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# Under the shadow of the beauty stereotype: quality of life and associated factors in women

## À sombra do estereótipo de beleza: qualidade de vida e fatores associados em mulheres

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## Abstract

*Objectives:* This study has assessed the association among body composition, general and social aspects with Quality of Life of 308 adult and 53 elderly women treated in a nutrition outpatient clinic. *Methods:* Quality of Life was assessed using the *WHOQOL–BREF* questionnaire of the World Health Organization, comprised of the physical, psychological, social relationships and environmental domains and by the self-evaluation and total categories. Data about Body Mass Index, body fat percentage and waist circumference were collected. *Results:* Obesity and overweight were present for the majority of adult (47.4%) and elderly women (84.9%), respectively. All women had their waist circumference and body fat percentage above the recommended values. Eutrophic elderly ($p=0.03$) and eutrophic adults ($p<0.001$) showed higher Quality of Life. All the domains and categories of Quality of Life showed a correlation with Body Mass Index, waist circumference and body fat percentage ($p<0.001$). Thus, the higher these values, the lower the Quality of Life. The multiple regression model showed that Body Mass Index ($p<0.001$), age ($p<0.001$) and educational level ($p<0.001$) are related to Quality of Life in an independent manner, and Body Mass Index is inverse and the others in a direct way. *Conclusion:* Our study suggests that because the increase of Body Mass Index is a physically noticeable variable to women, it has a negative impact on Quality of Life.

**Keywords:** Women. Quality of life. Body composition. Body image.

## Resumo

*Objetivo:* Neste estudo, avaliou-se a associação da composição corporal, aspectos gerais e socioeconômicos com a Qualidade de Vida de 308 mulheres adultas e 53 idosas atendidas em um Ambulatório de Nutrição. *Métodos:* A Qualidade Vida foi avaliada com o questionário *WHOQOL–bref,* da Organização Mundial da Saúde, composto pelos domínios: físico, psicológico, relações sociais e meio ambiente, e pelos quesitos autoavaliação e geral. Foram coletados dados de Índice de Massa Corporal, percentual de gordura e circunferência de cintura. *Resultados:* A obesidade e o sobrepeso foram observados em 47,4% das adultas e em 84,9% das idosas, respectivamente. Todas as mulheres apresentaram circunferência de cintura e percentual de gordura elevados. As idosas eutróficas (p=0,03) e as adultas eutróficas (p<0,001) possuíam maior Qualidade de Vida. Todos os domínios e quesitos da Qualidade de Vida mostraram correlação com o Índice de Massa Corporal, circunferência de cintura e percentual de gordura (p<0,001), isto é, quanto maiores estes valores, menor a Qualidade de Vida. A regressão múltipla expôs que o Índice de Massa Corporal (p<0,001), idade (p<0,001) e escolaridade (p<0,001) se relacionaram de forma independente com a Qualidade de Vida, sendo o Índice de Massa Corporal de maneira inversa e as duas últimas, de forma direta. *Conclusão:* Sugere-se que o aumento do Índice de Massa Corporal, por ser uma variável fisicamente perceptível às mulheres, repercuta negativamente sobre a Qualidade de Vida experienciada por esse grupo.


**Palavras-chave:** Mulheres. Qualidade de vida. Composição corporal. Imagem corporal.

## Introduction

The World Health Organization (WHO) defines "*quality of life*" (QOL) as:

> An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a concept of comprehensive reach affected in a complex way by physical health, psychological state, level of independence, social relations and relations with the individual's environment characteristics (*World Health Organization*, 1997).[1]

Based on this definition, in the 1990s the World Health Organization created a short version of an instrument that seeks, through rapid completion, to assess the level of quality of life in four

domains (physical, psychological, social relations and the environment), called WHOQOL-BREF (*World Health Organization Quality of Life – bref*).[2,3]

In order to study women's quality of life, it is necessary to address possible factors inherent to them that influence their lives in physical, psychological, social relations and environment domains. Some studies have sought to elucidate some of these relations in what refers, for example, to elderly women's sociodemographic variables and health statuses,[4] dissatisfaction with the body[5] and lifestyle.[6] Obesity is also related to low perception of QOL.[7] However, it is believed that more than nutritional status, other body aspects may be related to QOL perceptions in women, especially those more associated with appearance, such as body fat and waist circumference.

In the last decades in Brazil, social norms regarding body weight have approached the lean ideal in effect in Europe and North America, which has caused both an increase in a stigma about obesity and an increase in the impact of Body Mass Index (BMI) on quality of life perception.[7]

The way individuals view themselves, i.e., their body image, involves several biopsychosocial factors, such as age, physical activity practices, number of diseases and health perception, the most important one being nutritional status. Thus, body image satisfactory perception can act beneficially to the individuals' state of health.[8]

Women are usually more concerned with body weight and shape, but the constant pursuit of a "perfect body" intensified by the various mediae renders this ideal almost unattainable, resulting in dissatisfaction with their physical makeup.[9]

This article intends to show the importance of other facets, still little explored, that relate to the domains of quality of life and act for this population's holistic well-being. In addition, we highlight the role of physically perceptible measures as some factor of strong influence on individual health conception. Through an approach that holds a plural view to this question, one tries to contribute with valid knowledge for the real incorporation of the quality of life notion when applied to women's health.

In this regard, this study seeks to evaluate quality of life and its association with socioeconomic, lifestyle and body composition factors in a population group of adult and elderly women treated at a Nutrition Outpatient Clinic.

## Methods

A cross-sectional and exploratory study, developed in a Nutrition Outpatient Clinic (NOC) belonging to a private Higher Education Institution (IES, in the Portuguese abbreviation), located in the city of Santos, São Paulo, Brazil. NOC care is free for individuals of all age groups, whether they are healthy or have any disease. Demand for NOC occurs both voluntarily and

through guidance from health professionals. A large part of the population served is resident of the Brazilian municipality of Santos, SP, and the surrounding cities (São Vicente, Cubatão, Praia Grande and Guarujá).

The study population consisted of all adult women (20 to 59 years old) and elderly (≥ 60 years old) served from May 2012 to September 2013. The outpatient clinic attends an average of 300 individuals per year and all (adult and elderly) women who were served in the period were invited to participate in the study. Sampling was carried out for convenience, excluding pregnant women and infants.

Socioeconomic data (level of education, type of occupation, family income), body composition (weight, height, waist circumference and percentage of fat), miscellaneous (reason for attending the nutrition clinic and presence of disease – reported by the individuals themselves) and lifestyle (physical activity practices – type and frequency –, alcoholism and smoking) were collected from a specific nutritional anamnesis for adults and the elderly and refer to the first nutritional consultation (nutritional assessment). Quality of life data were collected at the moment of nutritional counseling, one week after the first visit, since there were no nutritional interventions in that period.

Nutritional diagnosis from BMI [Body Mass Index – weight (kg)/height$^2$ (m)] was performed according to cutoff points established by the World Health Organization[10] for adults and according to *The Nutrition Screening Initiative* (1994) for the elderly.[11] Procedures for measurement of weight and height followed parameters established by the Brazilian Ministry of Health by the Technical Standard by Brazilian government Food and Nutrition Surveillance System (SISVAN, in the Portuguese abbreviation).[12] To measure body weight, an electronic scale Toledo® with capacity for 150 kg and accuracy of 50 g was used. And for height, a non-portable stadiometer Tonelli® with a scale of 2.20 m was used.

Waist circumference (WC) was measured by means of an inelastic tape measure. And for evaluation of risk for development of cardiovascular diseases, the cut-off point recommended by the World Health Organization was used.[13] Fat percentage data were obtained by Bioelectric impedance analysis (BIA), with equipment Biodynamics® model 310e/ *Body Composition Analyzer.* In order to perform the BIA, participants had to fast for food and liquids for at least four hours, not to use a pacemaker, not to be pregnant and not to be in their menstrual period. Percentage of fat was classified according to Jackson and Pollock (1978), cited by Heyward and Stolarczyk.[14] Quality of Life (QOL) was assessed using a validated questionnaire prepared by the World Health Organization, known as the *WHOQOL*–BREF (shorter Portuguese language version) consisted of 26 questions, being two on the subject of self-assessment and 24 divided into four domains (physical, psychological, social relations and environment), with a score of 4 to 20 points in each.[2, 15] A general item was also calculated, consisting of a simple arithmetic mean of the scores of the instrument 26 questions.[15]

The physical domain comprises facets about pain and discomfort, energy and fatigue, sleep and rest, mobility, daily activities, dependence on medications or treatments and work capacity. The psychological domain covers the facets of positive and negative feelings, self-esteem, body image and appearance, thinking/learning/memory/concentration, and also about spirituality/religion/personal beliefs. Facets on personal relationships, social support and sexual activity are part of the social relations domain. And finally, in the environmental domain are facets on physical security and protection, home environment, financial resources, health and social care, opportunities to acquire new information and skills, leisure participation and opportunities, transportation and physical environment (pollution/noise/traffic/climate).[2]

Calculation of scores and descriptive statistics of each item and domain of the instrument *WHOQOL-BREF* were carried out in a 2007 version Microsoft Excel® spreadsheet with an instrument developed by Pedroso et al.[15]

Statistical analysis of the data was carried out with Student's t-test for comparison of variables from unrelated groups (elderly versus adult, eutrophic elderly versus overweight elderly) and analysis of variance (ANOVA) with a fixed factor and multiple comparisons Tukey's test, when considering two or more unrelated groups (eutrophic versus overweight versus obese adults). To measure the correlation between body composition variables and quality of life, the Pearson linear correlation test was performed. Multiple linear regression models were developed to investigate the relationship between independent and quality of life variables (general and domains). Those with Pearson correlation coefficient (PCC) greater than 0.20 were tested as independent in the models and only those with a statistically significant regression coefficient remained. Insertion of variables in the models was given by the method *Stepwise: forward*. The variable schooling was entered into the models with three categories: elementary school (complete or incomplete), high school (complete or incomplete) and higher education (complete or incomplete). Family income variable was also included in three categories: low (≤ 2 minimum wages), medium (≥ 2 to 4 minimum wages) and high (≥ 4 minimum wages). Models adjustment was evaluated by residue analysis. It was chosen not to use a conceptual regression model because it was an exploratory study.

Statistical tests were performed with the aid of software SPSS – *Statistical Package for Social Sciences*®, version 15.0., with significance level of 5%.

The research was approved by the Research Ethics Committee (REC) of the Institution of Higher Education on April 23, 12 (document: 27380). Participants signed an Informed Consent Form (ICF) according to resolution 196/96 of the Brazilian government National Health Council (CNS, in the Portuguese abbreviation) in force in the year in question.[16]

| a | | |
|---|---|---|
| Não =134) | | |
| dia; DP | p* | |
| 4; 3,0 | 0,47 | |
| 82;2,7 | 0,34 | |
| ,8;2,9 | 0,18 | |
| 33;2,2 | 0,63 | |
| 87;3,3 | 0,55 | |
| 75;2,2 | 0,36 | |



## Results and Discussion

A total of 308 adults and 53 elderly women, with a mean (standard deviation) of 38.4 (11.7) years and 65.7 (4.9) years, respectively, participated in the study.

For both age groups, the majority received 3-5 minimum wages (42.9%), was not alcoholic (74.5%) and the main reason for the demand for the outpatient clinic was weight loss (50.9%). Physical activity was not practiced by 60% of adults and 50.9% of the elderly.

The majority of the adult women was enrolled in or had already concluded higher education (55.8%), while the majority of the elderly had completed high school (37.7%). In general, the ones having higher education (high school and higher education) had a higher overall QOL level ($p < 0.001$), a result also found in other studies.[17, 18] There is an idea that the higher the educational level, the greater the self-care with the various factors that interfere in the QOL.

In relation to smoking, both adults and the elderly, for the most part, did not have this habit (94,4%) and non-smokers presented higher overall QOL ($p = 0.03$). Individuals generally have knowledge about smoking harmful effects and smokers are aware of how harmful the substances present in cigarettes are but they do not want or can not stop the addiction, which can have a negative effect on QOL. Similarly, the physical domain is also affected, since smoking poses greater risk for chronic obstructive pulmonary disease (COPD), cardiovascular disease (CVD), bronchitis, dysmenorrhoea, decreased fertility and premature menopause,[19] i.e., there is a decrease in physical health perception in smoking women.

In the majority, both age groups had some type of disease (59.8%), except for diabetes (85.2%). Hypertension and dyslipidemia were not found for most adult women, with 61.8% and 80.6%, respectively, and were found for the majority of the elderly women, with 66.7% and 54.9%, respectively. Among women having or not diabetes mellitus, arterial hypertension and dyslipidemia there were no significant differences for QOL.

Regarding the presence of chronic non-communicable diseases (NCD), women with and without diabetes mellitus, arterial hypertension and dyslipidemia have not shown significant differences among them for QOL (Table 1). This result has already been observed in another study in Brazil.[20] The hypothesis is raised that this fact occurs due to the fact that routine drug use to control these diseases is not a complication for the women in the study, so that there are no negative implications in their QOL. Taking into account that chronic non-communicable diseases (NCDs) are considered silent because damages are not felt in a significant way, especially if there is the use of medicines, until reaching more advanced stages of the disease, QOL decrease becomes imperceptible.

**Table 1.** Mean scores of QOL domains in relation to the presence of diabetes, systemic arterial hypertension and dyslipidemia. Santos, São Paulo, 2014.

| Quality of life domains | Diabetes | | | Hypertension | | | Dyslipidemia | | |
|---|---|---|---|---|---|---|---|---|---|
| | Yes (n = 18) Average; SD | No (n = 149) Average; SD | p* | Yes (n = 63) Average; SD | No (n = 103) Average; SD | p* | Yes (n = 32) Average; SD | No (n = 134) Average; SD | p* |
| Physical | 14.76; 2.6 | 13.82; 3.0 | 0.20 | 13.95; 3.1 | 13.91; 2.9 | 0.92 | 13.59; 3.1 | 14; 3.0 | 0.47 |
| Psychological | 13.74; 2.2 | 13.72; 2.8 | 0.97 | 13.99; 2.5 | 13.55; 2.9 | 0.31 | 13.31; 3.1 | 13.82; 2.7 | 0.34 |
| Social relationships | 15; 2.2 | 14.61; 3.0 | 0.59 | 14.98; 2.8 | 14.45; 2.9 | 0.25 | 14.04; 3.0 | 14.8; 2.9 | 0.18 |
| Environment | 13.3; 2.6 | 13.29; 2.4 | 0.98 | 13.39; 2.4 | 13.22; 2.3 | 0.65 | 13.11; 2.9 | 13.33; 2.2 | 0.63 |
| Self-assessment | 13.11; 2.3 | 12.77; 3.3 | 0.66 | 12.94; 3.0 | 12.72; 3.4 | 0.67 | 12.5; 2.9 | 12.87; 3.3 | 0.55 |
| General | 13.98; 2.0 | 13.64; 2.3 | 0.54 | 13.82; 2.2 | 13.59; 2.3 | 0.50 | 13.35; 2.4 | 13.75; 2.2 | 0.36 |

SD = Standard Deviation * Student's t-test

In another Brazilian study, the number of drugs used by elderly women was not significantly associated with quality of life domains, except for the physical domain, which seemed to improve for those taking one to two medications regularly, suggesting to the authors that discomforts and pains caused by old age are attenuated.[4] It is also hypothesized that drug use can bring comfort and safety to users, thus increasing their QOL perceptions.

As for quality of life, elderly women have shown higher QOL for the environment domain ($p = 0.02$) and for the self-assessment item ($p = 0.03$) when compared to the adult ones, indicating that they appear to be more engaged in the search for a better quality of life, being members of social centers, practicing physical exercises or other social occupations, since now they have greater time availability for these activities. Menezes et al.[8] have observed in their population-based study that the elderly mentioned having satisfaction with their body image, suggesting that there is greater acceptance of this aspect in view of aging, which significantly contributes to self-esteem and self-care, with repercussions in the search for better health status.

In addition, older women have greater psychological maturity to accept problems arising from aging and can cope with higher self-acceptance, since evidence suggests that most people become more conscious,[21,22] dominant, agreeable, and emotionally stable over the years,[21]as well as happier, more contented with themselves, focused, relaxed and satisfied with what they have and less concerned with productivity at a later age.[23]

Regarding nutritional status, obesity (BMI $\geq 30$ kg/m$^2$) was found in 47.4% for adult women and overweight (BMI $\geq 27$ kg/m$^2$) for 84.9% of elderly women. Both age groups showed very high WC ($\geq 88$ cm), totaling 73.9%, as well as high fat percentage (20-29 years: > 31%; 30-39 years: > 32%; 40-49 years: > 33%; 50-59 years: > 34%; > 60 years: > 35%), in 76.2%.

BMI classification of adults and elderly in the present study corroborates the data found in the 2008-2009 Brazilian government Family Budget Survey (POF, in the Portuguese abbreviation),[24] which has shown that overweight in women aged 20 years or older increased from 28.7% in 1974-1975 to 48% in 2008-2009 and obesity in the same period increased more than twice, from 8% to 16.9%. Data from 2013 Brazilian government National Health Survey (PNS, in the Portuguese abbreviation) also indicate a similar diagnosis, in which the prevalence of overweight for women aged 20 years or more was 59.8%, and 25.2% of obesity.[25]

Eutrophic elderly women ($p = 0.03$), as well as eutrophic adult women ($p < 0.001$) presented higher QOL (Tables 2 and 3). In relation to body composition, it was verified for adults that the higher the BMI classification, the lower the QOL, a result also found in another study.[7] Regarding the result of the psychological domain and self-assessment and general items, it was observed that the higher the BMI classification, the lower the QOL. It may be suggested that the greater the excess weight, the more emotionally unmotivated women become, since they do not follow the

stereotype considered pleasant and acceptable to society, whereas eutrophic women have higher QOL and well-being in all aspects and are able to see themselves as healthy.

**Table 2.** Mean scores of QOL domains in relation to elderly women's nutritional status. Santos, São Paulo, 2014.

| Elderly / Domain | Eutrophic | | | Overweight | | | |
|---|---|---|---|---|---|---|---|
| | n | Mean | SD | n | Mean | SD | p* |
| Physical | 8 | 16.94 | 2.07 | 45 | 13.61 | 2.73 | **< 0.01** |
| Psychological | 8 | 15.67 | 1.71 | 44 | 14.05 | 2.69 | 0.1 |
| Social relationships | 8 | 15.17 | 2.75 | 44 | 14.74 | 2.71 | 0.68 |
| Environment | 8 | 14.75 | 2.30 | 45 | 13.99 | 2.41 | 0.41 |
| Self-assessment | 8 | 16.5 | 1.77 | 44 | 13.64 | 2.77 | **< 0.01** |
| General | 8 | 15.72 | 1.52 | 45 | 13.97 | 2.17 | **0.03** |

DP = Standard Deviation * Student's t-test

Values of p in bold represent a statistically significant difference.

**Table 3.** Mean scores of QOL domains in relation to adult women's nutritional status. Santos, São Paulo, 2014.

| Adult / Domains | Eutrophic | | | | Overweight | | | | Obesity | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | SD | | n | Mean | SD | | n | Mean | SD | | p* |
| Physical | 53 | 15.67 | 2.38 | a | 109 | 14.38 | 2.62 | b | 145 | 13.67 | 2.97 | b | **< 0.001** |
| Psychological | 52 | 15.27 | 1.88 | a | 106 | 14.08 | 2.21 | b | 146 | 13.17 | 2.68 | c | **< 0.001** |
| Social relationships | 53 | 15.50 | 2.41 | a | 109 | 15.08 | 2.81 | a | 146 | 14.52 | 2.92 | a | 0.063 |
| Environment | 53 | 14.16 | 1.97 | a | 109 | 13.21 | 2.38 | b | 146 | 13.07 | 2.29 | b | **0.01** |
| Self-assessment | 53 | 15.36 | 2.18 | a | 109 | 13.54 | 2.78 | b | 146 | 11.97 | 3.14 | c | **< 0.001** |
| General | 53 | 15.07 | 1.54 | a | 109 | 13.97 | 1.96 | b | 146 | 13.33 | 2.13 | c | **< 0.001** |

SD = Standard Deviation

*Analysis of variance with a fixed factor and Tukey's range test.

Different letters on the same row indicate significant differences ($p < 0.01$).

Values of p in bold represent a statistically significant difference.

Besides the important deleterious aspects related to health, it is known that overweight causes psychological and social changes in women. Jackson & Beeken et al.[26] have observed that obesity, weight discrimination and psychological well-being are interrelated, pointing to indirect effects of obesity through the perception of weight discrimination, quality of life, satisfaction with life and depression symptoms. Also, this study mentioned has highlighted the role of perceived weight discrimination, explaining about 40% of the association of obesity with psychological well-being.[26]

Stigma of weight, besides intensifying unhealthy behaviors, has negative implications for public health, since it threatens obese individuals' physical and psychological health, creates obstacles to implementation of effective measures for prevention of diseases and exacerbates disparities in health.[27]

About this, Agrawal et al.[28] have studied psychosocial factors associated with obese women in a developing country and found that daily problems (walking, climbing stairs, crouching and doing household activities), dissatisfaction with body image, sexual dissatisfaction, stigma and discrimination were related to increased BMI. In addition, women surveyed reported suffering with derogatory jokes and comments.[28]

All QOL domains and requirements showed a negative correlation with BMI, WC and fat percentage ($p < 0.001$), that is, the higher these values, the lower the QOL (Table 4). BMI was the significant variable in the regression model, which may indicate that measures physically perceptible to women influence much more in their judgment of QOL in all domains than those that are not visibly apparent, since they may feel embarrassed and troubled for not fitting into stereotypes of vigorous beauty.

**Table 4.** A correlation between QOL domains and requirements with BMI, waist circumference, and fat percentage of adult and elderly women. Santos, São Paulo, 2014.

| Domain | BMI | Waist circumference | Fat percentage | p* |
|---|---|---|---|---|
| | r | r | r | |
| Physical | – 0.35 | – 0.33 | – 0.27 | < 0.001 |
| Psychological | – 0.32 | – 0.30 | – 0.22 | < 0.001 |
| Social relationships | – 0.20 | – 0.22 | – 0.15 | **< 0.001** |
| Environment | – 0.20 | – 0.18 | – 0.12 | **< 0.001** |
| Self-assessment | – 0.42 | – 0.42 | – 0.30 | **< 0.001** |
| General | – 0.36 | – 0.35 | – 0.26 | < 0.001 |

* The Pearson correlation coefficient (PCC)

Values of p in bold represent a statistically significant difference.

Women feel in greater depth the overload of stereotyped beauty imposed by the media in their daily lives and the pressure to obtain a perfect body.[9] However, when they fail to seek or maintain an adequate nutritional status they feel frustrated, which can directly affect their QOL.[8]

Cohen et al.,[29] in their study, suggest that social networking sites are key factors that need to be considered in the development of body image dissatisfaction. They also point out that exposure to (American for-profit corporation and an online social media and social networking service) Facebook is at least equal to exposure to conventional media as to the detrimental effects on body image dissatisfaction via appearance comparison.

While body image is shown to mediate psychological well-being and individuals' ability to maintain weight loss,[30] some studies show that dissatisfaction with this image is also associated with marked impairment in several aspects of women's quality of life. Jackson & Janssen et al.[31] indicate that low levels of perceived attractiveness and body image are correlated with depressive symptoms. And Mond et al.[5] emphasize dissatisfaction with body image in relation to items related to mental health, psychosocial functioning and at least some aspects of physical health, regardless of their association with body weight.

Nevertheless, another facet explored by Runfola et al.[32] points out that women seem to make considerable efforts, contradicting stereotypes of easy outcome, to maintain some favorable levels of satisfaction. And occasionally they experience dissatisfaction with other aspects of their appearance, especially those affected by aging.

Recent studies have shown associations between body dissatisfaction and unhealthy behaviors related to weight, especially greater use of diets[32, 33] and harmful behaviors for weight control.[32] Blake et al.[33] have observed that those who were dissatisfied with their weight tended to have smaller snacks in greater quantity and, conversely, consume less meals.

Models were developed considering three dependent variables: general quality of life, physical domain and psychological domain. The variables models: environmental and social relations domains did not present an adequate adjustment. The first multiple regression model found that variables BMI ($p < 0.001$), age ($p < 0.001$) and schooling ($p < 0.001$) were independently related to general QOL and BMI inversely. And the last two in a positive way. For the physical domain model, an inverse relationship between BMI ($p < 0.001$) and positive family income ($p = 0.02$) was verified. In the third model with the psychological domain as a dependent variable, an inverse relationship with BMI (< 0.001) and a positive one with age ($p < 0.01$) were verified (Table 5).

**Table 5.** A multiple linear regression model between the general quality of life variable and variables waist circumference, age, schooling and family income of adult and elderly women. Santos, São Paulo, 2014.

| Model | Variables | Standardized coefficients (β) | p* |
|---|---|---|---|
| Model 1 – Overall quality of life | Constant | 14.32 | **< 0.01** |
| | BMI (kg/m²) | – 0.33 | **< 0.01** |
| | Age (years) | 0.20 | **< 0.01** |
| | Education (three categories) | 0.17 | < 0.01 |
| | Family income (three categories)** | 0.03 | 0.47 |
| Model 2 – Physical domain | Constant | 17.54 | **< 0.001** |
| | BMI (kg/m²) | – 0.31 | **< 0.001** |
| | Family income (three categories) | 0.12 | **0.02** |
| Model 3 – Psychological domain | Constant | 16.69 | **< 0.001** |
| | BMI | – 0.34 | **< 0.001** |
| | Age (years) | 0.15 | 0.004 |

*Multiple linear regression model

**Adjustment variable

Values of p in bold represent a statistically significant difference.

As for the relevance of variables education and income, Prättälä et al.[34] emphasize in their study that cultural resources associated with higher schooling and material resources with higher income appear to be key elements for maintaining normal body weight. They also point out that low socioeconomic level, in addition to effects on healthy behaviors and body weight, also diminishes individuals' personal control over their life and work.[34]

Within this perspective, Mansfield et al.,[35] studying a group of mothers, have observed that the social stigma of proving low income was an impediment for some women to seek governmental facilitators for the practice of physical activity. In addition, other barriers were highlighted, such

as the high cost of childcare, especially for those who had more than one child, as well as the cost of transportation to the site and clothing for the practice in question.[35]

With regard to age and quality of life, contrasting results were found by Murtagh et al.,[36] who have evaluated the elderly, mostly women, and found that they were 2.2 times more prone to inactivity than men, and that characteristics such as living alone, being retired and self-assessing emotional health as low were associated with physical inactivity, and that it declines over the years. Notwithstanding, Bryla et al.,[37] who have also surveyed the elderly, mostly women, emphasize that this group's quality of life depends on several factors, such as education, income and family relationships, but main emphasis should be given to aspects related to physical and mental health. These data corroborate results found in the present study, emphasizing the importance of repercussion of physical and psychological domains in maintaining health and quality of life.

It is important to highlight the important role of BMI as an independent variable when it relates to women's overall quality of life. As for this, it is emphasized that women satisfied with their body size report less concern with body weight and shape,[32] and also when they are satisfied with their weight they tend to practice more physical activity and be healthier.[33] Also, Mintem et al.[9] have found that women whose BMI increased over time became more dissatisfied with their body size and consequently their body image.

Interventions for weight loss may improve body image for overweight or obese adults.[30] For overweight women, higher than ideal weight perception can lead to healthy behaviors, whereas for eutrophic women the same situation deserves more attention, since this group is more predisposed to risky behaviors.[9]

French philosopher and sociologist Pierre Bourdieu[38] posits in his social theory that female's body experience is consolidated in a body-to-other experience, that is, by being constantly exposed to objectification, they become a symbolic object, which puts them in a permanent state of bodily insecurity. He also points out that the greater the distance between the socially required body and the *feedback* provided by gazes and judgments from others the more intense is the probability of experiencing discontent for one's own body.

Therefore, it is suggested that the high intensity of the relation of the physically perceptible measures to the quality of life permeates the fields of social appreciation and verdict, which raises the importance of body image and appearance in the individual conception of health, strongly echoing in this population's quality of life.

## Conclusions

All domains and quality of life items had a negative correlation with BMI, waist circumference and fat percentage. Variables BMI, age and schooling were independently associated with women's general quality of life, the first one being negative and the other two in a positive way. It is suggested that the increase in BMI, since it is some variable physically perceptible to women, has a negative impact on the quality of life.

With greater knowledge about factors interfering in adult and elderly female population's health, health professionals can amplify and improve their performance to include, as much as possible, the various dimensions influencing this genre's QOL, with emphasis on nutritional status and body image in order to plan treatments and actions which are more appropriate to prevent diseases for this population.

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