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Depression, anxiety and socio-demographic factors among hospitalized patients in Gjakova region, Kosovo

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Abstract

Aim: The aim of our study was to assess the level and selected socio-demographic correlates of depression and anxiety among hospitalized adult patients in transitional Kosovo.

Methods: A cross-sectional study was conducted in Kosovo during the period October 2018 – March 2019 including a representative sample of 300 patients (mean age: 41.3±16.0 years; 60% women) admitted at the Regional hospital of Gjakova in Kosovo. In addition to socio-demographic data, a structured 16-item questionnaire aiming at assessing depression and anxiety was administered to all participants (each item ranging from 1 [low] to 5 [high]). A summary score was calculated for all 16 items related to depression and anxiety level ranging from 16 (the lowest level) to 80 (the highest level). General linear model was used to assess the association between summary score of depression and anxiety level and socio-demographic factors of study participants.

Results: Mean summary score of the 16 items related to depression and anxiety level among hospitalized patients was 41.4±16.6; median score was 41 (interquartile range: 27-57). In multivariable-adjusted models, mean summary score of depression and anxiety level was higher among older patients, participants with a low educational attainment, those with a low income level, and individuals residing in urban areas.

Conclusion: Our study reveals a relatively high level of depression and anxiety among hospitalized adult patients in a major region of transitional Kosovo, especially among individuals pertinent to the low socioeconomic group. These findings should raise the awareness of policymakers and decision-makers in Kosovo in order to design appropriate strategies and implement effective programs.

Keywords: anxiety, depression, hospitalized patients, Gjakova, Kosovo, socioeconomic factors.

Introduction

According to the estimates of the World Health Organization (WHO), in 2020, there will be an increase of 15% in the burden of disease (expressed in terms of disability-adjusted life years) (Murray & Lopez, 1996). The rising trend is evident in most of the countries, but will nevertheless be steeper in developing and transitional countries (Al Alawi et al, 2018; Lopez et al, 2006) including also Kosovo and Albania, two transitional countries in the Western Balkans. This is an issue of particular concern given the low resources and fact that most of the developing and transitional countries face other challenges and need to cope with several pressing needs.

In the realm of mental and neurological disorders, depression is distinguished as a frequent condition leading to a considerable level of disability in most of the countries worldwide (Al Alawi et al, 2018). As a matter of fact, depression is estimated as the upcoming leading cause of disease burden by the year 2030 (Mathers & Loncar 2006).

Positive family history is a main risk factor for depression according to many studies which have documented a strong genetic load of this mental condition (Al Alawi et al, 2018; McGuffin et al, 2003). Furthermore, anxiety and stress of living with certain diseases plays also a major role in development of depression (Ehlert et al, 2001). This fact raises the importance of assessment of anxiety and depression among patients showing up at different levels of health care, especially users of hospital services. It has been convincingly indicated that both the nature (genetic) and the nurture (shared family environment) play significant roles in the development of depression (McGuffin et al, 1991).

Kosovo has been subject to a long struggle and war for its liberation from the Serbian regime that took place only in 1999. Afterwards, Kosovo was for about one decade under United Nations administration. Subsequently, formally, Kosovo declared its independence in 2008. In the past decade, Kosovo has undergone a rapid process of transformation and is currently struggling to establish a functional democracy. As the newest country in Europe, Kosovo has the youngest population, with a mean age of about 27 years (Jerliu et al, 2012), which is lower than the neighboring Albania. Regardless of its young population, Kosovo is nevertheless affected by the global aging trend which is characterized by considerable reduction of population increase from 27% in 1981 to 9% in 2007 (ILO, 2010; Jerliu et al, 2015).

Life expectancy in Kosovo was 67 years for males and 71 years for females in 2008, whereas in 2011 the overall life expectancy was 70.0 years (Jerliu et al, 2015). Of note, life expectancy in transitional Kosovo is significantly lower than in the European Union member states. The relatively low life expectancy in Kosovo is reflected in one of the highest infant mortality and maternal mortality rates in the World Health Organization's European region (Jerliu et al, 2012).

The available evidence, which is nevertheless not well-documented, suggests a high level of anxiety and stress among patients at both primary and secondary level of care in Kosovo. However, to date, the evidence about the level of stress, anxiety and depression about hospitalized patients in Kosovo is scant.

In this context, the aim of this study was to assess the level of depression and anxiety and selected socio-demographic correlates among adult hospitalized patients in transitional Kosovo. We hypothesized a higher level of depression and anxiety among patients pertinent to the low socioeconomic group given their additional financial burden and other challenges related to life circumstances.

Methods

A cross-sectional study was conducted in Kosovo during the period October 2018 – March 2019.

The study was carried out in Gjakova region, which constitutes one of the main regions of the Republic of Kosovo.

A representative sample of individuals admitted at the Regional Hospital of Gjakova was included in this survey. More specifically, the study population consisted of a random sample of 300 adult patients hospitalised at different departments of the Regional Hospital of Gjakova in the course of the study (180 women and 120 men aged 18 years and above).

A structured 16-item questionnaire inquiring about the depression and anxiety level over the last two weeks was administered to all study participants. Assessment of depression consisted of 9 items (Kroenke et al, 2001), whereas measurement of anxiety included 7 items (Spitzer et al, 2006). Possible answers for each item of depression and/or anxiety ranged from 1 to 5, with higher scores indicating a higher level of anxiety and/or depression. Subsequently, a summary score was calculated for all 16 items related to depression and anxiety level ranging

from 16 (lowest level of depression and anxiety) to 80 (highest level of depression and anxiety).

Furthermore, information about demographic factors (age, sex and place of residence) and socioeconomic characteristics (educational attainment and income level) were gathered for all study participants.

The study was approved by the Ethics Board of the National Institute of Public Health of the Republic of Kosovo.

Fisher's exact test was used to compare differences in socio-demographic factors (age, place of residence, educational attainment and income level) between male and female participants. Conversely, general linear model was used to assess the association between summary score of depression and anxiety level (16-item instrument) and socio-demographic factors of study participants. Firstly, crude (unadjusted) mean values, their respective 95% confidence intervals (95%CIs) and p-values were calculated initially. Secondly, multivariable-adjusted models were run adjusting simultaneously for all socio-demographic factors of study participants (age, sex, place of residence, educational attainment and income level). Multivariable-adjusted mean values, their respective 95%CIs and p-values were calculated.

A p-value ≤0.05 was considered as statistically significant in all cases.

Statistical Package for Social Sciences (SPSS< version 19.0) was used for all the statistical analyses.

Results

Mean age (±SD) of women included in this study was 41.3±16.0 years; median age was 39 years (interquartile range: 27-53 years); the age range was: 18-83 years (not shown in the tables).

Table 1 presents the distribution of socio-demographic factors of study participants separately in men and in women. Overall, about 34% of individuals were aged ≤30 years, whereas 29% of participants were 51 years and above. About 55% of participants resided in rural areas compared to 45% of individuals who were urban residents. Around 19% of individuals had a low educational attainment, whereas 28% of them had a high educational level. On the whole, 13% of individuals had a low income level, whereas 22% of participants had a high income level. There were no statistically significant differences in the distribution of socio-

demographic characteristics between men and women included in this study (all p-values >0.05, Table 1).

A summary score was calculated for all 16 items of depression and anxiety level ranging from 16 (indicating the lowest level of depression and anxiety) to 80 (indicating the highest level of depression and anxiety). Mean summary score of the 16 item-instrument of the depression and anxiety level was 41.4±16.6; median score was 41 (interquartile range: 27-57) [data not shown in the tables].

Table 2 presents the association between summary score of depression and anxiety level and socio-demographic factors of study participants. In crude (unadjusted) general linear models, the mean summary score of the 16-item instrument measuring the depression and anxiety level was significantly higher among older participants (≥51 years) compared to their younger counterparts (≤30 years): 45.7 vs. 37.0, respectively (P=0.001). Furthermore, the level of depression and anxiety was higher among participants residing in urban areas (43.4 vs. 39.8 in rural areas), low-educated individuals (50.9 vs. 33.6 in highly educated participants), and participants with a low income level (53.3 vs. 35.2 in high income individuals). Conversely, there were no differences in summary scores of depression and anxiety level between male and female participants.

In multivariable-adjusted models, the significant association with age disappeared, whereas the same findings more or less persisted for the other socio-demographic factors. Thus, upon simultaneous multivariable adjustment for all socio-demographic characteristics, mean summary score of depression and anxiety level was significantly higher among: participants residing in urban areas compared to those from rural areas (45.5 vs. 41.3, respectively); in low-educated individuals compared to highly educated participants (49.0 vs. 36.9, respectively); and in low-income participants compared to high-income individuals (49.5 vs. 39.7, respectively).

There was evidence of a mild, but highly statistically significant linear association between the summary score of depression and anxiety level and age of study participants (Spearman's rho=0.22, P<0.001) [not shown].

Discussion

The main finding of this study consists of a relatively high level of depression and anxiety among adult individuals admitted at the Regional Hospital of Gjakova, which is one of the main regions of the Republic of Kosovo. The level of depression and anxiety was particularly high among individuals pertinent to the low socioeconomic group, which is a cause of concern. The association of depression and anxiety with unfavourable socioeconomic conditions persisted upon adjustment for age and sex of study participants.

Several studies have reported that depressive symptoms are common among patients with different diseases including dermatological disorders (Al Alawi et al, 2018; Dowlatshahi et al, 2014; Takeshita et al, 2017), patients attending pain clinics (Kosson et al, 2018; Castro et al, 2009), or those attending cardiac emergency rooms (Soares-Filho et al, 2009). In addition, depression and anxiety have been reported to be high among patients attending the emergency departments (Abar et al, 2017). Hence, according to a recent study, severe anxiety was observed in 10% of the patients, whereas moderately severe or severe depression was observed in 12% of the patients (Abar et al, 2017). As a matter of fact, this study reported that patients who were both severely anxious and depressed visited the emergency department nearly twice as often as non-anxious and non-depressed patients (Abar et al, 2017). Another study has reported that more than 25% of the visits at the emergency department are conducted by patients with comorbid mental health disorders (Capp et al, 2016).

Our study included patients with different diseases and pertinent to various departments of the Regional Hospital of Gjakova. A stratified analysis by different groups of diseases revealed a similar distribution of depression and anxiety scores among patients with cardiovascular diseases and those with chronic respiratory diseases or chronic renal conditions. Overall, our study confirms prior findings reported in the international literature regarding a higher prevalence of depression and anxiety disorders among hospitalized patients compared to the general population.

Nonetheless, there are several limitations of this study conducted in Gjakova region which consist of the sample size of hospitalized patients, the sample representativeness of the patients involved in this survey, the odds of information bias and the issue of study design. The sample size included in our study was sufficient to assess the extent (magnitude) of

depression and anxiety among hospitalized patients and the association with socio-demographic characteristics. Yet, subtle differences in the level of depression and anxiety among patients belonging to different socio-demographic categories might have been missed, given the sample size at hand. Hence, a larger sample size would allow for exploration and comparison of smaller differences in the levels of depression and anxiety between different socioeconomic groups of patients. However, an issue which is more important than the sample size concerns its representatives. This study included a sample of hospitalized patients in Gjakova region and, therefore, findings from this analysis cannot be generalized to other regions of the country and, particularly, to the general adult population of Kosovo. Instead, results from the current study may be generalized to hospitalized patients in Gjakova region only. The instrument for assessment of depression and anxiety in our study was based on a standardized and internationally valid tool, which has been used in many studies conducted in different countries of the world (Kroenke et al, 2001; Spitzer et al, 2006). Apparently, there is no evidence of any type of information bias from this study, which is comforting. Nonetheless, findings from this study should be interpreted with caution given its cross-sectional design. Hence, findings from the current study should be confirmed in future prospective studies in Kosovo and other Albanian settings.

Despite of these potential limitations and drawbacks, this study provides valuable evidence about the level of depression and anxiety and the association with socio-demographic factors among hospitalized adult patients in a main region of Kosovo. Our study reveals a relatively high level of depression and anxiety among hospitalized adult patients in a major region of transitional Kosovo, especially among individuals pertinent to the low socioeconomic group. These findings should raise the awareness of policymakers and decision-makers in Kosovo in order to design appropriate strategies and implement effective programs.

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Table 1. Socio-demographic factors in a sample of patients admitted at the Regional Hospital of Gjakova in Kosovo in 2018-19

Socio-demographic factors	Total (N=300)	Women (N=180)	Men (N=120)	P †
Age-group:				
≤30 years	103 (34.3)*	63 (35.0)	40 (33.3)	0.102
31-50 years	109 (36.3)	72 (40.0)	37 (30.8)	
≥51 years	88 (29.3)	45 (25.0)	43 (35.8)	
Place of residence:				
Urban areas	134 (44.7)	79 (43.9)	55 (45.8)	0.813
Rural areas	166 (55.3)	101 (56.1)	65 (54.2)	
Educational level:				
Low	58 (19.3)	37 (20.6)	21 (17.5)	0.272
Middle	158 (52.7)	88 (48.9)	70 (58.3)	
High	84 (28.0)	55 (30.6)	29 (24.2)	
Income level:				
Low	39 (13.0)	22 (12.2)	17 (14.2)	0.446
Middle	195 (65.0)	114 (63.3)	81 (67.5)	
High	66 (22.0)	44 (24.4)	22 (18.3)	

* Numbers and *column* percentages (in parenthesis).

† P-values from Fisher's exact test.

Table 2. Association between the depression and anxiety level with socio-demographic factors of study participants; mean values from the General Linear Model

Socio-demographic factors	Unadjusted models			Multivariable-adjusted models		
	Mean*	95%CI	P	Mean	95%CI	P
Sex:						
Women	41.4	39.0-43.9	0.941	43.9	41.3-46.5	0.573
Men	41.3	38.3-44.3		42.9	39.8-45.9	
Age-group:			**0.001 (2)†**			**0.123 (2)**
≤30 years	37.0	33.8-40.1	0.001	40.8	37.4-44.2	0.141
31-50 years	42.0	38.9-45.1	0.298	43.9	40.8-47.1	0.876
≥51 years	45.7	42.3-49.1	reference	45.4	41.9-49.0	reference
Place of residence:						
Urban areas	43.4	40.6-46.2	0.061	45.5	42.5-48.5	0.022
Rural areas	39.8	37.2-42.3		41.3	38.6-44.0	
Educational level:			**<0.001 (2)**			**<0.001 (2)**
Low	50.9	46.9-54.9	<0.001	49.0	44.5-53.5	0.001
Middle	42.0	39.6-44.4	<0.001	44.3	41.0-47.7	0.005
High	33.6	30.3-37.0	reference	36.9	33.0-40.8	reference
Income level:			**<0.001 (2)**			**0.023 (2)**
Low	53.3	48.4-58.3	<0.001	49.5	44.1-54.8	0.030
Middle	41.1	38.8-43.3	0.027	41.0	38.4-43.7	0.929
High	35.2	31.4-39.0	reference	39.7	35.5-43.9	reference

* Range of the summary score from 16 (the lowest level of depression and anxiety) to 80 (the highest level of depression and anxiety).

† Overall p-values and degrees of freedom (in parentheses).