Lifestyle, morbidity and multimorbidity in adult Quilombolas

Ingred Laila da Silva Almeida¹, Saul Ricardo dos Santos¹, Bruno Morbeck de Queiroz², Ricardo Franklin de Freitas Mussi³

¹Universidade do Estado da Bahia (UNEB) – Guanambi (BA), Brasil.  
²Faculdade de Tecnologia e Ciências (FTC) – Vitória da Conquista (BA), Brasil.  
³Programa de Pós-Graduação em Ensino, Linguagem e Sociedade, UNEB – Caetité (BA), Brasil.

ABSTRACT

Introduction: The negative lifestyle has been associated with adverse health conditions, predisposing to the increase of morbidity and mortality in various populations. Objective: To evaluate the association of lifestyle with morbidities and multimorbidity in adult quilombolas, residents of slave descendant communities (quilombos). Methods: Cross-sectional study with a representative sample of adult living in quilombos located in a geographical region of Bahia State, in Brazil. Data were obtained by applying a standardized form for sociodemographic characteristics and morbidities. Lifestyle was evaluated using the questionnaire Perfil de Estilo de Vida Individual (PEVI), encompassing the domains: nutrition, physical activity, preventive behavior, social relationships and stress control. Poisson regression was used to estimate prevalence ratios, with statistical significance for p<0.05. Results: Negative PEVI score were identified in 18.5% of the quilombolas. High blood pressure, central obesity and multimorbidity affected 53.5%, 56.2% and 50.2% of the population, respectively. Men had more positive PEVI score, however the nutrition domain was more negative. Physical activity and stress control domains from women were more negative. Central obesity was associated to the domain of physical activity. Dyslipidemias and multimorbidity were associated with the domain of preventive behavior. Conclusion: About one fifth of the quilombolas presented negative PEVI and high prevalence of morbidity and multimorbidity. The different associations between PEVI and its domains (physical activity, preventive behavior and stress control) reveal that the adoption of positive health habits infers in the presence of morbidities.

Keywords: African Continental Ancestry Group; morbidity; lifestyle.

INTRODUCTION

The high prevalence of diseases represents a threat to well-being in different populations. Chronic non-communicable diseases (CNCD) are characterized by indefinite periods of latency and prolonged evolution¹, while multimorbidity is characterized by the presence of two or more chronic conditions in the same individual, which may or may not have relationships with each other and represent a large burden of disease to be faced².
In turn, the lifestyle (LS) and the way of conducting it, includes different questions and dimensions that are self-determined or assimilated socially or culturally, influenced by ethnic-racial issues and with impacts on health.

Studies focusing on the health of the remaining quilombola population, made up of descendants of enslaved blacks, freed and/or free, are scarce. The association between worse health conditions and a situation of social vulnerability results in restrictions on access to goods and services for the remaining quilombolas, who can contribute negatively to the LS. Investigations pointed to issues of negative LS in quilombolas. However, no other studies were identified that verified its different dimensions simultaneously.

Considering the insufficient availability of information regarding LS and its association with NCDs and multimorbidities and, because of this, they make it difficult to project proposals for health promotion in this community profile, this research aims to assess the association of lifestyle with morbidities and multimorbidities in/among quilombola adults.

METHODS

The geographical microregion of Guanambi, Bahia, Brazil, with 18 municipalities, a territorial area of 22,668,688 square kilometers and 42 contemporary quilombos certified in 2016, distributed in 10 municipalities, comprised the empirical field investigated. To estimate the population, approximately 80 families in each community were considered, in addition, the expectation of two adults (>18 years) for each family was adopted, determining a population of 6720 residents.

For the sample calculation, correction for a finite population was used, using the prevalence for an unknown outcome, therefore 50%. 95% confidence was still assumed, five percent as a sampling error, 1.5 times correction to correct the conglomerate effect (represented by the randomly selected quilombola community). 30% were also added considering the possibility of refusals and another 20% for possible losses and adjustment of confusion. In this sense, a sample of 818 subjects was determined.

The communities were drawn at random, with replacement for refusals. In the end, 14 quilombosas participated, there were three refusals, after visiting and talking with representatives of residents’ associations. Upon confirmation of the interest of the selected community, all adults residing during the collection period were considered eligible.

The collections were carried out through previous scheduling of dates with the respective residents’ associations. To prevent daily activities from promoting absences, the collection days were concentrated on weekends and holidays. The questionnaires were applied through face-to-face interviews, developed by a team of health professionals and/or academics, after training for the function.

The refusals were defined by the non-acceptance of invitations to participate in the activities on the days of the collections. A total of 850 quilombolas attended the research activities and accepted to participate through the subscription or, given the provision of the fingerprint, in the Free and Informed Consent Term and made up the effective sample of the investigation. The refusal rate was 17.07%.

The exclusion criteria for the interviews were expressed by the presence of cognitive impairment or inability to communicate independently of the adult. In the case of anthropometric measures, exclusions were defined when the participant was bedridden, if they had limb amputations, were in a cast, pregnant women and/or nursing mothers for less than six months. The absence of measure(s) and/or response(s) characterized the losses.

LS was assessed using the Individual Lifestyle Profile (PEVI), an instrument validated for Brazilian adults, composed of the following dimensions: nutrition, physical activity, preventive behavior, relationships, stress control. Each dimension contains three questions that allow four answers (no, sometimes, almost always, always) with a progressive score from zero to three. The general score was categorized as ‘negative’ (0-22 points) and positive (23-45 points), as well as in the domains (negative for 0-4 points; positive for 5-9 points).

Initially, the occurrence of chronic disease (yes/no) was considered when the answer was positive if “Has a doctor or nurse ever told you that you have (hypertension, diabetes, arthritis/rheumatism/arthrosis and dyslipidemias)” according to an instrument validated for the remaining quilombola population.

Waist circumference was measured with the aid of a metal measuring tape for measurement in humans (Sanny, model sn-4010, 2 meters long, 0.6 cm wide and 0.1 mm resolution). The protocols of the International Society for the Advancement of Kinanthropometry (ISAK) were adopted, with a duplicate when the initial measures were equal and a third measure when the first two showed differences, using the median for analysis. These measurements took place in a closed environment, at the same time and by a single ISAK-certified evaluator.

Blood pressure (BP) was obtained with a semiautomatic sphygmomanometer (Omron HEM-742INT) validated. The measurements were performed in triplicate, after at least 10 minutes of rest. The subjects were seated, with their feet flat on the floor, their left arm supported at heart level, with the palm open and facing upwards. For the definition of the PA measure, the arithmetic mean between the values.

Blood cholesterol and blood glucose were determined from blood samples extracted after an eight-hour fast, by intravenous puncture in the median antecubital vein, using a
vacuum system, properly separated and identified, as indicated by the Brazilian Society of Clinical Pathology and Laboratory Medicine. Initially, blood samples were stored in a cool box, with refrigeration, and later they were transported to the accredited laboratory, where the blood was processed and analyzed by the automated colorimetric enzymatic method (Cobas Mira Plus, Roche®).

The reference values for the collected variables and adopted classification were: High cholesterol (presence of ≥240 mg/dL and/or self-report of dyslipidemia), fasting hyperglycemia (≥100 mg/dL or self-report of diagnosis and diabetes), blood pressure high (systolic pressure ≥140 mmHg and/or diastolic pressure ≥90 mmHg, or self-report of diagnosis of high blood pressure). Central obesity was defined as >90 cm for men and >80 cm for women, according to cutoff points for Latin American adults16.

The evaluation of morbidities and multimorbidities considered the diagnostic self-reference and/or the results of the direct evaluation of the variables for screening/diagnosing obesity, blood pressure, cholesterol and glycemia. For the classification of multimorbidity, the presence of two or more morbidities in the same individual was considered2.

Sociodemographic variables: sex (female, male); age (full years); race/color (black, others); marital status (with a partner, without a partner); education (literate, illiterate); employment situation (without remuneration, with remuneration); family income (>minimum wage, <minimum wage, for a salary of R$880.00 in force in 2016).

Descriptive statistics procedures were adopted to characterize the sample. The association with prevalences related to PEVI and the other variables were estimated for the reasons of prevalence, based on Poisson regression. The comparison between PEVI and sex was performed using Pearson’s Chi-square test. Significant associations were considered, variables that presented the level of significance adopted in the study of maximum 5% and the confidence interval of 95%.

The present analysis used data derived from a larger population-based epidemiological research, called “Epidemiological Profile of Quilombolas from Bahia”, authorized by the Ethics Committee in Research with Human Beings of the University of the State of Bahia (CEP/UNEB), under opinion 1,386.019/2016, developed between February and November 2016.

RESULTS

The sample of 850 subjects was composed of 520 women and 330 men. The ages ranged from 18 to 60 years, with a higher frequency in the 18 to 30 age group (24.7%), mainly among women (28.3%). The absolute majority declared themselves black, 88.5% of women and 83.5% of men. In the same sense, 76.5% were maritally living with a partner and 70.0% reported family income of up to one minimum wage (Table 1).

High blood pressure and central obesity were the most frequent morbidities, affecting 53.5% and 56.2% of adults, respectively. Multimorbidity was present in 50.2% of the participants. The prevalence of central obesity was significantly more prevalent among women (Table 1).

The PEVI indicated that 18.5% of quilombolas had negative LS. The dimensions related to physical activity and food were the most negative, affecting 57.0% and 48.0% of respondents, respectively. Men showed PEVI significantly (p<0.05) more positive than women. However, considering the dimensions separately,
men showed more negative eating habits (53.8%), while women stood out negatively in physical activity (61.7%) and stress control (25.4%) (Table 2).

When analyzing the associations of PEVI and its domains with CNCD and multimorbidities, a significant association (p<0.05) was found between central obesity and the domain of physical activity, as well as between dyslipidemia and multimorbidity with Preventive Behavior (Table 3). In this sense, presenting negative LS in Physical Activity is related to an 8% lower probability for central obesity). Positive preventive behavior is associated with a higher prevalence of arthritis/rheumatism and dyslipidemia and less multimorbidities (PR=0.97).

**DISCUSSION**

It is possible that this is the first study with results of analysis of the PEVI and its dimensions in quilombo residents. The results found in the quilombola communities in the region are worrying in view of the already reported difficulty in accessing health care, in addition to the reports of acts of racism committed by professionals in the area17, and the precarious availability of infrastructure* regularly provided to black populations. In the same sense, poor conservation of access to communities, absence or lack of supply of energy and water is recurrent. Furthermore, health care is often restricted to the presence of a community agent responsible only for basic services (guidelines and blood pressure control and medical appointments).

The simultaneous assessment of the five lifestyle domains has been little explored in previous studies. However, a survey carried out in quilombola communities from Bahia state reported high prevalence of insufficient physical activity and inadequate nutritional status18. In the same perspective, in the present study, the behaviors related to eating habits and the adoption of recommended levels of physical activity were the ones with the greatest impairment when compared to the other domains evaluated.

In this analysis, women presented a more negative general PEVI than men. This result contrasts with other studies, with men showing more negative behaviors, becoming the main targets of severe and chronic health conditions and even death due to lack of care19.

Such a more negative representation among women can be related to aspects of life that include the environment of residence, possibilities of leisure, food, work and remuneration. Factors that include discrimination in work relationships and overload with female domestic responsibilities must also be considered20. In this

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### Table 2: Frequency of general lifestyle scores and domains by sex in Quilombolas. Guanambi, Bahia, Brazil, 2016.

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td><strong>Lifestyle</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>273</td>
<td>85.8</td>
<td>397</td>
</tr>
<tr>
<td>Negative</td>
<td>45</td>
<td>14.2</td>
<td>107</td>
</tr>
<tr>
<td><strong>Food intake</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>147</td>
<td>46.2</td>
<td>279</td>
</tr>
<tr>
<td>Negative</td>
<td>171</td>
<td>53.8</td>
<td>223</td>
</tr>
<tr>
<td><strong>Physical activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>158</td>
<td>50.5</td>
<td>191</td>
</tr>
<tr>
<td>Negative</td>
<td>155</td>
<td>49.5</td>
<td>308</td>
</tr>
<tr>
<td><strong>Preventive behavior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>221</td>
<td>70.2</td>
<td>370</td>
</tr>
<tr>
<td>Negative</td>
<td>94</td>
<td>29.8</td>
<td>125</td>
</tr>
<tr>
<td><strong>Relationship</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>296</td>
<td>94.6</td>
<td>452</td>
</tr>
<tr>
<td>Negative</td>
<td>17</td>
<td>5.4</td>
<td>38</td>
</tr>
<tr>
<td><strong>Stress control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>262</td>
<td>82.4</td>
<td>375</td>
</tr>
<tr>
<td>Negative</td>
<td>56</td>
<td>17.6</td>
<td>128</td>
</tr>
</tbody>
</table>

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### Table 3: Prevalence ratio for general lifestyle and food and physical activity domains and chronic metabolic diseases in quilombola adults. Guanambi, Bahia, Brazil, 2016.

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Food intake</th>
<th>Physical activity</th>
<th>Preventive behavior</th>
<th>Relationships</th>
<th>Stress control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RP (CI95%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.28</td>
<td>0.97</td>
<td>1.05</td>
<td>1.03</td>
<td>1.03</td>
<td>1.03</td>
</tr>
<tr>
<td>(0.92–1.76)</td>
<td>(0.91–1.04)</td>
<td>(0.99–1.13)</td>
<td>(0.97–1.10)</td>
<td>(0.99–1.07)</td>
<td>(0.98–1.09)</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>0.95</td>
<td>0.97</td>
<td>0.99</td>
<td>1.02</td>
<td>0.99</td>
<td>0.97</td>
</tr>
<tr>
<td>(0.64–1.39)</td>
<td>(0.89–1.05)</td>
<td>(0.91–1.07)</td>
<td>(0.95–1.11)</td>
<td>(0.95–1.03)</td>
<td>(0.90–1.04)</td>
<td></td>
</tr>
<tr>
<td>Dyslipidemias</td>
<td>1.34</td>
<td>0.98</td>
<td>1.00</td>
<td>1.14</td>
<td>1.01</td>
<td>0.99</td>
</tr>
<tr>
<td>(0.85–2.13)</td>
<td>(0.89–1.06)</td>
<td>(0.98–1.09)</td>
<td>(1.05–1.24)</td>
<td>(0.96–1.05)</td>
<td>(0.91–1.07)</td>
<td></td>
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<tr>
<td>Central obesity</td>
<td>0.86</td>
<td>1.01</td>
<td>0.92</td>
<td>1.03</td>
<td>1.01</td>
<td>0.97</td>
</tr>
<tr>
<td>(0.62–1.19)</td>
<td>(0.94–1.08)</td>
<td>(0.86–0.99)</td>
<td>(0.97–1.10)</td>
<td>(0.97–1.05)</td>
<td>(0.91–1.03)</td>
<td></td>
</tr>
<tr>
<td>Arthritis or Rheumatism</td>
<td>1.38</td>
<td>0.97</td>
<td>1.02</td>
<td>1.10</td>
<td>1.01</td>
<td>0.99</td>
</tr>
<tr>
<td>(0.80–2.32)</td>
<td>(0.88–1.08)</td>
<td>(0.92–1.13)</td>
<td>(1.00–1.20)</td>
<td>(0.96–1.06)</td>
<td>(0.91–1.09)</td>
<td></td>
</tr>
<tr>
<td>Multimorbidities</td>
<td>0.94</td>
<td>1.01</td>
<td>0.99</td>
<td>0.97</td>
<td>0.99</td>
<td>1.00</td>
</tr>
<tr>
<td>(0.83–1.08)</td>
<td>(0.98–1.04)</td>
<td>(0.90–1.10)</td>
<td>(0.94–0.99)</td>
<td>(0.98–1.01)</td>
<td>(0.98–1.02)</td>
<td></td>
</tr>
</tbody>
</table>

CI95%: 95% confidence interval
sense, women become more vulnerable to illness due to socioeconomic inequalities and biological issues.

In the domain of physical activity, it was shown that quilombola women in the investigated micro-region are less physically active than men. In the same sense, an analysis in a community in the upper sertão of Bahia reported that women are less active in their free time. In the same sense, the most negative behavior in women in relation to physical activity was also presented by research in rural communities in Minas Gerais, which identified men significantly more active in leisure, work and commuting. It is noteworthy that the low level of physical activity is regularly associated with the presence of NCDs, a condition that occupies space in the profile of morbidity and mortality in the most varied populations, being responsible for nine times more premature death than communicable diseases.

Vulnerability to food insecurity in quilombolas has been reported in other studies. Regarding the domain of food in the present investigation, the male sex presented a more negative lifestyle than the women. A study with quilombolas from Minas Gerais also identified more negative eating behavior among men. The Brazilian National Health Survey (Pesquisa Nacional de Saúde, PNS) presented similar data, emphasizing that the prevalence of women who consumed five servings of fruits and vegetables daily is significantly higher when compared to the male group, linearly associated with increasing age and level of education. These findings confirm that the most negative eating behaviors are more frequent in men.

As in the present investigation, worrying prevalence of metabolic morbidities in quilombola communities have been reported. However, the prevalence of hyperglycemia in the present analysis is higher than the 13.6% present in quilombos in Minas Gerais and 8.6% in quilombolas in a municipality in the southwest of Bahia. However, the presence of dyslipidemia found in quilombolas in the Guanambi region is less than the 20.0% in quilombos in Minas Gerais.

High blood pressure was the most prevalent morbidity in the investigated population, regardless of gender. Caldeiras and Oliveira also pointed out a similarity in the frequency of this disease among quilombola adults of both sexes, however, the prevalence of 31.7% of men and 30.5% of women are lower than those identified in this analysis of the Bahian region. In the same sense, a population analysis of quilombolas in a city in Bahia, also identified a high blood pressure index (48.6%) lower than that of this study. According to PNS, the Brazilian population had 21.4% of adults with high blood pressure, most recurrent in women.

The important differences in data on population diseases in Brazil and the findings in research involving quilombolas may be related to methodological characteristics (by reporting the medical diagnosis and/or by measuring blood glucose, lipid and blood pressure) to determine the possibility of these illnesses. However, they can also be influenced by the quilombola population and sociodemographic profile in which quilombola communities are located.

More than half of the quilombola population in the Guanambi region has central obesity, especially present among women. These findings are significantly greater than the 25.9% found in a quilombola community in Bahia. However, less than the 55.7% indicated in the quilombola population of a municipality in the southwest of Bahia. However, the analysis by Soares and Barreto also identified the women most exposed to this type of obesity.

Central obesity expresses an important health problem generated, even if partially, by the nutritional transition plus demographic and epidemiological changes. In addition, its more recurrent presence in the female population would also result from the accumulation of natural fat in the abdominal region due to metabolic and hormonal changes common to women throughout life.

In quilombolas in the region investigated, positive physical activity was associated with a lower chance of occurrence of central obesity. Meanwhile, positive preventive behavior was associated with a higher probability for dyslipidemia and lesser multimorbidity.

Social modernization is one of the main factors responsible for the reduction of the levels of physical activity, interfering negatively in the energy balance and providing the growth of obesity. Thus, the emergence of motorized transport and equipment that reduce physical effort, both at work and at home, reflects a positive bias in comfort and a negative one in some health indicators, decreasing the Basal Metabolic Rate (BMR) and increasing the possibility for the overweight.

The association between dyslipidemia and the domain of positive preventive behavior may be related to the adoption of preventive practices after the diagnosis of the disease. However, as already mentioned, this disease has a long latency period. So, this association may be related to the reverse chance, which can occur when the exposure changes, in the presence of a certain disease.

The disease multiplicity index in the quilombola population checked cases of individuals with a frequency of four or more NCDs. This prevalence between the presence of two or more chronic diseases, in quilombola adults of both sexes, may be related to the socioeconomic factors of the population. The social context of depravations of health services and socioeconomic benefits increases the prevalence of multimorbidity.

This complex clinical picture represents a challenge to health services, which, for the most part, provide isolated treatments for morbidities and difficulties regarding the protocols and guidelines for meeting the associated demands. In the same
sense, those affected by simultaneous illnesses must face specific and costly treatments, in addition to negative physical, cognitive and functional complications for quality of life and morbidity due to the disease.

Adopting positive preventive behavior was a protective factor against multimorbidities. A positive long-term PEVI significantly reduces the risk factors associated with the design of NCDs, such as inadequate diet, little practice of physical activity, smoking and excessive consumption of alcoholic beverages.

The analysis has some limitations. Self-declaration about LS and morbidities may suffer bias in the participant’s understanding and memory, however previously validated instruments were used. The PEVI was established to track personal issues, when used to understand the community epidemiological profile, it may not represent the information widely. Another issue that must be considered is the limited number of variables for determining multimorbidity, which can underreport its population distribution.

The study procedures represent positivity regarding their reliability. The selected and synthesized instruments favored a more accurate and comprehensive understanding of the participants’ health conditions, inferring a wealth of data. Based on the study developed and the limitations found with respect to a significantly large population, it is extremely important to increase a new questionnaire dedicated to the study of population LS for groups.

Final considerations

Differences were found between the representation of the PEVI domains, chronic diseases and sexes. Men exhibited more negative behavior in the domain of food, while among women the most negative domain was in physical activity. The most prevalent chronic morbidities in the studied population are: high blood pressure and central obesity.

Of the five PEVI domains, two showed a relationship between NCDs and multimorbidities. It is worth mentioning the small number of articles referring to multimorbidities in the Brazilian population in general, but especially in the quilombola population, since it is still considered a new theme in the epidemiological field in the country. Thus, the information presented here is not exhausted in this study, but it develops the basic function for future research in quilombola communities.

REFERENCES


