Quality of Life and Associated Factors in Young Workers

José Andrade Louzado 1,*, Matheus Lopes Cortes 1, Márcio Galvão Oliveira 1, Vanessa Moraes Bezerra 1, Sóstenes Mistro 1, Danielle Souto de Medeiros 1, Daniela Arruda Soares 1, Kelle Oliveira Silva 1, Cláudia Nicolaevna Kochergin 1, Vivian Carla Honorato dos Santos de Carvalho 1, Welma Wildes Amorim 2, and Solero Serrate Mengue 3

1 Multidisciplinary Health Institute, Federal University of Bahia, Vitória da Conquista 45029094, Bahia, Brazil; matheuscortes@hotmail.com (M.L.C.); mgalvao@ufba.br (M.G.O.); vanessaenut@yahoo.com.br (V.M.B.); smistro@ufba.br (S.M.); daniellesoutomedeiros@gmail.com (D.S.D.M.); dandani23@yahoo.com.br (D.A.S.); kelle.oliveira@gmail.com (K.O.S.); kochergin62@gmail.com (C.N.K.);
vihonorato@hotmail.com (V.C.H.d.S.d.C.)
2 Department of Natural Sciences, State University of Southwestern Bahia, Vitória da Conquista 45083900, Bahia, Brazil; welma.wilde@uesb.edu.br
3 Graduate Program in Epidemiology, School of Medicine, Federal University of Rio Grande do Sul, Porto Alegre 90035003, Rio Grande do Sul, Brazil; sotero@ufrgs.br
* Correspondence: louzado1@hotmail.com

Abstract: Background: This study aimed to identify the factors associated with the quality of life of young workers of a Social Work of Industry Unit. Methods: This was a cross-sectional study conducted on 1270 workers. Data were collected using a digital questionnaire built on the KoBoToolbox platform that included the EUROHIS-QOL eight-item index to assess quality of life. Demographic, socioeconomic, behavioral, and clinical variables were considered explanatory. The associations were analyzed using the ordinal logistic regression model at a 5% significance level. Results: Men and women had a mean quality of life of 31.1 and 29.4, respectively. Workers that rated their health as “very good” had an odds ratio of 7.4 (95% confidence interval (CI) = 5.17–10.81), and those who rated it as “good” had an odds ratio of 2.9 (95% CI = 2.31–3.77). Both these groups of workers were more likely to have higher levels of quality of life as compared to workers with “regular”, “poor”, or “very poor” self-rated health. Physically active individuals were 30% more likely to have higher levels of quality of life as compared to workers with regular health status, and those who rated it as “good” had an odds ratio of 2.9 (95% CI = 2.31–3.77). After adjusting the model by gender, age group, marital status, socioeconomic class, self-rated health, nutritional status, and risky alcohol consumption, the odds ratio of active individuals remained stable (odds ratio = 1.3; 95% CI = 1.08–1.65). Conclusions: In the present study, self-rated health, physical activity, and gender were associated with young workers’ quality of life.

Keywords: quality of life; occupational health; categories of workers; motor activity

1. Background

Quality of life (QoL) is an important measure for evaluating the health situation of individuals and populations and is strongly influenced by the constant environmental, technological, economic, and labor relation changes. In this sense, QoL is an important indicator of individual and collective health, provided that it is measured based on its complex conceptual framework [1–3].

Since the establishment of the World Health Organization Quality of Life (WHOQOL) group, the World Health Organization (WHO) expanded the concept of QoL, adding to it the individual’s understanding of their life condition in the context of cultural and social values in response to the expectations and concerns encountered in the development of their life plan [1,2].

Several factors interfere with QoL; these are related to the multidimensionality and subjectivity of its conceptual aspects. The worker’s lifestyle can be a determining factor for
health risk behavior, clinical condition, physical activity (PA), and self-rated health. These elements, in turn, potentially affect QoL [1,2,4,5].

In Brazil, the industry and commerce sector accounts for approximately 40% of the country’s formal jobs [6]. Therefore, it is important to measure the QoL levels of formal workers as the results could be used as occupational health indicators, thus contributing to the understanding of health conditions, the construction/implementation of public policies, and the planning of systematized actions for providing care [1–3].

QoL levels in workers are affected by their interaction with the labor market, which requires high productivity but offers inadequate working conditions and low pay most of the time. Some workers still live with occupational and chronic-degenerative diseases, which directly interfere with their QoL and promote presenteeism at work [7,8].

Empirical studies on QoL do not address formal workers; most of the data available on the topic refer to specific groups, such as women, the elderly, and people with chronic diseases. Thus, no information about young and healthy workers, which represents the majority of the workforce, is available. Investigating this topic may contribute to reducing the knowledge gap regarding this group’s QoL levels and add to the theoretical and epidemiological framework of public policies on occupational health.

Identifying the QoL levels of workers and recognizing it as a potential indicator of occupational health may allow the development of health promotion actions, which could make the work environment more compatible with an increasing market production without causing occupational pathologies in workers [3,9,10]. Therefore, this study aimed to identify the factors associated with QoL in young workers from a municipality in Northeast Brazil.

2. Methods

2.1. Study Design and Population

This was a cross-sectional study conducted in Brazil on users of the HealthRise program—a program targeting the reduction of premature death from chronic non-communicable diseases, such as diabetes and hypertension—in Vitória da Conquista, aimed at improving users’ access to primary health services, qualifying care, implementing medical records, and offering special tests to patients with chronic diseases (hypertension and diabetes) [11].

The municipality of Vitória da Conquista is located in Northeastern Brazil, with an estimated population of 338,000 inhabitants in 2019 and a territorial area exceeding 3,700,000 km² [12]. Most of this population lives in urban areas, which corresponds to approximately 87% [12]. The municipality is located in an important road junction that services the outflow of production between Southeastern and Northeastern Brazil and has a service-based economy with a predominance of the health, education, commerce, and civil construction sectors.

2.2. Data Collection

Data were collected at Industry Social Service (SESI), a private, non-profit entity, whose mission is to qualify the workforce and promote workers’ health [13]; thus, the participants were workers assisted by SESI. The inclusion criteria for participants were workers aged 18 years or above, living in the municipality, and having attended SESI for periodic consultations with the occupational doctor. The exclusion criteria were workers coming from other municipalities or those awaiting medical evaluation before dismissal.

Data were collected between August 2017 and July 2018. We sought our study sample from the 3727 workers that scheduled consultations with an occupational physician during this period. However, 339 of them did not attend their consultations, 833 awaited medical evaluation after being dismissed, 516 were from other municipalities, 25 were under 18 years old, and 744 refused to participate in the study, all of which were consequently excluded from the study. Further information about the sample can be found in the "Results" section.
2.2.1. Procedure

Data were collected by trained interviewers (undergraduate health students) using a digital questionnaire built using the KoBoToolbox platform, on tablets. The questionnaire was adapted from the Brazilian National Health Survey 2013 [14] and included information relevant to the outcomes of the project, such as evaluating the self-care of patients with chronic diseases (hypertension and diabetes), evaluating users’ access to health services, and measuring workers’ stress levels and QoL.

Additionally, the objective measurements of weight and height were collected. A properly calibrated SECA 813® portable digital electronic scale was used for measuring weight, with the participants barefoot and wearing light clothing. To measure height, a portable NutriVida® stadiometer was used, with the participants barefoot and in an upright position.

2.2.2. Instruments and Measurement Variables

QoL was considered the outcome variable and was measured using the EUROHIS-QOL eight-item index, an instrument created by WHO together with the WHOQOL group, aimed at developing research instruments that produce health indicators through an economic approach and have a possible application in different countries to facilitate comparison between Brazilian data and data from other countries [1,2].

The EUROHIS-QOL eight-item index instrument was validated and translated into Brazilian Portuguese. It consists of eight questions based on the four WHOQOL-BREF domains: physical health, psychological health, social relationships, and environment, with each item rated on a five-point Likert-type scale ranging from 1 to 5. The total QoL score is obtained by adding the scores on all items, and ranges from 8 to 40, with higher scores indicating higher QoL [1,2]. QoL was treated as a continuous variable and categorized into tertiles.

Demographic, socioeconomic, behavioral, and clinical variables were considered explanatory variables. The Brazil Economic Classification Criterion (Critério de Classificação Econômica Brasil—CCEB) of the Brazilian Association of Research Companies (Associação Brasileira de Empresas de Pesquisa—ABEP), which came into force from 2015, was used with an update of the class distribution in 2016 [15]. The demographic and socioeconomic variables of interest were gender, age, socioeconomic class, marital status, and work shift. Only two categories were considered for marital status: living or not living with a partner. Work shift was also divided into two levels: those working exclusively during daytime and other work shift modalities.

The behavioral variables considered in this study were diet, smoking, alcohol consumption, and PA. Healthy eating was defined as the consumption of greens, vegetables, fruits, and fruit juices, with at least one portion of fruit or fruit juice and two servings of greens and vegetables at least five times a week [14,16]. Workers, who used tobacco in any quantity, even sporadically, were considered smokers (14). Risky alcohol consumption was described as consuming four or more doses of alcohol for women and five or more doses for men on the same occasion within the last 30 days [14]. PA was assessed using the International Physical Activity Questionnaire (IPAQ), and participants who engaged in more than 150 min of PA per week were considered to be physically active [17,18].

The clinical variables included were self-rated health (14) (grouped into three levels: “Very good”, “Good”, and “Regular, Poor, and Very Poor”), and nutritional status, which was classified by body mass index (BMI = weight/height²) and grouped into two categories: non-obese workers (BMI ≤ 29.9 kg/m²) and obese workers (BMI ≥ 30 kg/m²) [19–22].

2.3. Statistical Analysis

The descriptive analysis of the study variables was initially performed. Continuous variables were represented by means, and categorical variables were represented in simple frequencies and percentages. The homogeneity of variance of means was evaluated by Levene’s test. ANOVA or Brown–Forsythe tests were used to determine the differences between means, and a Tukey’s HSD test was used to show the differences. Two-way
ANOVA was used to compare the mean QoL in men and women, taking into account socioeconomic and clinical characteristics.

Cumulative odds ordinal logistic regression stepwise format with proportional odds was used to determine the effect of risky behaviors, clinical conditions, and demographic and socioeconomic determinants on QoL levels. A significance level of 20% \((p < 0.20)\) was used in the model for the explanatory variables. The proportional odds were evaluated by a total likelihood ratio test, comparing the fitted models with models with variable localization parameters. The adjustment quality deviation test indicated that the model had a good fit and significantly predicted the dependent variable. Logistic regression produced estimates, which were calculated by points and intervals with a 95% confidence and a significance level of 5%. Statistical analyses were performed using IBM SPSS Statistics software version 27 (IBM Corp., Armonk, NY, USA).

2.4. Ethical Considerations

The research was approved by the Research Ethics Committee of the Federal University of Bahia/Multidisciplinary Institute in Health—Anísio Teixeira Campus, according to CAEE number 62259116.0.0000.5556. All the participants signed an informed consent form.

3. Results

The mean age of the 1270 workers who participated in the study was 33 years (standard deviation = 10), and most of them were men (80.0%). Of them, 49.5% belonged to social class C and 62.2% were married or lived with a partner. The predominant work shift was the daytime shift (81%). A total of 86.6% reported having good or very good health. The prevalence of obesity was 14.8%, while that of unhealthy eating was 56%. Tobacco use was reported by only 8.4%, while risky alcohol consumption was reported by 28.7%. A total of 62.3% of the workers engaged in PA daily (Table 1).

Table 1. Demographic, socioeconomic, clinical, and behavioral aspects of workers.

| Variable                                    | n    | %    |
|---------------------------------------------|------|------|
| Gender                                      |      |      |
| Male                                        | 1019 | 80.0 |
| Female                                      | 251  | 20.0 |
| Age Group                                   |      |      |
| Up to 29 years                              | 469  | 36.9 |
| 30–39 years                                 | 492  | 38.8 |
| 40–49 years                                 | 217  | 17.1 |
| 50 years or above                           | 92   | 7.2  |
| Socioeconomic Class **                     |      |      |
| A + B1 + B2                                 | 465  | 36.6 |
| C1 + C2                                     | 629  | 49.5 |
| D + E                                       | 176  | 13.9 |
| Marital Status *                            |      |      |
| Married or Living Together                  | 789  | 62.2 |
| Single/Divorced/Widowed                     | 480  | 37.8 |
| Work Shift *                                |      |      |
| Daytime                                     | 1014 | 81.0 |
| Nighttime/Nighttime and Nighttime/Nighttime on duty | 238  | 19.0 |
| Self-Rated Health *                         |      |      |
| Very good                                   | 170  | 13.4 |
| Good                                        | 645  | 50.8 |
| Regular/Poor/Very poor                      | 454  | 35.8 |
| Nutritional Status *                        |      |      |
| Non-obese                                   | 1051 | 85.2 |
| Obese                                       | 183  | 14.8 |
| Eating *                                    |      |      |
| Healthy eating                              | 523  | 44.0 |
Table 1. Cont.

| Variable                              | n    | %   |
|---------------------------------------|------|-----|
| Unhealthy eating                      | 665  | 56.0|
| Tobacco Use *                         |      |     |
| Yes                                   | 107  | 8.4 |
| No                                    | 1162 | 91.6|
| Risky Alcohol Consumption             |      |     |
| Yes                                   | 364  | 28.7|
| No                                    | 906  | 71.3|
| Physical Activity                     |      |     |
| Active                                | 791  | 62.3|
| Non-active                            | 479  | 37.7|
| Quality of Life *                     |      |     |
| Up to 30                              | 532  | 42.1|
| 31–32                                 | 347  | 27.4|
| 33 or more                            | 386  | 30.5|

* Variables with missing data; ** These criteria evaluate individuals’ socioeconomic level through a household assessment. Scores range from 0 to 100 points, with higher scores representing a higher economic stratum: A (45–100 points), B1 (38–44 points), B2 (29–37 points), C1 (23–28 points), C2 (17–22 points), and D/E (≤ 16 points).

The bivariate analysis of socioeconomic and clinical conditions showed a statistically significant difference in the QoL between men and women; men had a higher mean QoL (31.1) than women (29.4). The groups with higher mean QoL were the ≤29 years and ≥50 years age groups with QoL scores of 31.0 and 31.2, respectively, followed by social classes A and B with a score of 31.2, and workers who reported very good health with a score of 33.1 (Table 2).

Table 2. Quality of life and demographic, socioeconomic, clinical, and behavioral characteristics of workers.

| Variable                                      | Quality of Life | P     |
|-----------------------------------------------|-----------------|-------|
| Gender                                        |                 |       |
| Male                                          | 31.11           | 0.000*3|
| Female                                        | 29.44           |       |
| Age Group                                     |                 |       |
| Up to 29 years                                | 31.05           | 0.011*2|
| 30–39 years                                   | 30.71           |       |
| 40–49 years                                   | 30.13           |       |
| 50 years or above                             | 31.28           |       |
| Socioeconomic Class *                         |                 |       |
| A + B1 + B2                                   | 31.26           |       |
| C1 + C2                                       | 30.55           | 0.002*2|
| D + E                                         | 30.33           |       |
| Marital Status                                |                 |       |
| Married or Living Together                    | 30.79           | 0.086*1|
| Single/Divorced/Widowed                       | 30.76           |       |
| Work Shift                                    |                 |       |
| Daytime                                       | 30.81           | 0.652*1|
| Nighttime/Nighttime and                       |                 |       |
| Nighttime/Nighttime on duty                   | 30.68           |       |
| Self-Rated Health                             |                 |       |
| Very good                                     | 33.18           |       |
| Good                                          | 31.50           |       |
| Regular/Poor/Very poor                        | 28.88           |       |
| Nutritional Status                            |                 |       |
| Non-obese                                     | 30.99           | 0.000*3|
| Obese                                         | 29.63           | 0.000*1|
Table 2. Cont.

| Variable                           | Quality of Life | P       |
|------------------------------------|----------------|---------|
| **Eating**                         |                |         |
| Healthy eating                     | 30.91          | 0.258   |
| Unhealthy eating                   | 30.66          |         |
| **Tobacco Use**                    |                |         |
| Yes                                | 30.44          | 0.329   |
| No                                 | 30.81          |         |
| **Risky Alcohol Consumption**     |                |         |
| Yes                                | 31.23          | 0.000   |
| No                                 | 30.60          |         |
| **Physical Activity**              |                |         |
| Active                             | 31.00          | 0.006   |
| Non-active                         | 30.41          |         |

*1 Student’s t-test; *2 ANOVA; *3 Brown–Forsythe; *4 These criteria evaluate individuals’ socioeconomic level through a household assessment. Scores range from 0 to 100 points, with higher scores representing a higher economic stratum: A (45–100 points), B1 (38–44 points), B2 (29–37 points), C1 (23–28 points), C2 (17–22 points), and D/E (≤16 points).

The bivariate analysis of QoL, including risky behavior, habits, and lifestyle, showed statistically significant differences with higher mean QoL for individuals classified as non-obese (30.9), non-smoker (30.8), and physically active (31.0). However, individuals who practiced risky drinking had a higher mean QoL level (31.2) than those who did not (30.6) (Table 2).

The comparison between the QoL in men and women using two-way ANOVA showed statistically significant differences for all demographic, socioeconomic, behavioral, and clinical variables (Table 3).

The ordinal logistic regression analysis showed that QoL was likely to be 30% higher in individuals who were physically active (OR = 1.3; 95% CI = 1.08–1.65), and even after the odds ratio was adjusted for gender, age group, marital status, socioeconomic class, self-rated health, nutritional status, and risky alcohol consumption, it remained stable and statistically significant (Model 5) for active individuals (OR = 1.3; 95% CI = 1.05–1.66) (Table 4).

Males had a higher odds ratio value for QoL than females in all logistic regression models. It is worth noting that after adjusting the model by age group, marital status, and socioeconomic class (Model 3), men were twice as likely to have a higher QoL as women were (Table 4).

Workers who reported having very good (OR = 7.4; 95% CI 5.17–10.81) or good (OR 2.9; 95% CI 2.31–3.77) health (Model 5) were approximately six and seven times more likely to have a higher QoL, respectively, when compared to workers who reported having regular, poor, or very poor health (Table 4).

Model 1: Effect of physical activity without adjustment. Nagelkerke R² = 0.006
Model 2: Physical activity adjusted by gender, age group, and marital status. Nagelkerke R² = 0.035
Model 3: Physical activity adjusted by gender, age group, marital status, and socioeconomic class. Nagelkerke R² = 0.046
Model 4: Physical activity adjusted by gender, age group, marital status, socioeconomic class, and self-rated health. Nagelkerke R² = 0.168
Model 5: Physical activity adjusted by gender, age group, marital status, socioeconomic class, self-rated health, nutritional status, and risky alcohol consumption. Nagelkerke R² = 0.171
### Table 3. Quality of life and demographic, socioeconomic, and clinical characteristics of working men and women.

| Variable                                | Size Effect | Quality of Life | P          |
|-----------------------------------------|-------------|-----------------|------------|
|                                         |             | Men             | Women      |
| Age Group                               | 0.009       | 31.33           | 29.92      | Gender = 0.000 |
| Up to 29 years                          |             | 31.09           | 29.26      | Age = 0.100    |
| 30–39 years                             |             | 30.41           | 29.15      | Gender * Age = 0.390 |
| 50 years or above                       |             | 31.60           | 28.00      |                |
| Socioeconomic Class **                  | 0.010       | 31.77           | 29.82      | Gender = 0.000 |
| A + B1 + B2                             |             | 30.83           | 29.12      | SC = 0.004     |
| C1 + C2                                 |             | 30.57           | 29.00      | Gender * SC = 0.861 |
| D + E                                   |             |                 |            |                |
| Marital Status                          | 0.000       | 31.08           | 29.28      | Gender = 0.000 |
| Married or Living Together              |             |                 |            | MS = 0.433     |
| Single/Divorced/Widowed                 | 0.000       | 31.16           | 29.61      | Gender = 0.000 |
| Work Shift                              |             | 31.18           | 29.45      | WS = 0.493     |
| Night/Daytime and Night/Nighttime on    | 0.000       | 30.89           | 29.21      | Gender * WS = 0.952 |
| duty                                    |             |                 |            |                |
| Self-Rated Health                       | 0.171       | 33.46           | 32.03      | Gender = 0.000 |
| Very good                               |             | 31.63           | 30.83      | SRH = 0.000   |
| Good                                    |             |                 |            | Gender * SRH = 0.050 |
| Regular/Poor/Very Poor                  |             | 29.38           | 28.88      |                |
| Nutritional Status                      | 0.017       | 31.23           | 29.92      | Gender = 0.000 |
| Non-obese                               |             | 30.40           | 27.35      | NS = 0.000     |
| Eating                                  | 0.001       | 31.37           | 29.19      | Gender * NS = 0.011 |
| Healthy eating                          |             | 30.90           | 29.71      | Eating = 0.926 |
| Unhealthy eating                        |             |                 |            | Gender = 0.000 |
| Tobacco Use                             | 0.001       | 30.57           | 27.25      | Tobacco use = 0.131 |
| Yes                                     |             | 31.17           | 29.48      | Gender * Tobacco use = 0.385 |
| No                                      |             |                 |            |                |
| Risky Alcohol Consumption               | 0.006       | 31.48           | 29.16      | Gender = 0.000 |
| Yes                                     |             | 30.93           | 29.50      | Alcoholism = 0.764 |
| No                                      |             |                 |            | Gender * Alcoholism = 0.200 |
| Physical Activity                       | 0.006       | 31.38           | 29.42      | Gender = 0.000 |
| Active                                  |             | 30.66           | 29.48      | PA = 0.208     |
| Non-active                              |             |                 |            | Gender * PA = 0.137 |

* Two-way ANOVA; ** These criteria evaluate individuals’ socioeconomic level through a household assessment. Scores range from 0 to 100 points, with higher scores representing a higher economic stratum: A (45–100 points), B1 (38–44 points), B2 (29–37 points), C1 (23–28 points), C2 (17–22 points), and D/E (≤ 16 points).
### Table 4. Association between quality of life and demographic, socioeconomic, clinical, and behavioral variables.

| Variable                        | Model 1 |          | Model 2 |          | Model 3 |          | Model 4 |          | Model 5 |          |
|---------------------------------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|
|                                 | B (OR)  | 95% CI   | B (OR)  | 95% CI   | B (OR)  | 95% CI   | B (OR)  | 95% CI   | B (OR)  | 95% CI   |
| **Physical Activity**           |         |          |         |          |         |          |         |          |         |          |
| Non-active                      | 1       |          | 1       |          | 1       |          | 1       |          | 1       |          |
| Active                          | 0.288   | 1.33 (1.08–1.65) | 0.262   | 1.30 (1.05–1.61) | 0.275   | 1.31 (1.06–1.63) | 0.271   | 1.31 (1.05–1.64) | 0.279   | 1.32 (1.05–1.66) |
| **Gender**                      |         |          |         |          |         |          |         |          |         |          |
| Female                          | 0.634   | 1.88 (1.44–2.47) | 0.702   | 2.02 (1.54–2.65) | 0.633   | 1.88 (1.41–2.49) | 0.611   | 1.84 (1.37–2.48) |
| Male                            | 1       |          | 1       |          | 1       |          | 1       |          | 1       |          |
| **Age Group**                   |         |          |         |          |         |          |         |          |         |          |
| 50 years or above               | 0.043   | 0.95 (0.63–1.47) | 0.053   | 1.05 (0.68–1.62) | 0.054   | 0.94 (0.61–1.48) | 0.071   | 0.93 (0.59–1.46) |
| Up to 29 years                  | −0.132  | 0.88 (0.56–1.32) | −0.053  | 0.94 (0.62–1.44) | −0.103  | 0.90 (0.59–1.39) | −0.121  | 0.89 (0.57–1.37) |
| 30–39 years                     | −0.494  | 0.61 (0.39–0.96) | −0.393  | 0.68 (0.42–1.07) | −0.361  | 0.69 (0.43–1.12) | −0.372  | 0.69 (0.43–1.11) |
| 40–49 years                     |         |          |         |          |         |          |         |          |         |          |
| Marital Status                  |         |          |         |          |         |          |         |          |         |          |
| Single/Divorced/Widowed         |         |          |         |          |         |          |         |          |         |          |
| Married or Living Together      | 0.095   | 1.09 (0.88–1.38) | 0.118   | 1.12 (0.89–1.41) | 0.146   | 1.16 (0.91–1.47) | 0.178   | 1.19 (0.93–1.52) |
| **Socioeconomic Class * **      |         |          |         |          |         |          |         |          |         |          |
| D + E                           | 0.562   | 1.75 (1.27–2.42) | 0.509   | 1.66 (1.19–2.31) | 0.525   | 1.69 (1.20–2.38) |
| A + B1 + B2                     |         |          |         |          |         |          |         |          |         |          |
| C1 + C2                         | 0.168   | 1.18 (0.88–1.59) | 0.223   | 1.25 (0.92–1.69) | 0.244   | 1.28 (0.94–1.74) |
| Self-Rated Health               |         |          |         |          |         |          |         |          |         |          |
| Regular/Poor/Very poor          | 1       |          | 1       |          | 1       |          | 1       |          | 1       |          |
| Very good                       | 2.039   | 7.68 (5.37–11.00) | 2.012   | 7.47 (5.17–10.81) | 2.012   | 7.47 (5.17–10.81) |
| Good                            | 1.094   | 2.98 (2.34–3.79) | 1.083   | 2.95 (2.31–3.77) |
| Nutritional Status              |         |          |         |          |         |          |         |          |         |          |
| Obese                           | 0.228   | 1.26 (0.91–1.72) | 0.228   | 1.26 (0.91–1.72) |
| Non-obese                       | 1       |          | 1       |          | 1       |          | 1       |          | 1       |          |
| Risky                           |         |          |         |          |         |          |         |          |         |          |
| Alcohol Consumption             |         |          |         |          |         |          |         |          |         |          |
| No                              | 0.152   | 1.16 (0.91–1.48) | 0.152   | 1.16 (0.91–1.48) |
| Yes                             |         |          |         |          |         |          |         |          |         |          |

OR: odds ratio; CI: confidence interval; * These criteria evaluate individuals’ socioeconomic level through a household assessment. Scores range from 0 to 100 points, with higher scores representing a higher economic stratum: A (45–100 points), B1 (38–44 points), B2 (29–37 points), C1 (23–28 points), C2 (17–22 points), and D/E (≤ 16 points).
4. Discussion

The main factors associated with QoL in young workers in the present study were the male gender and regular PA practice, even in the model adjusted (ordinal logistic regression) for sociodemographic, economic, behavioral, and clinical variables. The stable QoL level in physically active individuals, even in the analysis model, reinforces the positive association of PA with all QoL domains.

The studied population of formal workers comprises young individuals, predominantly males, which is similar to other studies conducted in Brazil, since 56% of formal jobs are occupied by men [23]. Although there is a movement in government and non-governmental institutions in the contemporary world for valuing and inserting women in the labor market, these actions cannot guarantee gender equality in the productive sector.

Most workers in the present sample were married, practiced PA, and reported having good or very good health. Moreover, some studies indicate a positive relationship between PA and self-rated health. This association may be due to the benefits generated by the practice of PA, such as reduced incidence of diseases, improved self-esteem, and cognitive ability, and promotion of social contact with people with healthy habits, which may favor a better self-rating of health conditions, which is a good health indicator for the population [24,25].

Self-rated health has good reliability and validity not only as a predictor of morbidity and mortality but also for identifying the health needs of the formal worker population, and, more objectively, for stratifying their clinical health conditions and behavioral attitudes [25,26]. Most workers (men and women) who reported having good or very good health also reported higher QoL levels, as identified in a Brazilian population-based study [26] in which self-rated health was 74.2%, a percentage that reduces as the number of morbidities increases, leading to worse self-rated health and reduced QoL.

The study showed better QoL levels among workers who practiced risky drinking. This result may be partially explained by the fact that the workers in this study were mostly young. Another explanation could be that as alcohol consumption is often associated with moments of leisure and partying, it may subjectively be perceived as spending quality time [25,27].

Gender is an important variable when we consider the historically consolidated differences between men and women, and the same was found in the results of this study. Men had a higher quality of life and occupied more job positions than women did. Several studies on the role of gender in health present possible causes for these differences, including double working hours for women (employment and home activities), number of children, and the difficulty of entering the labor market faced by women [10,23].

In this sense, the power relations established by a gender bias have historically built the social division of labor, based on biological aspects associated with sexist social stereotypes and cultural norms of appreciation of men, consequently limiting women to unpaid activities and jobs considered to be of little administrative and economic relevance. This trend continues today, as can be seen in the income gap by gender, such that in 2019, Brazilian women had a mean income 11.63% lower than that of men [6,28,29]. The inclusion of women in precarious job positions with low pay has a negative impact on QoL, as income is one of the determinants of lifestyle, access to goods and services, and, consequently, health condition, which is influenced by working life [28,30].

Physically active individuals showed higher QoL levels than those who were inactive. We constructed a model in which the main variables of the database were used to better understand their relationship with the outcome of the study (QoL). The main exposure variable in the model was PA, as the available literature shows that there is a relationship between PA and QoL level. The model derived from ordinal logistic regression showed a certain stability of QoL levels in physically active individuals [5,31,32]. This is because the benefits of PA go beyond the improvement of the clinical and biological condition since it promotes social interaction, the establishment of bonds of friendship, and emotional
balance, which are subjective and integral elements of the multidimensional aspect of the QoL construct [32].

Our findings support that PA is a variable that directly and indirectly positively influences all domains of QoL (physical, psychological, social, environmental, and general health condition) [1]. The results of studies show that PA induces behavioral change, which is fundamental for disease control and prevention. Thus, the incorporation of PA in daily life becomes an important therapeutic alternative, capable of improving general health conditions, which necessarily results in better QoL levels for workers [31,32].

Most workers were considered active. This may be due to the benefits of PA practice, the desire for a better body image, and the availability of public equipment (bike paths, hiking tracks, and fitness equipment in squares and health units). Moreover, the population mostly comprised young people [33]. However, a significant proportion of workers were inactive; this may be a reflection of technological evolution that is providing comfort, increased productivity, reduction of time requirements and work, and at the same time, less physical effort.

No statistically significant differences in QoL were found in terms of age and marital status in this study. Although age is an important factor in the labor market, it was not present in the regression and was associated with increased QoL levels. These results differ from those found in the literature [10]. However, when age is analyzed separately, workers over 50 years of age had the highest QoL means, not agreeing with the findings of other studies [9,10]. This contrast may be due to the greater financial resources and professional stability of these workers [34].

The higher socioeconomic classes (A, B1, and B2) had higher incomes, and consequently, greater purchasing power of goods and services, stability in work relationships, and more job satisfaction, which are determining factors for physical and mental health, essential elements for QoL [15,26,35]. Their economic and social position seems to be a determining factor of QoL levels, which is consistent with the results of our study: workers of higher socioeconomic classes had better QoL in all proposed models [26,35].

Self-rated health is influenced by subjective and objective criteria, and according to previous studies, it is a good predictor of mortality, being a reflection of biological, socioeconomic, and behavioral aspects [36]. We found that individuals who reported having better health had higher QoL levels. Nutritional status and alcohol consumption, in turn, were not associated with QoL since the results did not show statistical significance [25].

The findings of this study should be interpreted considering some methodological limitations. First, the presence of acute pathologies was not assessed when data were collected, which may have influenced QoL levels. Second, in terms of the study design, as cross-sectional studies are limited to identifying associations and causal relationships cannot be established, reverse causality can occur [37]. For example, although lower levels of QoL were associated with obesity, it can be argued that the problems caused by overweight (chronic diseases, emotional damage, and functional limitations) obstruct QoL.

The results of this study support the use of QoL as an epidemiological indicator for the planning of health-related arrangements for workers. Because QoL is an indicator of health conditions, it can be adopted into all levels of the healthcare system, especially primary care, which is usually a worker’s first point of contact with the health system, to identify general health needs and diagnose possible occupational diseases.

5. Conclusions

Most of the participant workers engaged in regular PA, and demographic, socioeconomic, clinical, and some behavioral factors had little influence on QoL levels. The results of this study may contribute to guiding the implementation of public policies that systematically promote PA in the daily lives of workers. It also highlights the need for further studies to investigate factors associated with QoL in women to confirm and possibly deepen the understanding of the present results.
Author Contributions: J.A.L.: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing—original draft, Writing—review and editing; M.L.C.: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing—review and editing; M.G.O.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; V.M.B.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; D.S.d.M.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; C.N.K.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; V.C.H.d.S.d.C.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; W.W.A.: Conceptualization, Data curation, Investigation, Methodology, Writing—review and editing; S.S.M.: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing—original draft, Writing—review and editing. All authors have read and agreed to the published version of the manuscript.

Funding: The HealthRise Vitória da Conquista study was funded by the Medtronic Foundation (Grant Agreement 47535) through the HealthRise program, a global initiative led by the Abt Associates and Institute for Health Metrics and Evaluation designed to provide access to chronic illness care for individuals in underserved communities. This study also was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior—Brazil (CAPES)—Finance Code 001. Medtronic Foundation and CAPES had no role in the study design, collection, analysis, or interpretation of the data, writing the manuscript, or the decision to submit the paper for publication.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Multidisciplinary Health Institute, Federal University of Bahia, (protocol code 1.861.073 approved in 12 December 2016).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: All the authors declare that they have no conflicts of interest.

Abbreviations
QoL: Quality of life; WHOQOL: World Health Organization Quality of Life; WHO: World Health Organization; PA: Physical activity; SESI: Serviço Social da Indústria (Social Work of Industry Unit); CCEB: Critério de Classificação Econômica Brasil (Brazil Economic Classification Criterion); ABEP: Associação Brasileira de Empresas de Pesquisa (Brazilian Association of Research Companies); IPAQ: International Physical Activity Questionnaire; BMI: Body mass index.

References
1. Pire, A.C.T. Application and Evaluation of the Psychometric Properties of the EUROHIS-QOL 8-Item Index in a Brazilian Sample. Master’s Thesis, Federal University of Rio Grande do Sul, Porto Alegre, Brazil, 2016.
2. Power, M. Development of a common instrument for quality of life. In EUROHIS: Developing Common Instruments for Health Surveys; Nosikov, A., Gudex, C., Eds.; ISO Press: Amsterdam, The Netherlands, 2003; pp. 145–164. Available online: http://www.euro.who.int/__data/assets/pdf_file/0015/101193/WA9502003EU.pdf (accessed on 21 September 2020).
3. Campos, M.O.; Neto, J.F.R. Quality of life: An instrument for health promotion. Sci. Collect. Health 2008, 9, 232–239.
4. Gill, D.P.; Blunt, W.; Boa Sorte Silva, N.C.; Stiller-Moldovan, C.; Zou, G.Y.; Petrella, R.J. The HealtheSteps™ lifestyle prescription program to improve physical activity and modifiable risk factors for chronic disease: A pragmatic randomized controlled trial. BMC Public Health 2019, 19, 841. [CrossRef] [PubMed]
5. Da Oliveira, L.S.S.C.B.; Souza, E.C.; Rodrigues, R.A.S.; Fett, C.A.; Piva, A.B. The effects of physical activity on anxiety, depression, and quality of life in elderly people living in the community. Trends Psychiatry Psycholother. 2019, 41, 36–42. [CrossRef]
6. Sumário_Executivo_RAIS_2019.pdf. Available online: http://pdeh.mte.gov.br/images/RAIS/2019/2-Sum%C3%A9rio_Executivo_RAIS_2019.pdf (accessed on 17 November 2020).
7. Pie, A.C.S.; de Fernandes, R.C.P.; Carvalho, F.M.; Porto, L.A. Factors associated with presenteeism in industry workers. Rev. Bras. Occupational. Health 2020, 45, e13.
8. Marques-Duarte, M.S.; da Purity, D.Y. Association between job satisfaction and workers’ quality of life in a public maternity hospital in the far north of Brazil. Rev. Bras. Saude Materno Infant. 2019, 19, 723–732. [CrossRef]
9. Marcinke, P.R.; de Castro, S.S.; de Castro, S.S.; Meirelles, M.C.C.C.; Haas, V.J.; de Walsh, I.A.P. Quality of life, sociodemographic and occupational factors of female workers. Ciênc Saúde Coletiva 2019, 24, 749–760. [CrossRef]
10. Almeida-Brasil, C.C.; Silveira, M.R.; Silva, K.R.; Lima, M.G.; de Faria, C.D.C.M.; Cardoso, C.L.; Menzel, H.-J.K. Quality of life and associated characteristics: Application of WHOQOL-BREF in the context of Primary Health Care. Ciênc Saúde Coletiva 2017, 22, 1705–1716. [CrossRef]
11. Flor, L.S.; Wilson, S.; Bhatt, P.; Bryant, M.; Burnett, A.; Camarda, J.N.; Chakravarthy, V.; Chandrashekar, C.; Chaudhury, N.; Cimini, C.; et al. Community-based interventions for detection and management of diabetes and hypertension in underserved communities: A mixed-methods evaluation in Brazil, India, South Africa and the USA. BMJ Glob Health 2020, 5, e001959. [CrossRef]
12. IBGE | Cities@ | Bahia | Vitória da Conquista | Panorama. Available online: https://cidades.ibge.gov.br/brasil/ba/vitoria-da-conquista/panorama (accessed on 13 January 2020).
13. Lifestyle and Leisure habits of Workers in Brazilian Industries: General Report; SEPSI: Brasilia, Brazil, 2009.
14. Brazilian Institute of Geography and Statistics, Organizer. National Health Survey, 2013: Perception of Health Status, Lifestyles and Chronic Diseases: Brazil, Large Regions and Federation Units; Brazilian Institute of Geography and Statistics—IBGE: Rio de Janeiro, Brazil, 2014; 180p.
15. Brazil Criterion—ABEP. Available online: http://www.abep.org/criterio-brasil (accessed on 13 January 2020).
16. Brazil. Ministry of Health. Health Surveillance Secretariat. Department of Surveillance of Diseases and Non-Communicable Diseases and Health Promotion. Vigetel Brasil 2017: Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey: Estimates of the Frequency and Sociodemographic Distribution of Risk and Protective Factors for Chronic diseases in the Capitals of the 26 Brazilian States and the Federal District in 2017. 1st ed. Brasilia, Ministry of Health: Ministry of Health, Secretariat of Health Surveillance, Department of Surveillance of Noncommunicable Diseases and Diseases and Health Promotion. 2018; 118p. Available online: https://bvsms.saude.gov.br/bvs/publicacoes/vigetel_brasil_2017_vigilancia_fatores_riscos.pdf (accessed on 22 March 2020).
17. Matsudo, S.; Araujo, T.; Matsudo, V.; Andrade, D.; Andrade, E.; Oliveira, L.C. International Physical Activity Questionnaire (IPAQ): Study of validity and reproducibility in Brazil. Phys. Act. Health 2001, 6, 5–18.
18. World Health Organization. Global Recommendations on Physical Activity for Health. 2010. Available online: http://www.ncbi.nlm.nih.gov/books/NBK305057/ (accessed on 13 January 2020).
19. HEALTH INDICATORS–SISVAN. Available online: http://tabnet.datasus.gov.br/cgi/SISVAN/CNV/notas_sisvan.html (accessed on 7 April 2020).
20. Ministry of Health. Guidelines for the Collection and Analysis of Anthropometric Data in Health Services. Available online: http://bvsms.saude.gov.br/bvs/publicacoes/orientacoes_coleta_analise_dados_antropometricos.pdf (accessed on 7 April 2020).
21. World Health Organization, Organizer. Obesity: Preventing and Managing the Global Epidemic: Report of a WHO Consultation; WHO technical report series; World Health Organization: Geneva, Switzerland, 2000; 253p.
22. National Supplementary Health Agency (ANS). Manual of Guidelines for Tackling Obesity in Brazilian Supplementary Health; ANS: Rio de Janeiro, Brazil, 2017.
23. University of Caxias do Sul. NID Labor Observatory. Annual Bulletin Women and Labor Market; UCS: Caxias do Sul, Brazil, 2019.
24. Dong, W.; Pan, X.F.; Yu, C.; Lv, J.; Guo, Y.; Bian, Z.; Yang, L.; Chen, Y.; Wu, T.; Chen, Z.; et al. Self-Rated Health Status and Risk of Incident Stroke in 0.5 Million Chinese Adults: The China Kadoorie Biobank Study. J. Stroke 2018, 20, 247–257. [CrossRef]
25. De Andrade, G.F.; Loch, M.R.; Silva, A.M.R. Changes in health-related behaviors as predictors of changes in self-perceived health: A longitudinal study (2011–2015). Cad. Public Health. 2019, 35, e00151418.
26. Peres, M.A.; Masiero, A.V.; Longo, G.Z.; da Rocha, G.C.; Matos, I.B.; Najnie, K.; de Oliveira, M.C.; de Arruda, M.P.; Peres, K.G. Self-rated health in adults in Southern Brazil. Rev. Saúde Pública 2010, 44, 901–911. [CrossRef]
27. Nagelhout, G.E.; Abreu, M.N.S. Factor associated with self-reported work-related musculoskeletal disorders in Brazilian adults. Rev. Saúde Pública 2017, 51 (Suppl. 51). Available online: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-8910201700020301&lng=en&tlng=pt (accessed on 22 December 2020).
28. Hafner, M.; Pollard, J.; Van Stolk, C. Incentives and Physical Activity: An Assessment of the Association between Vitality’s Active Rewards with Apple Watch Benefit and Sustained Physical Activity Improvements. RAND Corporation. 2018. Available online: https://www.rand.org/pubs/research_reports/RR2870.html (accessed on 30 March 2020).
29. Klein, S.K.; Fonfonka, A.; Hirdes, A.; Jacob, M.H.V.M. Quality of life and physical activity levels of residents of therapeutic residences in southern Brazil. Ciênc Saúde Coletiva 2018, 23, 1521–1530. [CrossRef]
30. Almeida-Brasil, C.C.; Silveira, M.R.; Silva, K.R.; Lima, M.G.; de Faria, C.D.C.M.; Cardoso, C.L.; Menzel, H.-J.K. Quality of life and associated characteristics: Application of WHOQOL-BREF in the context of Primary Health Care. Ciênc Saúde Coletiva 2017, 22, 1705–1716. [CrossRef]
31. Hafner, M.; Pollard, J.; Van Stolk, C. Incentives and Physical Activity: An Assessment of the Association between Vitality’s Active Rewards with Apple Watch Benefit and Sustained Physical Activity Improvements. RAND Corporation. 2018. Available online: https://www.rand.org/pubs/research_reports/RR2870.html (accessed on 30 March 2020).
32. Klein, S.K.; Fonfonka, A.; Hirdes, A.; Jacob, M.H.V.M. Quality of life and physical activity levels of residents of therapeutic residences in southern Brazil. Ciênc Saúde Coletiva 2018, 23, 1521–1530. [CrossRef]
33. Bicalho, P.G.; Géa-Horta, T.; Moreira, A.D.; Gazzinelli, A.; Velasquez-Melendez, G. Association between sociodemographic and health-related factors with the practice of walking in rural areas. Ciênc Saúde Coletiva 2018, 23, 1323–1332. [CrossRef] [PubMed]
34. Freitas, M.C.; Campos, T.D.; Gil, C.A. Expectations and conceptions of work in old age in middle-aged men. *Estud. Interdiscip. Psicol.* 2017, 8, 43. [CrossRef]

35. Shockey, T.M.; Zack, M.; Sussel, A. Health-related quality of life among US workers: Variability across occupation groups. *Am. J. Public Health* 2017, 107, 1316–1323. [CrossRef]

36. De Melo, D.M.; Falsarella, G.R.; Neri, A.L. Self-rated health, social involvement and frailty in elderly outpatients. *Rev. Bras. Geriatr. E Gerontol.* 2014, 17, 471–484.

37. Bonita, R.; Beaglehole, R.; Kjellström, T. *Basic Epidemiology*, 2nd ed.; Livraria Santos Editora Comércio e Importação Ltd.: SãoPaulo, Brazil, 2010; Available online: https://apps.who.int/iris/bitstream/handle/10665/43541/9788572888394_eng.pdf?sequence=5&isAllowed=y (accessed on 11 April 2020).