

# Effect of excess body weight on quality of life and satisfaction with body image among middle-aged Lithuanian inhabitants of Kaunas city

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**Key words:** quality of life; overweight; obesity; psychological factors.

**Summary.** The aim of the study was to identify the effect of overweight, obesity, and conditions related to body weight on quality of life and to assess the relationship between body weight and satisfaction with body image between middle-aged Lithuanian inhabitants of Kaunas city.

**Material and methods.** A random sample of 1403 Kaunas men and women, aged 35–64 years and stratified by age and sex, was examined in 2001–2002. Response rate was 62.4%. Examination included physical measurements and information on risk factors related to lifestyle. Quality of life was assessed by World Health Organization Quality of Life 100 questionnaire. Multivariate analyses were performed to identify the effect of excess body weight and conditions linked to body weight on quality of life.

**Results.** Less than three-fourths (73%) of men and women had excess body weight (body mass index,  $\geq 25.0 \text{ kg/m}^2$ ). Obesity in a complex with other analyzed factors had a negative effect on men's quality of life in the independence domain as compared to ones with BMI of  $< 25.0 \text{ kg/m}^2$  ( $OR=1.87$ ; 95% CI=1.08–3.26). Obesity for women increased the odds of having worse quality of life in the psychological and independence domains. Mean scores of body image and appearance facet for men with normal body mass were 73.5, for overweight ones 72.2, and for obese 66.8 (for women 69.9, 63.3, and 52.9, respectively;  $P=0.0001$ ).

**Conclusions.** Among women excess body weight was associated with impaired quality of life. Men with excess body weight reported better overall quality of life. Obese persons were less satisfied with their body image as compared to ones with normal body weight.

## Introduction

Overweight and obesity still remain significant public health concerns in many countries (1). Over past decades in Kaunas city, overweight tended to decrease among men, but there were no significant differences in obesity. Indeed, decreased prevalence of obesity was established in women (2). In Kaunas in 2002, obese and overweight persons, aged 35–64, comprised more than 70% of population (2). According to international MONICA study results, the prevalence of obesity was the highest in Kaunas women (3). Among patients, aged 20–70 years and attending the Clinic of Family Medicine at the Hospital Kaunas University of Medicine, the prevalence of overweight and obesity was even higher: 33.7 of women and 27.8 of men were overweight whereas even 52.1% of women and 61.4% of men were obese (4).

Evidence suggest that overweight and obesity are important determinants of chronic diseases, including diabetes mellitus, hypertension, dyslipidemia, coro-

nary heart disease, cardiovascular diseases, some cancers, gallbladder disease, osteoarthritis, sleep apnea, and respiratory problems (5). It is known that health perception and quality of life (QOL) are significantly affected by a clinical situation characterized by all these factors. That is the reason why analyses of the effect of obesity on QOL should consider these potential confounders when making comparisons on QOL scores, particularly in population-based surveys that include a large number of respondents with one or more of these diseases. There are also questions regarding the role of age and gender in the relationship to excess weight and QOL. Most studies have demonstrated worse health-related QOL for obese women compared to obese men on both physical and psychological domains (6, 7). The female body ideal of today is approaching underweight. The media often promote the image that slenderness is a symbol of attractiveness, beauty, and success in life (8, 9). That could serve as a reason of even more increased body dissatisfaction in obese women than in men. The func-

tional and psychological consequences of obesity may also be amplified by the coexistence of normal age-related declines (10). Reduced physical health as well as stigmatization and discrimination associated with obesity also can contribute to impaired well-being (11). Certain obese individuals are at greater risk of psychiatric disorder, especially depression (12). All these aspects should be considered analyzing the relationships between excess body weight and QOL.

In Lithuania, no such population-based studies on psychological QOL aspects of obesity have been carried out. This study was aimed to identify the effect of overweight, obesity, and conditions related to body weight on the QOL. Psychological aspect of this investigation was to assess the relationship between body weight and satisfaction with body image and appearance between middle-aged inhabitants of Kaunas city.

## Methods

A random sample of 1403 Kaunas men and women, aged 35–64 years and stratified by age and sex, was examined in 2001–2002 (778 women and 625 men). Response rate was 62.4%. Approval from the regional Ethics Committee of Kaunas University of Medicine was obtained, and participants signed a written informed consent before the examination. Examination included physical measurements – height, body weight, blood pressure, fasting blood glucose level, serum cholesterol, electrocardiogram (ECG) – and face-to-face interview by the research staff for the information on smoking, alcohol consumption, and physical activity. Subjects who smoked at least one cigarette per day were considered regular smokers. The consumed alcohol was recalculated into the standard alcohol units according to the consumed alcohol amount, frequency, and sort of the beverage (beer, wine, or spirits). According to alcohol consumption, respondents were divided into the four equal groups (quartiles), separately for men and women. Those from the first group were considered light alcohol consumers, and those from the rest three groups were considered moderate-to-heavy alcohol drinkers. Physical activity during leisure time was considered adequate if the respondent was running, walking, working in the garden, or exercising at least 10 hours a week during the leisure time. Physical activity during leisure time was calculated as an average of hours a week during winter and summer time. Body weight and height were used to calculate body mass index (BMI): the weight in kilograms was divided by height

in meters squared. The normal body weight was defined as BMI 18.5–24.9 kg/m<sup>2</sup>; overweight, BMI 25.0–29.9 kg/m<sup>2</sup>; and obesity, BMI ≥30.0 kg/m<sup>2</sup> (13). Systolic blood pressure of ≥140 mm Hg and/or diastolic blood pressure of ≥90 mm Hg or normal blood pressure (<140/90 mm Hg), if the person had taken antihypertensive drugs within the last two weeks, was considered as arterial hypertension (14). Serum total cholesterol level of ≥5.0 mmol/L was classified as hypercholesterolemia (15). ECG changes were coded independently by two coders using Minnesota's codes (MC), and discrepancies were resolved (16). Coronary heart disease (CHD) was determined according to:

1. Documented history of myocardial infarction and/ or MC 1-1, 1-2 (17);
2. Angina pectoris was defined by positive G. Rose questionnaire (without myocardial infarction and/ or MC 1-1, 1-2) (18);
3. ECG findings by MC: 1-3, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 6-1, 6-2, 7-1, 8-3 (without myocardial infarction and/or MC 1-1, 1-2, and without angina pectoris).

CHD category was defined by the priority. According to fasting blood glucose level, the study sample was divided into two categories: <6.1 mmol/L, and ≥6.1 mmol/L and/or diabetes mellitus (DM). Previous stroke was determined by interview information and documented history of stroke.

QOL was assessed by the self-administered WHO-QOL-100 questionnaire. Cultural adaptation and validation of the WHOQOL-100 were performed using the WHO protocol (19). Reliability and validity of the WHOQOL-100 were confirmed as satisfactory and discussed in our previous studies (20). The WHOQOL-100 is organized into the six domains – physical, psychological, level of independence, social relationships, environment, and spirituality – and overall QOL. Within each domain, a series of subdomains (facets) of QOL summarize that particular domain of QOL. The relationship between body image and appearance and body weight was analyzed using the scores of body image and appearance facet in the WHOQOL-100 psychological domain, and items that compose body image and appearance facet of psychological domain were as follows:

1. Are you able to accept your bodily appearance?
2. Do you feel inhibited by your looks?
3. Is there any part of your appearance, which makes you feel uncomfortable?
4. How satisfied are you with the way your body looks?

### Statistical analysis

The data of 1260 persons (552 men and 708 women) were included into statistical analysis. Scores of all domains and facets of the WHOQOL-100 were transformed to reflect a scale from 0 to 100, with higher scores denoting better QOL (21). Proportions were compared using *z* tests. The difference was considered to be statistically significant when  $P<0.05$ . The effect of body weight on satisfaction with body image and appearance was evaluated by the univariate general linear model. Independent variables in the model were BMI (1, normal weight; 2, overweight; and 3, obesity) and age categorized as follows: 1, 35–44 years; 2, 45–54 years; and 3, 55–64 years. Crude odds ratios were calculated to determine statistically significant factors affecting QOL (results are not shown). Logistic regression analysis was performed to identify the effect of excess body weight and conditions linked to body weight on the QOL. To assess goodness of fit, the Omnibus, Hosmer-Lemeshow tests and classification tables were conducted for all models analyzed with logistic regression. A dichotomous dependent variable was constructed by dividing WHOQOL-100 scores into two QOL groups by the median for each of the six domains and the overall QOL (0, QOL scores higher than median; 1, QOL scores lower than median). Independent variables in the logistic regression models were categorized body mass index, physical activity during leisure time, smoking, arterial hypertension, alcohol consumption, CHD, glucose level and/or DM and continuous variable – age. The first category of the each factor was

set as the reference category. Hypercholesterolemia and previous stroke were not analyzed in the multiple regression models, as their effect on the QOL was not statistically significant. Models were fitted separately for men and women for the each WHOQOL-100 domain. Data were analyzed using the statistical package SPSS version 10.0.

### Results

Overweight was less prevalent among women than men (33.8% and 46.9%, respectively;  $P<0.001$ ) (Table 1). More than one-fourth (26.3%) of men and 39.1% of women were obese ( $P<0.001$ ). Smoking and heavy alcohol consumption was more prevalent among men than women ( $P<0.001$ ). Physical activity during leisure time was inadequate in 39.9% of men and 36.9% of women. The prevalence of arterial hypertension in Kaunas middle-aged men and women was 51.8% and 42.3%, respectively ( $P<0.001$ ). Glucose level of  $\geq 6.1$  mmol/L and/or DM were found in 17.2% of men and 14.1% of women. In 80.1% of middle-aged Kaunas men and 83.2% of women, hypercholesterolemia was determined. The prevalence of CHD among middle-aged Kaunas men and women was 15.2% and 18.8%, respectively. Previously stroke was diagnosed for 6 men (1.1%) and 5 women (0.7%).

Increasing age had a negative effect on both men's and women's QOL in most of the WHOQOL-100 domains (Tables 2 and 3). Overweight and obese men had by 40% and 47%, respectively, lower probability of rating their overall QOL worse as compared to men with  $BMI<25.0$  kg/m<sup>2</sup>, whereas obesity had a negative

**Table 1.** Prevalence of overweight, obesity, and conditions related to body weight among middle-aged inhabitants of Kaunas city

Factor	Men, N=552		Women, N=708	
	n	%	n	%
Age, years				
35–44	161	29.2	200	28.2
45–54	191	34.6	261	36.9
55–64	200	36.2	247	34.9
Overweight	259	46.9	239	33.8***
Obesity	145	26.3	277	39.1***
Smoking	217	39.3	72	10.2***
Alcohol consumption daily or weekly	168	30.4	48	6.8***
Inadequate physical activity at leisure time	187	39.9	261	36.9
Arterial hypertension	286	51.8	299	42.3***
Glucose level $\geq 6.1$ mmol/L and/or DM	95	17.2	100	14.1
Hypercholesterolemia	439	80.1	589	83.2
Coronary heart disease	84	15.2	133	18.8
Previous stroke	6	1.1	5	0.7

DM – diabetes mellitus, \*\*\* $P<0.001$  as compared to men.

effect on men's QOL in the independence domain as compared to ones with BMI <25.0 kg/m<sup>2</sup> (OR=1.87; 95% CI=1.08–3.26). Obesity for women increased the odds of having worse QOL in the psychological and independence domains as compared to women with BMI of <25.0 kg/m<sup>2</sup>. Smoking increased the probability of having worse QOL in the environment and psychological domains for both men and women as compared to nonsmokers. Inadequate physical activity during leisure time was associated with worse QOL among women in the level of independence and environment domains. Analyzing the effect of arterial hypertension on the QOL in the multivariable models, a significant and inverse relationship was found only in female population: in the psychological domain, women with arterial hypertension had a lower probability of rating their QOL worse by 43% as com-

pared to women without hypertension. Moderate-to-heavy alcohol consumption was associated with lower risk of having worse QOL in the physical domain (by 40%) among women and in the independence domain among both men and women by 54% and by 41%, respectively, as compared to light alcohol consumption. Indeed, in the social relationships domain, moderate-to-heavy alcohol consumers had a higher probability of rating their QOL worse as compared to the light consumers among women (OR=1.61; 95% CI=1.11–2.34). CHD increased the probability of lower scoring in the independence domain for men (OR=1.85; 95% CI=1.09–3.13) and for women (OR=1.64; 95% CI=1.04–2.58) as compared to the ones without CHD. Increased glucose level and/or DM were related to worse scoring in overall QOL by 77% among men as compared to ones without DM

**Table 2. Effect of excess body weight and related factors on quality of life among middle-aged Kaunas men (multivariable analysis)\***

The WHOQOL-100 domains and variables	OR	95% CI
Overall QOL and health		
Age, years	<b>1.03</b>	<b>1.01–1.06</b>
Normal weight	1.0	
Overweight	<b>0.60</b>	<b>0.38–0.93</b>
Obesity	<b>0.53</b>	<b>0.30–0.91</b>
Glucose level	<6.1 mmol/L ≥6.1 mmol/L and/or DM	1.0 <b>1.77</b>
Physical		
Age, years	<b>1.04</b>	<b>1.01–1.06</b>
Psychological		
Age, years	<b>1.03</b>	<b>1.01–1.06</b>
Alcohol consumption:	light moderate/heavy	1.0 <b>0.65</b>
Level of independence		
Age, years	<b>1.05</b>	<b>1.03–1.08</b>
Normal weight	1.0	
Obesity	<b>1.87</b>	<b>1.08–3.26</b>
Alcohol consumption:	light moderate/heavy	1.0 <b>0.46</b>
Coronary heart disease:	no yes	1.0 <b>1.85</b>
Social relationships		
Age, years	<b>1.08</b>	<b>1.05–1.10</b>
Alcohol consumption:	light moderate/heavy	1.0 <b>0.61</b>
Environment		
Age, years	<b>1.05</b>	<b>1.02–1.07</b>
Smoking:	no yes	1.0 <b>1.52</b>

QOL – quality of life; DM – diabetes mellitus; OR – odds ratio; CI – confidence interval.

\*Variables entered: age, body mass index, smoking, alcohol consumption, physical activity during leisure time, coronary heart disease, glucose level (and/or DM) and arterial hypertension. Only statistically significant odds ratios are shown. 0 – QOL scores higher than median; 1 – QOL scores lower than median.

**Table 3. Effect of excess body weight and related factors on quality of life among middle-aged Kaunas women (multivariable analysis)\***

The WHOQOL-100 domains and variables		OR	95% CI
Physical			
Age, years		<b>1.04</b>	<b>1.02–1.06</b>
Alcohol consumption:	light	1.0	
	moderate/heavy	<b>0.60</b>	<b>0.41–0.88</b>
Psychological			
Normal weight		1.0	
Obesity		<b>2.38</b>	<b>1.52–3.73</b>
Smoking:	no	1.0	
	yes	<b>2.07</b>	<b>1.19–3.62</b>
Arterial hypertension	no	1.0	
	yes	<b>0.57</b>	<b>0.39–0.83</b>
Level of independence			
Age, years		<b>1.05</b>	<b>1.03–1.08</b>
Normal weight		1.0	
Obesity		<b>2.27</b>	<b>1.44–3.57</b>
Alcohol consumption:	light	1.0	
	moderate/heavy	<b>0.59</b>	<b>0.40–0.88</b>
Physical activity during leisure time:	adequate	1.0	
	inadequate	<b>1.64</b>	<b>1.15–2.33</b>
Coronary heart disease:	no	1.0	
	yes	<b>1.64</b>	<b>1.04–2.58</b>
Social relationships			
Age, years		<b>1.05</b>	<b>1.02–1.07</b>
Alcohol consumption:	light	1.0	
	moderate/heavy	<b>1.61</b>	<b>1.11–2.34</b>
Environment			
Physical activity during leisure time:	adequate	1.0	
	inadequate	<b>1.58</b>	<b>1.13–2.19</b>
Smoking:	no	1.0	
	yes	<b>1.72</b>	<b>1.01–2.93</b>

\*Variables entered: age, body mass index, smoking, alcohol consumption, physical activity during leisure time, coronary heart disease, glucose level (and/or diabetes mellitus) and arterial hypertension. Only statistically significant odds ratios are shown. 0 – QOL scores higher than median; 1 – QOL scores lower than median. OR – odds ratio, CI – confidence interval.

and with glucose level of <6.1 mmol/L.

As expected, obese men and women were less satisfied with their body image as compared to the ones with fit body weight. When controlling effect of age, mean scores of body image and appearance facet for men with normal body mass was 73.5, for overweight ones was 72.2, and for obese – 66.8 ( $P=0.0001$ ) (Table 4). Obese women were even more dissatisfied with their body appearance as compared to those with BMI of <25.0 kg/m<sup>2</sup> (mean scores of body image and appearance facet in three BMI categories were 69.9, 63.3, and 52.9, respectively;  $P=0.0001$ ).

## Discussion

Our studies results have shown that approximately

70% of the middle-aged population was either overweight or obese. Overweight was more prevalent among men whereas obesity – among women. According to the results of Lithuanian health behavior monitoring performed in 2002, 45.3% of 35–64-year-old men were overweight and 21.4% – obese. Overweight was detected in 34.3% and obesity in 22.2% of middle-aged Lithuanian women (22). It suggests that obesity was more prevalent in Kaunas women when comparing to the results of all middle-aged Lithuanian women. Being obese was associated with a significant deterioration of QOL in the level of independence domain for men and women and in psychological domain only for women. Results of the study in general US population showed impaired QOL in both physical and mental components of SF-36 for

**Table 4.** Differences of body image and appearance facet ratings in normal weight, overweight, and obese persons (univariate general linear model\*)

Body weight category	Men, n=552		Women, n=708	
	m	95 % CI	m	95 % CI
Normal weight (BMI <25.0 kg/m <sup>2</sup> )	73.5	71.1–75.9	69.9	67.3–72.5
Overweight (BMI 25–29.9 kg/m <sup>2</sup> )	72.2	70.4–74.0	63.3	61.1–65.5
Obesity (BMI ≥30 kg/m <sup>2</sup> )	66.8	64.3–69.3	52.9	50.6–55.1
F test	8.3		49.7	
P	0.0001		0.0001	

\*Adjusted for age. BMI – body mass index, m – means of the scores of body image and appearance facet, CI – confidence intervals.

obese people when controlling for age, sex, smoking, and other factors (23). However, being overweight did not significantly affect QOL scores. Diet and exercise were associated with better QOL scores, whereas smoking was associated with deterioration in QOL. In our study, a positive effect of physical activity during leisure time and negative effect of smoking on QOL was also detected. Analyzing the relationship between body weight and health-related quality of life in Spanish population, in male, though not female, obesity was nonetheless associated with better QOL on the SF-36 mental scales by 50% when controlling for age, tobacco and alcohol consumption, physical activity during leisure time, and other factors (24). Frequencies of scores for overweight persons were similar to those for subjects with normal weight on most of the SF-36 scales. Similar results were found in our study: in men, but not in women, overweight and obesity were associated with a lower probability of scoring worse in overall QOL by 40% and by 47%, respectively. This finding could be in line with a study that reported obese men as having a lower risk of depression and suicidal behavior than nonobese men (25). In German representative adult sample considering satisfaction ratings for several life domains, obese men reported a significantly higher satisfaction in the social area and living conditions, in the work area, in the area of leisure activities, as well as higher overall satisfaction, also slightly elevated mental component of SF-36 as compared to the nonobese men (26).

Data from the US 2000 Medical Expenditure Panel Survey showed that persons who were engaged in moderate or vigorous activities for three or more times a week were more likely to have a normal weight (27). Compared to nonsmokers, current smokers had a significantly lower body mass index. Among the clinical conditions, persons with diabetes were the least likely

to have a normal weight and the most likely to have class II obesity. However, even in absence of these conditions, QOL scores decreased with increasing level of obesity. Durham (North Carolina, the United States) study confirmed that even after adjusting for age, race, comorbid illness severity, depression, and physical activity, individuals with obesity, especially those with BMI of ≥40 kg/m<sup>2</sup>, had significantly lower scores compared with normal-weight individuals on 5 of the 10 subscales of SF-36 (28). Australian diabetes, obesity, and life style study discovered association between impaired glucose metabolism and QOL (29). Previously diagnosed diabetes was associated with a significantly greater risk of being in the lowest quartile of each dimension of the SF-36 scale (except for mental health), and this association was only partially attenuated by adjustment for age, sex, BMI, physical activity, and treatment for hypertension and lipid abnormalities. According to authors of this study, poor QOL may increase the likelihood of developing type 2 diabetes, as it is likely to be associated with less healthy lifestyle options, and type 2 diabetes may cause poor QOL, because of symptoms arising from hyperglycemia and other disorders related to diabetes and obesity. In our study, the relationship between increased glucose level and QOL was found only in male population: increased glucose level and/or DM were related to scoring worse in overall QOL by 77% as compared to ones without DM and with glucose level of <6.1 mmol/L. Kaunas women with arterial hypertension were more likely to report better QOL in the psychological domain than those with normal blood pressure. There are few opinions approaching the relationship between the QOL and hypertension. Firstly, persons with known and treated hypertension report poorer QOL than persons with unknown hypertension even after adjustment for associated cardiovascular risk factors, hypertension complications, and

comorbidity (30). Secondly, the side effects of antihypertensive treatment are common and both the disease and the drug treatment adversely affect the patient's well-being (31). Finally, when treating hypertension, an improvement of QOL can be related not only to better physical status but also mainly to better mood and lower depression scores and it depends on medication type (32).

It is well known that together with impaired physical status, obese people suffer social discrimination and, in particular, that those who come to clinics in search of treatment tend to have lower self-esteem, more anxiety, and a poorer image. In our study, obese men and especially women were significantly less satisfied with their body image as compared to those with BMI of  $<25.0 \text{ kg/m}^2$ . Differences in scores of body image and appearance facet between men with normal body mass and overweight were not found. Several studies confirmed that generally, women overestimate their body weight status (33, 34). The defined normal BMI ranges from 18.5 to 24.9  $\text{kg/m}^2$ . However, it does not correlate to the lay female perception of normal weight. In addition, there are theories explaining the differences in health and QOL perception between men and women, which include strictly biological factors (genes, anatomy, hormones, reproductive history, etc.), factors stemming from women's social role (social network and support, not paid work at home, etc.), and mixed factors that are a combination of the previous two (health-related

lifestyles, use of health care services, mental health disorders) (35, 36). All these reasons may explain even more impaired obese women's psychological aspect of QOL as compared to obese men. In addition, several studies did not confirm the relationship between obesity and mental disorders such as anxiety and depression (12, 26). It indicates that depressed or otherwise disturbed obese persons need only to loose weight in order to return to psychological health.

*Limitations of the study.* We cannot assert that the study population of Kaunas city is perfectly representative of the general population of Lithuania. The second limitation is that no obesity-specific QOL measure was used to evaluate body image and appearance ratings among obese persons. And the third, effect of depression on the QOL for obese patients was not assessed by any specific depression scale.

### Conclusions

In conclusion, excess body weight was associated with impaired quality of life for men and women in level of independence domain and only for women in the psychological domain in a complex with other related factors. An inverse relationship between body mass index and overall quality of life was found in a male population. Obese men and women were less satisfied with their body image and appearance even when controlling effect of age. Strategies and programs for weight maintenance as well as weight reduction must become a higher priority in public health.

## Padidėjusio kūno svorio, gyvenimo kokybės ir pasitenkinimo savo išvaizda sasajos tarp Kauno vidutinio amžiaus gyventojų

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**Raktažodžiai:** gyvenimo kokybė, antsvoris, nutukimas, psychologiniai veiksniai.

**Santrauka.** *Tyrimo tikslas.* Nustatyti sasajas tarp antsvorio, nutukimo, veiksnų, susijusių su kūno svoriu ir gyvenimo kokybe, įvertinti sasają tarp kūno svorio ir pasitenkinimo savo išvaizda tarp Kauno 35–64 metų gyventojų.

*Tyrimo medžiaga ir metodai.* Tiriamujų kontingentą sudarė atsitiktinai atrinkti ir sugrupuoti pagal amžių ir lytį 35–64 m. Kauno gyventojai ( $n=1403$ ). Tyrimas vykdytas 2001–2002 m. Atsako dažnis – 62,4 proc. Tiriamieji buvo apklausiami pagal standartizuotą epidemiologinį klausimyną ir nustatomi objektyvūs sveikatos rodikliai. Gyvenimo kokybę ištirta naudojant „Pasaulinės sveikatos organizacijos gyvenimo kokybės 100“ klausimyną. Antsvorio, nutukimo ir su kūno svoriu susijusių veiksnų reikšmė gyvenimo kokybei analizuota logistinės regresijos metodu.

*Rezultatai.* Turinčių antsvorį daugiau buvo vyru nei moterų (46,9 ir 33,8 proc., atitinkamai,  $p<0,001$ ). Nutukusiu daugiau buvo moterų nei vyru (39,1 ir 26,3 proc., atitinkamai,  $p<0,001$ ). Nustatyta, kad nutukusiu vyru galimybė blogiau vertinti gyvenimo kokybę nepriklausomumo srityje buvo 87 proc. didesnė, lyginant su

vyrais, kurių kūno masės indeksas buvo  $<25,0 \text{ kg/m}^2$ . Nutukimas didino moterų blygesnio gyvenimo kokybęs vertinimo galimybę psichologinėje ir nepriklausomumo srityje. Gyvenimo kokybės psichologinio aspekto „pasitenkinimas savo išvaizda“ įvertinimas buvo blygesnis tarp turinčių antsvorio ir nutukusių vyru ir moterų palyginus su atitinkamu normalaus kūno svorio asmenų įvertinimu (vyru kūno masės indeksas  $<25,0 \text{ kg/m}^2 - 73,5$ ;  $25,0-29,9 \text{ kg/m}^2 - 72,2$  ir  $\geq 30,0 \text{ kg/m}^2$  66,8 balo, moterų 69,9, 63,3 ir 52,9 balo atitinkamose grupėse,  $p=0,0001$ ).

**Išvados.** Nutukimas turėjo neigiamos reikšmės moterų gyvenimo kokybei psichologinėje ir nepriklausomumo srityje. Vyrai, turintys padidėjusi kūno svorį, bendrają gyvenimo kokybę vertino geriau nei normalaus kūno svorio vyrai. Turintys antsvorio ir nutukę vyrai ir moterys buvo mažiau patenkinti savo išvaizda, lyginant su normalaus svorio asmenimis.

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