Marital Status and Frailty in Older People: Gender Differences in the Progetto Veneto Anziani Longitudinal Study

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Abstract

Objectives: Marital status has been associated with disability and mortality, but its potential role as a factor influencing frailty has yet to be thoroughly investigated. The analysis of gender-related differences in the relationship between marital status and frailty is another interesting matter that remains to be fully elucidated. The aim of our study was to examine the association between marital status and the incidence of frailty in a cohort of older men and women over a 4.4-year follow-up.

Materials and Methods: A sample of 1887 subjects older than 65 years, enrolled under the Progetto Veneto Anziani (Pro.V.A.) and with no evidence of frailty at baseline, were grouped by marital status. The incidence of frailty after 4.4 years was measured as the presence of at least three of the Fried criteria.

Results: After the follow-up period, 414 (21.9%) new cases of frailty were identified. Multivariate logistic regression models demonstrated that male gender carried a higher risk of developing frailty among men who had never married (odds ratio [OR] = 3.84, 95% confidence interval [95% CI] = 2.76–5.35; p < 0.0001) and were widowed (OR = 1.43, 95% CI = 1.06–1.95, p = 0.02) than among married participants. For female gender, widows had significantly lower odds of becoming frail than married women (OR = 0.77, 95% CI = 0.66–0.91, p = 0.002). The determinants of frailty more influenced by marital status were unintentional weight loss, low daily energy expenditure, and exhaustion.

Conclusions: Marital status seems to significantly influence the onset of frailty, with some gender-specific differences. Unmarried men were at higher risk of frailty, while widowed women carried a lower risk of becoming frail than married women.

Introduction

Frailty is a geriatric syndrome in which a gradual loss of homeostatic reserves raises the risks of health issues and functional impairments, and the rates of disability, hospitalization, and institutionalization. It is important to study the social determinants of frailty with a view to identifying people at higher risk early on, and tailoring measures to prevent this condition.

Among other social conditions, marital status may influence the onset of frailty in older people, since living alone, having little contact with relatives, and limited family care are common features of frail subjects. Marital status is a social condition that has long been associated with health and functional status. Many studies have demonstrated the positive effects of marriage in containing disability rates and susceptibility to depression and emotional problems, with a stronger influence in men than women.

Widowhood appears to increase the risk of disability, and depression and psychological distress are more common among separated individuals than among other unmarried people. Married people’s health status may be better preserved because they are less exposed to risk behavior, and they have more socioeconomic resources and psychological support. In addition, according to marital selection

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theory, people with a better health and socioeconomic status may be more likely to marry.9–11

To the best of our knowledge, marital status has been examined in relation to disability and mortality,5–12 but the association between marital status and frailty has yet to be thoroughly investigated. In particular, it is still not clear how marital status may influence the onset of frailty, and which determinants of frailty might be more affected by this social condition. Gender-related differences in the relationship between marital status and frailty is another interesting matter, since being unmarried seems to negatively affect men more than women,7 although frailty seems to affect the female gender in particular.12

In light of these considerations, our hypothesis was that unmarried elderly people carry a higher risk of developing frailty than married ones. The aim of our study was to test the association between marital status and the onset of frailty in a cohort of older men and women over a mean 4.4-year follow-up.

Materials and Methods

Data source and subjects

The sample considered in this study included participants in the ProgettoVenetoAnziani (Pro.V.A.), an observational cohort study on subjects over 65 years old. The whole sample included 3099 age- and sex-stratified Caucasian adults (1245 men and 1854 women) randomly selected between 1995 and 1997 using a multistage stratified method. Sampling and data collection procedures have been described elsewhere.14 All data were recorded by trained physicians and nurses at clinics, or at home if participants were unable to attend a clinic.

For the purposes of the present study, we analyzed the demographic details regarding participants’ marital status at baseline (married, never married, or widowed) and the onset of frailty during a follow-up of 4.4 ± 1.2 (mean ± standard deviation [SD]) years.

Of the 3099 participants initially enrolled in the study, 146 were excluded because baseline details on their marital status or frailty were lacking, another 142 participants were already frail at baseline, 168 became widowed while the study was underway, and 746 died or were lost to follow-up. Since the prevalence of divorces in our sample was negligible (0.3%), we also excluded the 10 divorced individuals from our analyses, thus achieving a final sample of 1887 older men and women.

The ethics committees of Padua University and the Local Health Units (USSL) n. 15 and n. 18 of the Veneto Region approved the study protocol, and participants gave their written informed consent.

Anthropometric, demographic, and clinical characteristics

Trained physicians and nurses examined participants in the study at city hospitals, recording information on their formal education, physical activity, monthly income, smoking and drinking habits, number of cohabitants, and living status during face-to-face interviews. Educational level was classified as ≤5 or >5 years (5 years being the duration of primary school in Italy). Regular physical activity was defined as ≥4 hours per week in the previous month of at least moderate physical activity (brisk walking, cycling, gardening, dancing, or physical exercising). Monthly income was defined considering a cut-off value of 500 €/month. Smoking status was classified as “never,” “former” (for at least a year in the past), and “current” smokers. Alcohol drinking (defined as the use of any alcoholic beverage in the previous month) and living alone were both categorized as “yes” versus “no.” Number of cohabitants was assessed for each participant not living alone. Body weight and height were measured, and body mass index (BMI; kg/m²) was calculated as the ratio of weight to height squared.

Function status and degree of independence were assessed on the Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) scales.15,16 Depression was examined using the 30-item Geriatric Depression Scale (GDS), a validated score for rating depression in older people.17 Cognitive impairment was assessed at baseline with the 30-item Mini Mental State Examination (MMSE), adopting a cut-off of 24.18–21

Physical performance was examined by measuring handgrip strength and administering the Short Physical Performance Battery (SPPB), which examines three lower extremity functions (gait speed, static balance, and chair stand), generating total scores ranging from 0 to 12, where higher scores indicate a better physical performance.22 Information on comorbidities and on the total number of drugs taken daily by participants was recorded by board-certified physicians. Standardized questionnaires, medical histories, self-reported symptoms, medical and hospital records, blood tests, and physical examination were assessed to gain a complete picture of participants’ clinical status. For the purposes of this work, we considered the following comorbidities: diabetes, cardiovascular diseases (CVD), vision loss, hearing loss, fractures, hand osteoarthritis (OA), lower extremity OA, chronic obstructive pulmonary diseases (COPD), cancer, and cognitive impairment as possible covariates in the relationship between OA and frailty.14 Diabetes was defined as fasting plasma glucose levels ≥7.0 mmol/L, glycosylated hemoglobin ≥6.5%, the use of glucose-lowering drugs, or a history of a 2 hours post-load glucose ≥11.1 mmol/L.23 CVD was defined as the presence of any of the following: congestive heart failure, angina requiring a stent, angioplasty or hospitalization, myocardial infarction, and stroke. Fractures were assessed at the typical sites of osteoporosis that is, wrist, femoral, or vertebral regions. The presence of hand or lower limb OA was assessed on the basis of medical history and records, previous X-rays, and the use of analgesics. The diagnosis of OA was supported by assessing the clinical signs of OA in the hand (Heberden nodes, stiffness, pain on passive movement), hip (pain on passive movement, rotation and palpation, and limited external rotation) and knee (deformity, pain on passive movement, reduced passive mobility, and crepitus), and finally confirmed by a rheumatologist using a standardized algorithm.14

Definition of exposure and outcome

Participants’ marital status was assessed by means of personal interviews, initially classifying subjects as married, never married, widowed, and divorced. Since divorce was legalized in Italy in 1970 (law 898/1970) and the data used in our study were collected between 1995 and 1997, the

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prevalence of divorcees accounted for only 0.3% of the sample. We consequently opted to classify marital status as married, never married, and widowed, excluding divorcees.

Frailty was assessed at baseline and follow-up considering the Fried criteria:
- self-reported unintentional weight loss of 5 kg or more in the previous year;
- exhaustion, defined as a GDS score higher than 10 or the answer “no” to the item “Do you feel full of energy?”;
- physical activity level, based on the estimated energy expenditure in daily activities, adopting a cut-off of 383 and 270 kcal for men and women, respectively;
- time taken to walk a distance of 4 m, stratified by gender and height to identify an appropriate cut-off for frailty;
- handgrip strength, assessed using specific cutoffs by gender and BMI.

An individual was defined as frail if they met at least three of these Fried criteria; people positive for one or two frailty criteria were classified as pre-frail, as in the recent literature.

Statistical analyses

To generalize the Pro.V.A. sample to the population at large in the two geographical areas considered, a set of weights was defined by gender and age distribution of the reference population (Italy, Census 1991), and to the sample fraction.

Normal distributions of continuous variables were tested using the Shapiro–Wilk test. Data are given as mean±SD for quantitative measures, and frequency percentages for all discrete variables. Age-adjusted p-values were calculated as follows: for continuous variables, a general linear model was used to analyze differences between the mean of the covariates by marital status; and logistic regression was applied for discrete variables. Levene’s test was used to test the homoscedasticity of variances and, if its assumption was violated, then Welch’s analysis of variance was used. Since a significant sex by marital status interaction emerged for the presence of frailty and frailty outcomes (logistic regression analysis; p<0.001 for each outcome), all data were considered separately by gender.

Multivariate logistic regression models were run, considering marital status as an independent variable and the onset of frailty or fulfilment of the related criteria at follow-up as dependent variables, taking married people for reference. Known factors associated with frailty and marital status were analyzed for inclusion as covariates in the univariate analysis, and variables with a p-value <0.20 were included in the fully adjusted model. The basic adjusted model included age, while the fully adjusted model also included: BMI, GDS, MMSE, total SPPB, ADL and IADL scores, and number of cohabitants (as continuous variables); educational level (education ≥5 vs. <5 years); smoking habits (current vs. never/former); alcohol drinking habits (yes/no); monthly income (≥500 vs. <500 euro); living alone (yes/no); physical activity (>4 vs. ≤4 hours/week); diabetes (yes/no); CVD (yes/no); cancer (yes/no); fractures (yes/no); COPD (yes/no); hand OA (yes/no); lower limb OA (yes/no); hearing loss (yes/no); vision loss (yes/no); and pre-frailty at baseline (yes/no).

Linearity was satisfied for the continuous variables.

Adjusted odds ratios (ORs) and 95% confidence intervals (95% CIs) were calculated to estimate the strength of the associations between marital status and the onset of frailty at the follow-up visit.

All analyses were performed using the SPSS 21.0 for Windows (SPSS, Inc., Chicago, IL). All statistical tests were two-tailed and statistical significance was assumed for a p-value <0.05.

Results

Our study concerned 1887 participants (733 male, 1154 female, unweighted data) with a mean age of 74.2 ± 7.0 years, and a mean BMI of 27.79 ± 4.46 kg/m². At baseline, 50.3% of the subjects considered were married (59.9% of the men vs. 40.1% of the women), 8% had never been married (27.8% vs. 72.2%), and 41.7% were widowed (15.6% vs. 84.4%). The baseline assessment identified 903 participants (47.9% of the sample) as pre-frail, with a majority of women (54.8%).

As shown in Tables 1 and 2, widowed individuals were significantly older than the other groups. After adjusting for age, widowed men and women who had never married had significantly lower BMI values than the other groups. When between-groups demographic differences were considered, individuals who had never married were better educated and physically more active, while married people were more often current smokers and had higher SPPB scores. Widowed participants more often lived alone and had higher monthly incomes than the married or never married groups. Both widows and widowers were more depressed than the other groups. Married people had the highest scores for independence in IADL and, for women, in ADL too. As for comorbidities, both genders in the married group showed less cognitive impairment and pre-frailty status than the widowed and unmarried. There was a higher prevalence of OA and fractures among widowed men and single women, while singles of both genders had the lowest percentages of cancer.

At the follow-up assessment, 414 subjects (21.9%) had become frail (117 men and 297 women). The associations between marital status and the incidence of frailty and frailty’s determinants are shown in Table 3. Among males, those never married men revealed a higher risk of becoming frail than married persons (OR = 3.84, 95% CI = 2.76–5.35, p < 0.0001), showing significantly higher odds of unintentional weight loss (OR = 3.72, 95% CI = 2.75–5.03, p < 0.0001), low daily energy expenditure (OR = 2.14, 95% CI = 1.45–3.15, p < 0.0001), weakness (OR = 1.62, 95% CI = 1.28–2.04, p < 0.0001), and exhaustion (OR = 2.02, 95% CI = 1.60–2.54, p < 0.0001). Widowers demonstrated a lower risk of frailty—although still significantly higher than in married men (OR = 1.43, 95% CI = 1.06–1.95, p = 0.02), being more exposed to unintentional weight loss (OR = 1.57, 95% CI = 1.20–2.06, p = 0.001), weakness (OR = 1.43, 95% CI = 1.16–1.76, p = 0.001), and exhaustion (OR = 2.38, 95% CI = 1.96–2.89, p < 0.0001).

The picture differed in the female gender, with widows revealing significantly lower odds of frailty than married women (OR = 0.77, 95% CI = 0.66–0.91, p = 0.002), and being at lower risk of unintentional weight loss (OR = 0.65, 95% CI = 0.56–0.77, p < 0.0001), and low daily energy expenditure (OR = 0.64, 95% CI = 0.52–0.79, p < 0.0001). Women who had never married revealed no significant association with the onset of frailty overall, but carried a lower risk of unintentional
Our analyses found that marital status was significantly associated with the onset of frailty in the elderly, with gender-related differences. In particular, men who had never married or who were widowed showed a higher risk of frailty than married men, while widowed women had a lower risk of becoming frail than married women.

Our findings in males corroborate the large literature demonstrating the association between longevity and better health status with married status, particularly for men. As regards the baseline characteristics of the men in our sample, we found that married men had a higher prevalence of risk behavior (smoking and drinking habits) and chronic diseases (e.g., diabetes, COPD, and cancer), as well as lower educational levels than unmarried men. This picture would appear to disagree with the theory according to which healthier people with a better psychological and socioeconomic status would be more likely to be selected for marriage. On the other hand, the higher risk of frailty in unmarried than in married men, despite the latter showing more frailty risk factors at baseline, reinforces the theory that married status protects against frailty. This protective effect of marriage seems to persist even after its duration, since the association between unmarried status and the onset of frailty was weaker for widowers than for men who were married.

Table 1. Baseline Characteristics of the 733 Men in the Pro.V.A. Study by Marital Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Married (n = 568)</th>
<th>Never married (n = 42)</th>
<th>Widowed (n = 123)</th>
<th>Married vs. never married, ( p^a )</th>
<th>Married vs. widowed, ( p^a )</th>
<th>Never married vs. widowed, ( p^a )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>71.3 ± 5.2</td>
<td>71.0 ± 4.9</td>
<td>76.1 ± 6.9</td>
<td>0.32( ^b )</td>
<td>&lt;0.0001( ^b )</td>
<td>&lt;0.0001( ^b )</td>
</tr>
<tr>
<td>Anthropometric and demographic data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>27.42 ± 3.71</td>
<td>27.03 ± 4.12</td>
<td>27.01 ± 4.23</td>
<td>0.04</td>
<td>0.57</td>
<td>0.01</td>
</tr>
<tr>
<td>Education</td>
<td>24.0</td>
<td>34.1</td>
<td>13.8</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>No. of cohabitants</td>
<td>1.87 ± 1.32</td>
<td>1.55 ± 1.60</td>
<td>1.58 ± 1.82</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>ADL score</td>
<td>5.67 ± 0.77</td>
<td>5.77 ± 0.87</td>
<td>5.49 ± 1.07</td>
<td>0.04</td>
<td>0.01</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>IADL score</td>
<td>6.86 ± 1.26</td>
<td>6.66 ± 1.47</td>
<td>6.42 ± 1.72</td>
<td>0.001</td>
<td>0.04</td>
<td>0.34</td>
</tr>
<tr>
<td>GDS score</td>
<td>7.87 ± 3.92</td>
<td>6.83 ± 4.29</td>
<td>8.98 ± 4.76</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>MMSE score</td>
<td>26.28 ± 3.31</td>
<td>25.12 ± 4.66</td>
<td>24.10 ± 4.69</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>1.00</td>
</tr>
<tr>
<td>Physical activity (24 hours/week, %)</td>
<td>41.2</td>
<td>45.4</td>
<td>35.3</td>
<td>0.08</td>
<td>0.03</td>
<td>0.004</td>
</tr>
<tr>
<td>SPPB total score (points)</td>
<td>10.18 ± 2.41</td>
<td>9.56 ± 3.08</td>
<td>9.04 ± 3.34</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>0.58</td>
</tr>
<tr>
<td>Medical conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes (%)</td>
<td>13.6</td>
<td>6.3</td>
<td>16.6</td>
<td>&lt;0.0001</td>
<td>0.002</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>CVD (%)</td>
<td>21.4</td>
<td>23.3</td>
<td>23.1</td>
<td>0.26</td>
<td>0.09</td>
<td>0.05</td>
</tr>
<tr>
<td>Vision loss (%)</td>
<td>31.4</td>
<td>31.1</td>
<td>33.4</td>
<td>0.90</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Hearing loss (%)</td>
<td>80.1</td>
<td>75.4</td>
<td>84.1</td>
<td>0.02</td>
<td>0.48</td>
<td>0.16</td>
</tr>
<tr>
<td>Fractures (%)</td>
<td>6.7</td>
<td>8.0</td>
<td>12.1</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>0.02</td>
</tr>
<tr>
<td>Hand osteoarthritis (%)</td>
<td>14.3</td>
<td>9.6</td>
<td>17.8</td>
<td>0.003</td>
<td>0.19</td>
<td>0.001</td>
</tr>
<tr>
<td>Lower limb osteoarthritis (%)</td>
<td>13.5</td>
<td>8.0</td>
<td>20.9</td>
<td>0.001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>COPD (%)</td>
<td>11.7</td>
<td>11.2</td>
<td>6.7</td>
<td>0.74</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Cancer (%)</td>
<td>6.1</td>
<td>1.6</td>
<td>9.1</td>
<td>&lt;0.0001</td>
<td>0.002</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Cognitive impairment (%)</td>
<td>0.6</td>
<td>1.6</td>
<td>3.8</td>
<td>0.004</td>
<td>0.03</td>
<td>0.15</td>
</tr>
<tr>
<td>Pre-frailty (%)</td>
<td>30.6</td>
<td>34.8</td>
<td>39.8</td>
<td>0.02</td>
<td>0.63</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Numbers are mean values (and SD) or percentages (%), as appropriate (weighted data).

\(^a\) Unless otherwise specified, \( p \)-values are adjusted for age using a general linear model or logistic regression, as appropriate.

\(^b\) Not adjusted for age.

ADL, Activities of Daily Living; BMI, body mass index; COPD, chronic obstructive pulmonary disease; CVD, cardiovascular diseases; GDS, Geriatric Depression Scale; IADL, Instrumental Activities of Daily Living; Pro.V.A., Progetto Veneto Anziani; SD, standard deviation; SPPB, Short Physical Performance Battery; MMSE, Mini Mental State Examination.

Weight loss (OR = 0.55, 95% CI = 0.43–0.71, \( p < 0.0001 \)), exhaustion (OR = 0.75, 95% CI = 0.64–0.89, \( p = 0.001 \)), and higher odds of having a low walking speed (OR = 2.44, 95% CI = 2.01–2.95, \( p < 0.0001 \)) than married women.
had never married. Among the determinants of frailty, the main domains influenced by marital status were unintentional weight loss, daily energy expenditure, weakness, and exhaustion. These findings may be explained in several ways. First, being unmarried may induce unmarried people to have less social support and the economic benefits of marriage, which can lead to increased stress, carry additional risks of social isolation and depression, and result in lower physical activity levels. Moreover, although unmarried men showed a significantly lower risk of frailty than married men, and to the concomitant negative effects on health status, muscle strength, and physical performance. These findings could contrast with baseline characteristics of unmarried men, who reported higher physical activity level compared to those of widowers and married. However, unmarried men themselves, like widowers, demonstrated worse physical performance than married at the SPPB test. The ostensible contradiction of these data may reflect, in truth, the known recall bias of older people in reporting their levels of physical activity; this is why data recorded through questionnaires can assess a quantitative measure of physical activity, but do not mirror information on subjects’ physical performance.

The negative consequences on physical and health status, therefore, combined with unmarried men’s more limited family and social relationships, or with widowers’ bereavement-related stress, carry additional risks of social isolation and depression, promoting the onset of frailty.

Unlike the results seen for male gender, widowed women showed a significantly lower risk of frailty than married women, with a lower incidence of unintentional weight loss or low daily physical activity levels. Moreover, although
women who had never married showed no significant association with frailty, after adjusting for potential confounders, they too had significantly lower odds of unintentional weight loss and exhaustion than married women. Our results partially contrast with previous reports of a weaker, but still significant protective effect of marriage on mortality, health status, and depressive symptoms in women, as in men. However, sociological studies have suggested that unmarried status is more disadvantageous for men than for women, and that marriage protects the male gender more than the female one. In fact, the presence of a wife may bring material benefits for men in terms of household management and healthcare, whereas women are more likely to feel stressed and find their role restrictive and frustrating. Since women generally have a longer lifespan than men, married women may also suffer from the effects of caregiver burden, since they often devote themselves to caring for their husband in later life. These factors might contribute to the lower risk of depression in unmarried women, in accordance with the report from Gurin et al., who found that women had more marital problems and less wellness in marriage than men. The same study also found that single women experienced less discomfort than single men, greater job satisfaction and higher activity levels during the follow-up by gender: the Pro.V.A. study (Weighted Data).
because they have greater coping resources and are better able to express their emotions. These aspects may help to explain the lower risk of exhaustion seen in single women, who are likewise more socially integrated than single men, and consequently less exposed to frailty.

This study has some limitations. First of all, the social features of our population and the continuous changes in the structure of our society mean that our findings may not reflect the current state of affairs, particularly considering the very small number of divorcees and unmarried people in our sample. Second, failing to consider the presence of a partner outside of marriage in unmarried person may induce bias in our analyses, even though the sociocultural context of our participants makes unlikely that a relevant part of unmarried subjects could have been partnered, but not married. Moreover, including the number of cohabitants as a covariate in the analyses minimizes the potential bias due to this issue. Another possible limitation might be the failure to assess the duration of the participant’s widowhood, since it has been demonstrated that the acute and long-term effects of conjugal bereavement differ considerably. In addition, our analyses were conducted on a sample of all-Caucasian individuals living in the Mediterranean area, so ethnic or cultural differences on the impact of marital status on frailty cannot be considered. Finally, we cannot exclude some biases relating to the definition of frailty, having estimated unintentional weight loss and daily physical activity levels by means of self-reported data, and exhaustion using the GDS scale.

Having said that, the strengths of our work lie in the longitudinal study design and the large sample of older people considered, and in assessing a large number of covariates to limit the influence of potential confounders. Furthermore, having assessed the frailty criteria separately enabled us to explore which determinants might be most influenced by marital status. Finally, our analysis of gender-related differences in the association between marital status and frailty represents a point of particular interest of our study, given the variability observed in marital conditions’ prevalence and frailty determinants between men and women. In particular, the female sample of our study, including a greater part of women not married (widowed or never married) reflects a feature of the current elderly population, with a majority of women living alone who present different characteristics in terms of comorbidities and risk of frailty. This topic suggests the need for future research aimed at elucidating how partner status, and not only marital status, may influence the development of frailty condition.

Conclusions

In conclusion, marital status was found significantly associated with the onset of frailty over a mean follow-up of 4.4 years in a sample of older people, with differences emerging between the genders. Unmarried and widowed men were at a higher risk of becoming frail, while widowed women were significantly less exposed to frailty. The main determinants of frailty that seemed to be most influenced by marital status were unintentional weight loss, daily energy expenditure, and exhaustion. Further research is needed to see whether recent changes in our social structure influence the impact of marital status on the onset of frailty.

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Author Disclosure Statement

No competing financial interests exist.

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