

Texas Obesity Research Center

Exploring Obesity Among Wheelchair Users: BMI vs Body Composition

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ABSTRACT

Background: Body mass index (BMI) is commonly used to indicate weight status but has been critiqued for being insensitive to body composition. Americans with disabilities have significantly higher obesity rates than those without when BMI has been used as the indicator of weight status. Examining obesity prevalence based on body composition among this group is warranted. As the life expectancy of those with disabilities has increased to approximate that of the general population, so too has chronic disease morbidity and mortality for which being overweight is a risk factor such as hypertension, hyperlipidemia, diabetes, and cardiovascular diseases. Further, evidence suggests that those with disabilities experience these conditions at earlier ages than the general population and obesity is likely a contributing factor. Approximately 1 in 5 Americans experience disability, and national estimates indicate that between 44%-62% of those with disability experience impaired mobility. Mobility impairments severe enough to necessitate wheelchair use often result in substantial physical changes that may alter body composition. **Purpose:** The purpose of this study was to assess body composition, including body fat using dual absorptiometry x-ray (DXA) among wheelchair users as compared to BMI. **Methods:** Conducted DXA scans on 42 wheelchair users. **Results:** Participants were predominantly white (86%) women (55%), with an average age of 46.1 ± 13.7 years and had lived an average of 25.1 ± 15.5 years with their impairment. Mobility impairments were due to spinal cord injury (41.9%), cerebral palsy/spina bifida (23.0%), Multiple Sclerosis (7.0%), post-polio (7%), or other causes (21.4%) such as lupus, amputation, or orthopedic impairment. The average body fat percent for men and women with a BMI in the normal weight range (18.5 - 24.99 kg/m²) was $28.6 \pm 7.1\%$ and $41.2 \pm 0.6\%$ respectively, and these values increased to substantially in both sexes at every BMI range (overweight $34.2 \pm 3.1\%$, $48.9 \pm 5.9\%$; obese $42.7 \pm 4.9\%$, $55.0 \pm 4.4\%$ for men and women respectively) . Thus, wheelchair users with a normal BMI had a percentage body fat that would be indicative of obesity in individuals without impairment. **Conclusions:** These results highlight the need to further examine weight status and body composition in wheelchair users and the health risks that alterations in weight and body composition pose for this group.

KEYWORDS: Disability, Obesity, DXA, BMI, Body fat