Demographic and Socioeconomic Characteristics Among Primary Health Care Users Diagnosed with Osteoarthritis in Albania

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ABSTRACT
Aim: The aim of this study was to describe the distribution of demographic factors and socioeconomic characteristics among primary health care users diagnosed with osteoarthritis in Albania, a transitional country in the Western Balkans. Methods: This study included all individuals diagnosed with osteoarthritis during January 2013 – December 2014 in selected primary health care centers in Tirana, the capital city of Albania. Overall, 1179 adult individuals were diagnosed with osteoarthritis (521 men and 658 women) during this time period. The overall mean age of study participants was 59.0±10.1 years (60.1±10.6 years in men and 58.1±9.6 years in women). The diagnosis of osteoarthritis was based on the history of the disease, physical examination, laboratory findings and radiological findings. Binary logistic regression was used to assess the sex-differences regarding demographic factors and socioeconomic characteristics among participants diagnosed with osteoarthritis. Results: In multivariable-adjusted logistic regression models, female gender was inversely associated with the age-group (OR=0.67, 95%CI=0.47-0.95) and educational level (OR=0.39, 95%CI=0.25-0.61), but positively related to rural birthplace (OR=1.47, 95%CI=1.14-1.89) and unemployment (OR=1.40, 95%CI=1.02-1.92) of the patients diagnosed with osteoarthritis. Conclusion: Our findings provide novel evidence about the distribution of demographic factors and socioeconomic characteristics among adult individuals diagnosed with osteoarthritis in primary health care services in Albania. Future studies should assess the distribution of the major risk factors for osteoarthritis among adult men and women in transitional Albania.

Key words: Albania, demographic and socioeconomic characteristics, osteoarthritis, primary health care.

1. INTRODUCTION
Osteoarthritis is a multifaceted disease caused by the interaction of multiple genetic and environmental factors (1, 2). Osteoarthritis is a joint disease that mostly affects cartilage, which is the slippery tissue that covers the ends of bones in a joint (3). As a matter of fact, osteoarthritis is the most common type of arthritis (4, 5).

Osteoarthritis occurs most often in older people (6). However, it may also involve younger individuals who occasionally get osteoarthritis, mainly from joint injuries (6).

Osteoarthritis usually develops gradually over time. The main risk factors for development of osteoarthritis include older age, overweight and obesity, joint injury, joints that are not properly formed, genetic defects in joint cartilages, and stresses on the joints from certain jobs and playing sports or other physical activities (7, 8).

Nonetheless, among all the other putative risk factors, age is considered as one of the strongest risk factors for osteoarthritis of all joints (6, 8, 9). From this point of view, the increase in the prevalence and incidence of osteoarthritis with age is deemed a consequence of cumulative exposure to various risk factors and biologic changes that occur with aging that may make a joint less able to cope with adversity, such as cartilage thinning, weak muscle strength, or oxidative damage (7).

To date, there is scarce evidence about the magnitude and distribution of osteoarthritis in the adult population of Albania,
a post-communist country in the Western Balkans which has been undergoing a rapid socioeconomic and political change in the past two decades. There is evidence of a clear demographic transition in Albania, with a six-year increase in the mean age of the population from 2001 to 2011 (10). This demographic change is reflected in an increase of the older population subgroup, where the proportion of individuals aged 65 years and over in Albania amounted up to 11% in 2011 (10). Furthermore, the rapid process of transition in Albania over the past twenty five years has been associated with an intensive process of migration, both internal (from rural areas to urban areas of the country) and external (mostly to the neighboring countries such as Greece and Italy, but also Germany and the United Kingdom) (11). Migration leads to an increased ageing process (12) which goes in line with an increase in the prevalence of osteoarthritis. Nevertheless, there is almost no formal (well-documented) evidence on the prevalence and correlates of osteoarthritis in the adult population of Albania to date.

In this framework, the aim of our study was to describe the distribution of demographic factors and socioeconomic characteristics among primary health care users diagnosed with osteoarthritis in transitional Albania.

2. METHODS

This study included all individuals diagnosed with osteoarthritis during January 2013 – December 2014 in selected primary health care centers in Tirana, the capital city of Albania. Overall, 1179 adult individuals were diagnosed with osteoarthritis (521 men and 658 women) during this time period. The overall mean age of study participants was 60.1±10.6 years in men and 58.1±9.6 years in women. The diagnosis of osteoarthritis was established in line with the recommendations of the American College of Rheumatology criteria for the clinical diagnosis of osteoarthritis (13,14):

History of the disease: self-reported presence of pain, aching, stiffness, or other symptoms in the joints affected by osteoarthritis;

Physical examination: difficulties in flexion/extension and rotation of the joints (range of motions), tenderness, crepitations, or enlargement of the joints;

Laboratory findings: erythrocyte sedimentation rate, rheumatoid factor, C-reactive protein and uricemia, and;

Radiological findings: joint space narrowing and presence of osteophytes.

Fisher’s exact test was used to compare the distribution of demographic factors and socioeconomic characteristics among male and female participants diagnosed with osteoarthritis. On the other hand, binary logistic regression was used to assess the sex-differences regarding demographic factors and socioeconomic characteristics among primary health care users diagnosed with osteoarthritis in Tirana. Crude (unadjusted) and subsequently multivariable-adjusted odds ratios (ORs) and their respective 95% confidence intervals (CIs) were calculated. All the statistical analyses were done by use of the Statistical Package for Social Sciences (SPSS, version 17.0).

3. RESULTS

Table 1 presents the distribution of demographic factors and socioeconomic characteristics among primary health care users diagnosed with osteoarthritis in Tirana during the period 2013-2014. Overall, 622 (52.8%) of the patents were less than 60 years of age, whereas 557 (47.2%) of them were 60 years or above. There was evidence of a statistically significant difference in the age-distribution between men and women: the proportion of older men (60 years and above) was higher than in women (52.2% vs. 43.3%, respectively), indicating that osteoarthritis developed at an earlier age in women compared to men (P=0.001). Regarding the place of birth, the proportion of men who were born in urban areas was higher in men than in women (69.3% vs. 62.9%, respectively), a difference which was statistically significant (P=0.013). Furthermore, the prevalence of unemployment was substantially and significantly higher in women compared to men (28.9% vs. 18.8%, respectively; P<0.001).

Table 1. Distribution of demographic factors and socioeconomic characteristics among primary health care users diagnosed with osteoarthritis in Tirana during 2013-2014. * Absolute numbers and their respective column percentages (in parentheses). † P-values from Fisher’s exact test.
95% CI = 1.04–1.70). Furthermore, there was evidence of a positive association between female gender and unemployment (OR = 1.73, 95% CI = 1.28–2.34), but not with retirement (OR = 0.98, 95% CI = 0.75–1.27). There was no significant association with marital status (P = 0.638). On the other hand, there was a strong inverse association between female gender and educational level (overall P < 0.001): the odds of a higher educational attainment were considerably lower among women than in men diagnosed with osteoarthritis (OR = 0.41, 95% CI = 0.29–0.58). Similarly, the odds of a higher income level and a higher social status were both significantly lower among women than in men diagnosed with osteoarthritis (OR = 1.04, 95% CI = 1.04–1.70). Furthermore, there was evidence of a positive association between female gender and unemployment (OR = 1.73, 95% CI = 1.28–2.34), but not with retirement (OR = 0.98, 95% CI = 0.75–1.27). There was no significant association with marital status (P = 0.638). On the other hand, there was a strong inverse association between female gender and educational level (overall P < 0.001): the odds of a higher educational attainment were considerably lower among women than in men diagnosed with osteoarthritis (OR = 0.41, 95% CI = 0.29–0.58). Similarly, the odds of a higher income level and a higher social status were both significantly lower among women than in men diagnosed with osteoarthritis (OR = 1.04, 95% CI = 1.04–1.70).

Upon simultaneous adjustment for all the demographic factors and socioeconomic characteristics, female gender was inversely associated with age-group (OR = 0.67, 95% CI = 0.47–0.95) and educational level (OR = 0.39, 95% CI = 0.25–0.61), but positively related to rural birthplace (OR = 1.47, 95% CI = 1.14–1.89) and unemployment (OR = 1.40, 95% CI = 1.02–1.92). On the other hand, in multivariable-adjusted models, the association of gender with income level and social status disappeared (Table 2).

### 4. DISCUSSION

Main findings of our study conducted in Tirana – the Albanian capital city – include an inverse (negative) association of female gender with the age-group and educational level of primary health care users diagnosed with osteoarthritis. On the other hand, there was evidence of a positive association of female gender with rural birthplace and unemployment of study participants controlling for a wide array of other demographic and socioeconomic factors.

Our study revealed that women in Tirana are more likely to develop osteoarthritis than men. This finding is compatible with many previous reports from the international literature which indicate that females have a higher prevalence of osteoarthritis and also suffer from more severe forms of osteoarthritis compared to their male counterparts (9). The strong positive association of osteoarthritis with menopause has suggested that hormonal factors may play a crucial role in the development of this condition (7). However, it should be noted that results on the effect of estrogen have been controversial in this regard (15–17). In the randomized clinical trial referred to as the "Heart and Estrogen/Progestin Replacement Study", in a group of older postmenopausal women with heart disease, no significant difference was noted in the prevalence of knee pain or its resultant disability between participants taking estrogen plus progestin therapy or those taking placebo (9,18). On the other hand, results from the Women's Health Initiative indicated that, women on estrogen replacement therapy were 15% less likely to require total knee or hip arthroplasty compared to their male counterparts (9). The strong positive association of osteoarthritis with menopause has suggested that hormonal factors may play a crucial role in the development of this condition (7). However, it should be noted that results on the effect of estrogen have been controversial in this regard (15–17). In the randomized clinical trial referred to as the "Heart and Estrogen/Progestin Replacement Study", in a group of older postmenopausal women with heart disease, no significant difference was noted in the prevalence of knee pain or its resultant disability between participants taking estrogen plus progestin therapy or those taking placebo (9,18). On the other hand, results from the Women's Health Initiative indicated that, women on estrogen replacement therapy were 15% less likely to require total knee or hip arthroplasty compared to women not taking such therapy, but that estrogen combined with progestin therapy was not associated with the risk of joint replacement (9,19).

Our study may have several limitations pertinent to the sample representativeness and the information collected. We included in this study all individuals diagnosed with osteoarthritis who sought medical care in selected primary health care centers in Tirana. However, these health centers included in our study are representative to the overall primary health care facilities in Tirana. From this perspective, the overall sample of primary health care users diagnosed with osteoarthritis in these health centers included in our study is assumed to be representative of the overall adult primary health care users in Tirana. Yet, primary health care users may not necessarily reflect the overall...
adult population of Tirana. Therefore, our findings cannot be generalized to the overall adult population of Tirana, but are confined to the primary health care users only. Furthermore, at best, findings from this study are generalized to the adult population residing in Tirana and not the general population of Albania. The instruments for data collection were based on the international protocols and best practices and recommendations for establishment of the clinical diagnosis of osteoarthritis (13,14). Nevertheless, the self-reported data on socioeconomic characteristics of study participants may have been subject to information bias, at least to some extent.

5. CONCLUSION

Notwithstanding the possibility of the aforementioned limitations, our findings provide novel evidence about the distribution of demographic factors and socioeconomic characteristics among adult individuals diagnosed with osteoarthritis in primary health care services in Tirana, the capital of Albania. Future studies should assess the distribution of the major risk factors for osteoarthritis among adult men and women in transitional Albania.

CONFLICT OF INTEREST: NONE DECLARED.

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