

Obesity is easily recognized as a major public health concern in the United States (Alley & Chang, 2007; Burton, Glen, Schultz, & Edington, 1998; Caban, Lee, Fleming, Gomez-Martin, LeBlanc, & Pittman, 2005; Chenoweth, 2005; Finkelstein, Fiebelkorn, & Wang, 2005; Gregg & Guralink, 2007; Schulte, Wagner, Ostry, Bianciforti, Cutlip, Krajnak, Luster, Munson, O'Callaghan, Parks, Simeonova, & Miller, 2007; Tucker & Friedman, 1998). Currently one out of every three Americans is either obese, or at risk of becoming obese (Caban et al., 2005; Thompson, Edelsberg, Kinsey, & Oster, 2008). According to the Centers for Disease Control and Prevention (CDC, 2007), approximately 15% or more of each state's population is currently overweight. Three states (Alabama, Mississippi, and Tennessee) report over 30% of their population is presently overweight. These figures are significantly different from just ten years prior, when the majority of the states' populations reported less than 10% as overweight, and not one single state exceeded 20% (CDC).

Fortunately, even though the prevalence of obesity has steadily risen, the risk for obesity-related mortality has actually decreased in the past several years (Alley & Chang, 2007; Caban et al., 2005; Gregg & Guralink, 2007; Must, Spandano, Coakley, Field, Colditz, & Dietz, 1999). This is mainly attributed to modern medical technology, including emergency life-saving procedures, as well as pharmacological treatment to alleviate the fatal consequences associated with excessive bodyweight. The decline in obesity-related mortality can also be credited to a better conception of the obesity dynamic, as recent research has established a new understanding of the obesity-health interrelationship. Several paradoxes have emerged, which have dispelled former beliefs of the correlation between body weight and risk of mortality. The first concept, the "Classic Obesity Paradox," argues that obesity, for select populations, does not increase the likelihood of mortality, but in fact serves as a protective agent (Oreopoulos, Padwal, Kalantar-Zadeh, Fonarow, Norris, & McAlister, 2008; Romero-Corral, Montori, Somers, Korinek, Thomas, Allison, Mookadam, & Lopez-Jimenez, 2006). The select

population mostly identified by research examining this paradox is the elderly population, as findings suggest that individuals with slightly elevated body mass index (BMI) scores actually live longer than those with deemed “desirable,” or even low BMI scores (Oreopoulos et al., 2008; Romero-Corral et al., 2006). A second paradox, coined the “Fat But Fit Paradox,” identifies cardiovascular fitness level, not bodyweight or BMI, as the true indicator of mortality risk (McAuley, Pittsley, Myers, Abella, & Froelicher, 2009). Research findings suggest that regardless of BMI, individuals who have higher levels of cardiovascular fitness are reporting decreased mortality rates.

The Obesity Paradigm Shift

The obesity literature has routinely addressed the significant change in obesity-related mortality, and has highlighted the positive outcomes of biomedical research related to body weight. However, the recent literature is slowly beginning to reflect the current paradigm shift that is underway within the world of obesity (Alley & Chang, 2007; Gregg & Guralink, 2007; Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). This shift stipulates that obesity, although still a valid concern for mortality, is now becoming a greater risk factor for morbidity, specifically disability conditions (Alley & Chang, 2007; Ogden et al., 2006).

Recent research (Alley & Chang, 2007; Gregg & Guralink, 2007; Ogden et al., 2006) has argued that obesity is increasing the prevalence of functional impairment and disability at an alarming rate. As the population for individuals who are obese continues to rise, a steady increase in the number of individuals with disabilities is expected. Literature indicates that disability within the United States has risen (Burton, Chen, Schultz, & Edington, 1998; Xiang, Smith, Wilkins, Chen, Hostetler, & Stallones, 2005), which has been attributed to several factors, including medical technology, vaccinations, and pharmacology, among others. These agents have promoted disability by reducing mortality, as once fatal conditions are now treatable. There is now evidence to suggest that disability will also continue to increase as a byproduct of the obesity epidemic (Alley & Chang, 2007). The obese population is growing “healthier,” meaning that life expectancy has increased for individuals with excessive bodyweight since the 1960s (Alley & Chang, 2007). This is mainly due to increased cardiovascular health, which supports the “Fat But Fit Paradox,” suggesting that increased cardiovascular activity can negate the negative impact of excessive bodyweight (McAuley, Pittsley, Myers, Abella, & Froelicher, 2009).

However, even in the presence of increased cardiovascular health, disability is still prevalent, as there were reports of increased functional impairment within individuals who were obese during 1999-2004 compared to during 1988-1994 (Alley & Chang, 2007). Cardiovascular health may prolong life expectancy, but it does not seem to counteract the disabling effects of obesity. There appears to still be an unfortunate cost left to be paid, as so aptly described in Gregg and Guralink’s (2007) article title, “Is Disability Obesity’s Price of Longevity?” This reasoning is supported by additional research (Alley & Chang, 2007; Ogden et al., 2006; Snih, Ottenbacher, Markides, Kuo, Eschbach, & Goodwin, 2007; Thompson, Edelsberg, Kinsey, & Oster, 2008), which suggests that life expectancy is rising, yet years of active life are being exchanged for years within a disabling condition. As Reynolds, Saito, and Crimmons (2005) reports, a fifty-five year old obese male can now expect two more years of life, however six fewer years with a disability.

Literature has identified the most significant disabilities that are on the rise as a result of obesity (Alley & Chang, 2007, Ogden et al., 2006). These conditions include arthritis and musculoskeletal disorders; pulmonary disorders, including asthma; cancers; cardiovascular

diseases, including congestive heart failure and cerebrovascular accidents; renal diseases; and metabolic disorders, including type II diabetes. Diabetes has been recognized to be the most critical concern regarding obesity-related disability, and in some of the literature, the nomenclature of “diabesity” has been used to describe the disorder.

The financial impact of the increased prevalence of these obesity-related conditions is equally troubling. The economic cost for obesity is approximately \$800 billion annually, which includes both direct and indirect costs (Burton, Glen, Schultz, & Edington, 1998; Caban et al., 2006; Chenoweth, 2005). This figure is expected to continue rising as the obese population continues to grow, which will therefore result in increased medical costs, increased health insurance costs, and issues with health insurance eligibility pertaining to bodyweight.

Obesity and Rehabilitation

Obesity is not only a public health concern, but one within the field of occupational health and rehabilitation. Employees are gaining weight at a greater frequency than ever in history, which has been attributed to several factors, including sedentary job demands, increased work hours, and dietary changes to accommodate a longer work day (Caban et al., 2006; Schulte et al., 2007). Obesity has also increased the rate of “work disability,” which means that individuals are experiencing problems with establishing or maintaining employment due to issues related to disability (Betters, in press). This is predominantly due to the increased risk for work-related injury among workers with obesity compared to workers with appropriate bodyweight (Finkelstein, Fiebelkorn, & Wang, 2005; Schulte et al., 2007).

One study (Ostbye, Dement, & Krause, 2007) has even reported the predictive relationship between obesity and Workers’ Compensation claims. Ostbye and colleagues (2007) suggest a significant increase in the risk for work-related injury among individuals with increased BMI scores, with nearly twice as many claims for those deemed obese (BMI > 40) compared to those within recommended weight. They also report that the discrepancy between these two groups is even more exaggerated when comparing individuals working in “high-risk occupations.” Based on these findings, it is reasonable to anticipate an increase in the number of work-related injuries as the obesity population gradually continues to rise. Obesity will not only increase the prevalence of disability, but will most likely add to the Workers’ Compensation caseloads.

Another recent study (Betters, in press) examined weight change after a work-related injury as the individuals are participating in Workers’ Compensation rehabilitation. This investigation did not yield favorable findings, as approximately two-thirds of the claimants gained weight post-injury, with the other third roughly split between no weight change and actual weight loss. This is bothersome, as with exception to individuals who were underweight prior to their work-related injury, none of the claimants’ weight gain was a positive outcome, and most likely positioned them closer towards obesity, if not into this classification. This is especially troublesome in that injured workers with permanent limitations are already at a heightened risk for re-exacerbation of their injuries, which will be compounded by the increased likelihood of injury associated with the acquired weight gain.

Implications for Workers’ Compensation

Based on the results from the previously cited literature, obesity will increase the prevalence of disability (Alley & Chang, 2007; Gregg & Guralink, 2007; Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). It is expected to also see an effect in the number of work-related injuries, thus resulting in more Workers’ Compensation claims (Ostbye,

Dement, & Krause, 2007). Individuals within the Workers' Compensation rehabilitation system are gaining weight, which may lead to future work-related injuries, thereby promoting a "revolving door" phenomenon within the Workers' Compensation system (Betters, in press). Although an increase in claimants may be good for business, the challenge for rehabilitation professionals within the workers' compensation system will be working with clients who may have multiple limitations and subsequently minimized transferable skills. Individuals with permanent restrictions as a result of work-related injuries are limited by their restrictions, which impacts vocational options. These options may also be dramatically reduced if the injured workers also bring non-work-related restrictions to the table, including issues related to obesity-induced disabilities. For example, an obese individual who sustained a back injury on the job may also have issues with work stamina due to poor cardiovascular health. If the individual is able to return to work within the current set of restrictions, he or she may still be at risk to sustain another injury, either from the initial back injury, his or her poor weight management, or both. Should this individual sustain another work-related injury and develop greater impairment, the additional restrictions will continue to reduce the return to work options available to the client. This may, in turn, manifest into a downward spiral, which each successive health issue further reducing the vocational potential of the client.

A secondary issue that may develop will be the diminishing number of individuals who will hire individuals that are obese. Although this form of discrimination already occurs, it is expected to become magnified due to rising health insurance costs (Burton, Glen, Schultz, & Edington, 1998). Eventually, employers will learn that obese employees are costing more in Workers' Compensation claims simply by filing more claims than individuals who are not obese. As discussions are taking place regarding additional health insurance costs to obese employees with equal coverage for non-obese co-workers (Caban et al., 2006), it would not be surprising to see this same concept applied to Workers' Compensation insurance coverage. Employees at a certain BMI may have to self-pay a portion of their Workers' Compensation insurance coverage to offset the expense for their more frequent claims. Although it sounds far-fetched, cost-containment strategies like this are going to have to be implemented if the predicted increase in Workers' Compensation claims occurs, as the system will not be able to sustain the impact of the growth.

Recommendations

The ideal solution for this problem is the elimination of obesity. A lack of obesity would dramatically decrease disease and disability conditions, including work-related disabilities. However, that is not only unlikely to occur; it is most likely impossible, as obesity has multiple causal factors, one being genetics (Must et al., 1999). Until genetic manipulation can occur and a yet to be identified obesity gene can be knocked out, obesity will continue to exist. Other causal factors, including poor dietary habits, physical inactivity, and psychological distress may be easier to alleviate, although each one of these brings tremendous challenges (Betters, in press). Because of such, rehabilitation professionals should not anticipate this problem to be resolved anytime soon, nor should they expect other healthcare providers to provide the "fix" as well. As the saying goes, things are going to get worse before they get better. This most likely will be true regarding the obesity epidemic, as research indicates that according to current behavioral practices, the obese population in the United States will continue to grow, with no real anticipated downswing in sight yet (Alley & Chang, 2007). Back in 2000, several lifestyle management programs initiated, targeting 2010 as the outcome date. Among other measures, obesity was regularly included as a measurement variable. According to the CDC

data (2007), national obesity has increased significantly. The light at the end of the tunnel is not yet in sight, and therefore rehabilitation professionals working within the workers' compensation system should look for ways to assist their clients without preconceived notions of obesity no longer being a factor.

Rehabilitation professionals, if not already, need to begin considering their clients' non-work-related health concerns. This is critically true for clients who are overweight or obese. Rehabilitation professionals, however, might feel disinclined to address bodyweight for several reasons. One reason may be that obesity is considered to be outside of the scope of responsibility. For example, if the job did not cause the obesity, it is not compensable, and therefore not relevant. Rehabilitation professionals may choose to not address the issue of obesity because they do not feel qualified to do so. Some may even feel uncomfortable talking to their clients about their weight, fearing it to be too touchy of a topic matter.

Although these reasons are understandable, if a client is at risk for reinjury because of weight management, the client should be informed. Informing the client that by gaining unnecessary weight, the chances of reinjury are increased should be conducted at a minimum. Rehabilitation professionals should operate within their scope of practice, so prescribing dietary plans and exercise programs is not advised. However, rehabilitation professionals can discuss weight management issues as it relates to vocational potential, and referrals can be made to appropriate healthcare providers. This also includes mental health care, as psychological distress is known to be related to weight management issues (Ogden et al, 2006). One study (Better, in press) even identified a significant relationship between mental health need and weight gain within the Workers' Compensation system, as claimants who self-reported a perceived need for mental health care were more likely to report weight gain since their injury, compared to individuals who do not report a perceived need for mental health services.

Secondly, future research focusing on how obesity is directly impacting Workers' compensation rehabilitation is needed. This is a developing issue, and the opportunity for future analysis will be available. If negative outcomes associated with the presence of obesity are noted, it would be easier to suggest recommendations that are systematic in nature to better address all clients with obesity and obesity-related disability.

Summary

Obesity is a serious health concern, and although it has become a less likely contributor to mortality, it is significantly increasing the prevalence of disability. The Workers' Compensation system will also be impacted by this epidemic, and new obstacles to the vocational rehabilitation process will emerge as a result. Further, long-term health care needs of obese persons will potentially impact the life care planning process. Rehabilitation professionals need to recognize the paradigm shift that is evolving, and plan to adjust to the predicted challenges that will be presented.

About the Author

Chad J. Better, PhD, CRC, CDMS, CVE, is an Assistant Professor in the Rehabilitation Counseling program at Winston-Salem State University. He has seven years experience as a rehabilitation educator. Dr. Better's research and clinical interests include occupational health and rehabilitation issues, specifically Workers' Compensation rehabilitation, return to work barriers, private sector rehabilitation practices, and the obesity-disability relationship. Prior to becoming an educator, he operated a private rehabilitation consulting and evaluation practice for four years.

References

- Alley, D. E., & Chang, V. W. (2007). The changing relationship of obesity and disability, 1988-2004. *Journal of the American Medical Association*, 298, 2020-2027.
- Betters, C. J. (in press). Work comp and weight gain: A growing problem in the workers' compensation rehabilitation system. *Work*.
- Burton, W. N., Chen, C. Y., Schultz, A. B., & Edington, D. W. (1998). The economic costs associated with body mass index in a workplace. *Journal of Occupational and Environmental Medicine*, 40, 786-792.
- Caban, A. J., Lee, D. J., Fleming, L. E., Gomez-Martin, O., LeBlanc, W., & Pittman, T. (2005). Obesity in U.S. workers: The national health interview survey, 1986 to 2002. *American Journal of Public Health*, 95, 1614-1622.
- CDC. (2007). State-specific prevalence of obesity among adults. Retrieved on April 21, 2009 from <http://www.cdc.gov/mmwr/mm5728a1.htm>.
- Chenoweth, D. (2005). *The Economic Costs of Physical Inactivity, Obesity, and Overweight in California Adults: Health Care, Workers' Compensation, and Lost Productivity*. California Center for Physical Activity. Sacramento, CA: Department of Health Services.
- Finkelstein, E., Fiebelkorn, C., & Wang, G. (2005). The costs of obesity among full-time employees. *American Journal of Health Promotion*, 20, 45-51.
- Gregg, E. W., & Guralink, J. M. (2007). Is disability obesity's price of longevity? *Journal of the American Medical Association*, 298, 2066-2067.
- McAuley, P., Pittsley, J., Myers, J., Abella, J., & Froelicher, V. (2009). Fitness and fatness as mortality predictors in healthy older men: The veterans exercise testing study. *Journal of Gerontology* [ahead of print].
- Must, A., Spandano, J., Coakley, E. H., Field, A. E., Colditz, G., & Dietz, W. H. (1999). The disease burden associated with overweight and obesity. *Journal of the American Medical Association*, 282, 1523-1529.
- Ogden, C. L., Carroll, M. D., Curtin, L. R., McDowell, M. A., Tabak, C. J., & Flegal, K. M. (2006). Prevalence of overweight and obesity in the United States, 1999-2004. *Journal of the American Medical Association*, 295, 1549-1555.
- Oreopoulos, A., Padwal, R., Kalantar-Zadeh, K., Fonarow, G. C., Norris, C. M., & McAlister, F. (2008). Body mass index and mortality in heart failure: A meta-analysis. *American Heart Journal*, 156, 13-22.
- Ostbye, T., Dement, J. M., & Krause, K. M. (2007). Obesity and workers' compensation. *Archives of Internal Medicine*, 167, 766-773.
- Reynolds, S. L., Saito, Y., & Crimmins, E. M. (2005). The impact of obesity on active life expectancy in older American men and women. *Gerontologist*, 45, 438-444.
- Romero-Corral, A., Montori, V., Somers, V., Korinek, J., Thomas, R., Allison, T., Mookadam, F., & Lopez-Jimenez, F. (2006). Association with body weight and total mortality and with cardiovascular events in coronary artery disease: A systematic review of cohort studies. *Lancet*, 368, 666-678.
- Schulte, P. A., Wagner, G. R., Ostry, A., Bianciforti, L. A., Cutlip, R. G., Krajnak, K. M., Luster, M., Munson, A. E., O'Callaghan, J. P., Parks, C. G., Simeonova, P. P., & Miller, D.
-

-
- B. (2007). Work, obesity, and occupational safety and health. *American Journal of Public Health*, 97, 428-436.
- Snih, A. S., Ottenbacher, K. J., Markides, K. S., Kuo, Y. F., Eschbach, K., & Goodwin, J. S. (2007). The effect of obesity on disability vs. mortality in older Americans. *Archives of Internal Medicine*, 167, 774-780.
- Thompson, D., Edlesberg, J., Kinsey, K. L., & Oster, G. (1998). Estimated economic costs of obesity to U.S. business. *American Journal of Health Promotion*, 13, 120-127.
- Tucker, L. A., & Friedman, G. M. (1998). Obesity and absenteeism: An epidemiologic study of 10,285 employed adults. *American Journal of Health Promotion*, 12, 202-207.
- Xiang, H., Smith, G. A., Wilkins, J. R., Chen, G., Hostetler, S. G., & Stallones, L. (2005). Obesity and risk of nonfatal unintentional injuries. *American Journal of Preventative Medicine*, 29, 41-45.
-